

Northeast and Mid-Atlantic States Regional Low Carbon Fuel Standard Stakeholder Meeting¹

**New Jersey Bureau of Public Utilities, Newark, October 27, 2009
Facilitator: Catherine Morris, The Keystone Center**

63 people attended the Newark LCFS meeting which started at 9:30 and ended around 4:30. See Appendix 1 for the agenda and Appendix 2 for the attendees.

Welcome

Jeanne Herb, NJ Department of Environmental Protection (DEP), opened the meeting and explained its purpose was threefold: 1) to let stakeholders know about efforts underway among participating states and the decision points; 2) to let stakeholders bring forward comments about what should be done; and 3) to let stakeholders confer with each other and discuss the best way to resolve difference and make progress. The LCFS process has been very robust, with almost a dozen stakeholder meetings since March 2009. Ms. Herb described the status of the LCFS process, from the Commissioners' Letter of Intent signed in December 2008 to the current effort to work toward an MOU by the end of this calendar year. She likened the LCFS effort to the transportation equivalent of RGGI, noting that transportation GHGs are more than 30% of GHGs for the NE. She enumerated potential benefits of an LCFS, including green collar jobs, relying less on imported petroleum, using regional biomass resources, and more renewable energy. Finally, she emphasized the potential of a Northeast-Mid-Atlantic LCFS demonstrating leadership for national program development.

Overview of LCFS Program Goals, Structure & Process

Marjorie Kaplan, New Jersey DEP, explained the structure of the meeting and introduced the state representatives present. Meeting summaries will be posted online; comments will be accepted through Nov. 10. She elaborated on the three available policy tools to address GHG emissions in the transportation sector: vehicle miles travelled (VMT), vehicle efficiency, and fuels. She outlined the structure of the LCFS initiative, including committees and work groups. She explained that states are looking for input on the following issues: regulated parties, compliance target (10% in 10 years being under discussion), baseline CI for gas and diesel, inter-regional and national issues, inclusion of heating oil, economic analysis, sustainability criteria (including indirect land use change, or iLUC), credit creation and trading, and monitoring and evaluation.

Matt Solomon, NESCAUM, presented the goals of an LCFS program that would be appropriate to the fuels characteristics of the region. He emphasized that the program would aim to be not a cap on transportation emissions, but a measure of lifecycle carbon intensity of different fuels. He

¹ Note: Powerpoints used by presenters can be found using the following link
<http://www.nescaum.org/documents/northeast-and-mid-atlantic-states-regional-low-carbon-fuel-standard-stakeholder-meeting-newark/>

reiterated some of the similarities and differences with the CA program in detail, and discussed some of the issues unique to this region, such as heating oil use.

Michelle Manion, also from **NESCAUM**, continued the presentation describing future potential benefits of an LCFS policy in the region, including reducing its vulnerability to volatile fossil fuels prices. She then detailed feedstocks that could be used as resources in the region, like Municipal Solid Waste (MSW), woody biomass, and agricultural residues. She presented potential reductions in carbon intensity (CI) from the use of such resources, as well as in an aggressive scenario of plug-in hybrid vehicles (PHEV) adoption.

Mr. Solomon then concluded with comments on the potential for changing the grid resource mix, consequences of relying on electricity from different sources as an LCF, the difficulty of gauging customer behavior at this point, and the complex issue of allocating the carbon credits generated through PHEVs and similar energy storage options.

Question and Answers (Q&A)

Q. Is there going to be analysis of electricity's CI and batteries' CI on a life cycle basis?

A. GREET is able to evaluate lifecycle emissions of both electric batteries and liquid fuels. The question of hardware assessment analysis is different: neither electricity nor liquid fuels accounts for that (vehicle infrastructure, batteries (metal, lithium, etc.).

Q. How is RE considered zero emissions, with its infrastructure needs?

A. GREET assumes RE to be zero-emission, because the life-cycle GHG emissions are extremely low when spread out over the life of the resource.

Q. Will NESCAUM and states rely on EPA and CARB figures and do they not plan to conduct original analysis on iLUC,? If so, how will the analysts answer criticisms of the GTAP model?

A. That is correct, there will be no original analysis. NESCAUM is currently noncommittal as to what the approach will be, but will review the models currently available, taking into account peer reviews and updates that have been conducted.

Q. MSW –to-ethanol is being commercialized, and has a higher yield than listed in the charts shown. Will NESCAUM be reviewing estimates of yields for different resources?

A. Yes, we have used very conservative figures on purpose thus far. Also, prices are variable and dependent on technology, some of which is not yet commercialized so the values will be periodically reviewed.

Q. How was the assumption for CI of electricity compared to other fuels developed?

A. The electricity CI figure varies significantly based on the time of recharging and may range from 100% coal to 100% renewable. We used GREET default values which coincidentally were equivalent to 100% oil.

Q. Is it possible that states might have different compliance targets in the region?

A. The aim is to be adopt a single target for GHG reductions for the entire region.

- Q. Has there been any discussion of leakage or fuel-shuffling, even within the country?
- A. The more widely adopted, the more effective the program will be. NESCAUM is looking closely at including home heating oil because of the leakage issue. Leakage outside the region is a reality as long as it is a regional effort, but states are hoping the Northeast has the ability to put appropriate signals in place to encourage other regions' participation. Also, RGGI has shown experience in dealing with leakage issues.
- Q. Have you factored in CCS for electricity?
- A. CCS could be used to mitigate CI of electric vehicles, and any pathway could be analyzed.
- Q. The wood estimate is on what time scale?
- A. The preliminary studies estimated 20% of all wood resources, having accounted for resources already being used, and without actual sustainable yield analysis (within a 20-year cycle, regeneration accounted for, etc.).
- Q. Could the LCFS have an ambivalent effect on GHGs? Using wood, what is the effect on GHGs?
- A. The point is that the LCFS is a performance-based standard, not a cap, so the end result in GHGs depends on energy demand (if demand increased more than reduction in CI, we could still have increasing GHGs).
- Q. If the purpose is to reduce GHGs, does it make sense not to link the LCFS to growth in global markets?
- A. LCFS is not meant to be done in isolation, but with other transportation policy efforts. RGGI states have begun discussion to look more broadly at the transportation sector, with LCFS as part of a portfolio.
- Q. How would the region treat the oil industry: using an average CI figure or going substantially above it, like they have in CA?
- A. NESCAUM is looking to take lessons from CA, but they are not committed to anything at this point.
- Q. Has cost per ton GHG reduced or other economics of LCFS been examined?
- A. Not yet. Economic analysis will be done after the MOU.
- Q. What is the timeline for compliance issues and creation of a credit market?
- A. From now until December, states will be concentrating on the MOU to the governors. Economic and sustainability analysis will be conducted in 2010, but there is no known year for launching a program.
- Q. How does using the Marcellus shale deposits to achieve greater energy independence compare in priority to our goal of reducing carbon emissions?
- A. NY and PA representatives have made it clear they are willing to work with NESCAUM and other states on this issue.

Q. If EGUs are able to generate carbon credits under RGGI, how will we prevent double-counting for that and for LCFS?

A. CA has identified the question of use of credits in overlapping markets, and their approach will be considered.

Stakeholder Panel #1: Transportation Fuels

Marcia Ways, of MD Department of Environmental Protection, introduced Robin Jenkins, Steven Levy, Al Mannato (Liquid Fuels), Michael Van Brunt, John Cabaniss (Electricity), Chris Cavanaugh (NG)

Mr. Levy, Sprague Energy, indicated that his company started early on to reduce emissions and it serves as a model for what the oil industry can do. He pointed out that an ultra-low sulfur diesel required large costs to convert existing refineries. For any new fuel, the energy industry would need equipment manufacturer buy-in (and warranties, which are key for investment), testing and standards professionals, infrastructure development, production capacity (storage and distribution, etc), and a solution to the problem of segregated system vs. a fungible supply and distribution system. He cautioned that technology evolution is undependable, and advocated doing what is possible now, such as using waste streams, and layering in other things later.

Ms. Jenkins, DuPont, indicated that that liquid biofuels were only a near-term solution. She said that an LCFS as one item in a portfolio was a good idea, but not if it impeded biofuels development, through for example, a threshold-based GHG standard, or improperly applied iLUC considerations. Market uptake will depend on policy and performance. DuPont has two current joint ventures in biofuels, in cellulosic ethanol with BP, and with cob and switchgrass in Tennessee. She concluded with the characteristics of an LCFS that would help speed the development of biofuels: include incentives that provide constant incremental monetary benefits for performance beyond the CI target, and establish fair and consistent comparison of fuels.

Mr. Manatto, API, opposes an LCFS in the region due to the duplication the policy would create with RFS Phase 2. He mentioned that the CA example show that an LCFS can even conflict with the RFS2. He warned against policies that promote fuel shuffling, and called an LCFS in effect an EV/PHEV standard. Another concern he raised is placing the obligation on the fuel suppliers who have no control over the end use technology (e.g. vehicles). However, if the LCFS goes forward, he stated the issues most important to consider include technology obligations, periodic updating of calculations, adequate compliance time, and waiver provisions. He also criticized the NESCAFF report for not considering iLUC, technical feasibility, or market readiness of advanced biofuels technologies.

Mr. Van Brunt, Covanta, detailed the benefits of municipal solid waste (MSW) as a fuel. He showed his company's focus on waste-to-electricity (currently there are 43 Covanta facilities in NE generating 1400 MW) and waste-to-diesel (a demonstration project). The benefit of both of these pathways is that avoiding landfill methane releases has a big GHG benefit, it has no iLUC effects, the waste is located close to areas of demand, and it enables ferrous and non-ferrous material recovery.

Mr. Cabaniss, Association of International Automobile Manufacturers, started his comments with a summary of the 3-legged stool of transportation: vehicle, fuel, consumer behavior. He emphasized that autos have many stringent standards for even one fuel, let alone all the new ones, and that consumer acceptance of fuel economy would be very important. Mr. Cabaniss also broached the subject of the legacy fleet, and the need for new fuels to be compatible with existing vehicles, since the market turns over very slowly. Changing consumer behavior and demand, he indicated, would be even more difficult.

Mr. Cavanaugh, National Grid, advocates CNG as an option in the LCFS because it generates a long-run opportunity, and makes use of underutilized infrastructure. In comparing this region to the CA model, he noted that pricing is significantly lower here on diesel and gasoline. He pointed out the domestic, diverse NG supply and that deliverability was improving. He endorsed an LCFS with a more aggressive carbon standard, a standard that more expensive, lower CI alternative fuels could benefit from, using incentives, but with no exemptions/ loopholes, and making credits additional and not in danger of disqualification by other benefits.

Q&A

Q. There seemed to be a consensus that there would be a 3% reduction in GHG from RFS2, requiring that the remaining 7% reduction must come from other fuels. Do panelists agree?

A. API will submit documentation for figures in comments.

Q. How the LCFS is applied is important, but how do we get at the 3rd leg of stool (vehicles)?

A. An LCFS makes an attempt to encourage vehicle technology (e.g. flex fuel vehicles), but it might be better to do this through an EPA "Tier 3" mandate. Also, fuels have very low emissions, but not yet low GHG emissions. The RFS does this as aggressively as possible for now. Mr. Levy commented that it is important to know priorities for the LCFS and how these are weighted, e.g. sustainable jobs, emissions, energy independence, etc...

Q. Where are DuPont and Coscoda in the process of scaling-up to commercial level?

A. Ms. Jenkins replied that the first plant was going to be at 50-100m gal/ yr for Butamax, similar to its corn ethanol facilities. Coscoda cellulosic ethanol plants are expected to have a similar production scale.

Q. If the RFS is appropriately structured (i.e. not a threshold), could we get past the 3% GHG reduction estimate from biofuels, and what about biomass potential?

A. Mr. Manatto spoke about the difference between economic analysis of market penetration and computer scenarios. Mr. Cabaniss also noted that once the fuel is commercialized, cars on the road would still need to convert.

Q. If EPA goes to an E15 standard, would that help or frustrate an LCFS?

A. Mr. Manatto guessed it would help (they would need E20 to accomplish mandate).

Q. Have you looked into landfill gas for medium and heavy truck usage in the NE?

A. Mr. Cavanaugh said he has looked into renewable gas for injection into low pressure distribution systems, not for direct use in NGV.

Q. Underground storage tanks have compatibility with fuels containing up to 10% ethanol, not further. Will states address this?

A. Nancy Seidman explained that since the states or the EPA haven't decided to go above E10, they haven't started discussions on this with fire departments, etc.

Q. Can you elaborate on the difficulty in quantifying a credit market?

A. Mr. Cavanaugh responded that a credit market needs to generate certainty in the long-term.

Q. Has EPA reviewed the MSW to diesel program?

A. Mr. Van Brunt replied that the bigger question was whether to include MSW under the definition of renewable fuel, and whether to separate it from biomass. MSW is included in the Waxman-Markey bill.

SH Panel #2: Heating Fuels

Steve Flint, NY DEC, introduced John Huber, Eric DeGesero (oil heat), Shelby Neal (bio heat), Charlie Niebling (wood), Jonathan Beckett (solar), Chris Cavanagh (NG)

Mr. Huber, NORA, presented comments on diesel as a transportation fuel and as a heating oil with low sulfur and particulate emissions. He thought that the fuel switching issue was important, and that continued efficiency improvements of heating equipment could also be the answer for GHG reduction. He pointed out that encouraging wood pellet fuel would increase PM emissions. He thought homeowner costs and timeframe for changing heating equipment were very important to consider. He concluded by stating that the liquid fuels industry was committed to blending sustainable biofuels (including the accompanying infrastructure, end-use storage and regulatory approvals), continuing efficiency improvements, and allowing for MSW and wood waste contributions to reductions. He believed that it was important to support all fuels and not pick winners (one solid, one liquid, one gas, and electricity was a good balance).

Mr. DeGesero, Fuel Merchants of NJ, believes a mandate to switch from NG to wood is wrong. His company is a leader in demand reduction, and this is another way to achieve GHG reduction. He criticized the NESCAUM report for wanting to replace heating oil with biomass, arguing that PM should be a concern, as well as the economics impacts on the pulp and paper industry. He suggested trying a wood-to-oil fuel to satisfy both industries. He also suggested comparing the CI of Marcellus Shale NG with CI and water quality effects of Canadian tar sands. As it is written, Mr. DeGesero does not support the LCFS including heating oil.

Mr. Neal, National Biodiesel Board, provided background on bioheat. Biodiesel is a mix of soybean oil, animal fats, yellow cooking grease, other (about 20%) and conventional heating oil. As fuel, its efficiency and quality has improved over the last 10 years, through better seeds, better farming, and better processing. He recommended including a heating oil category (including bioheat) in LCFS. He thought CA has done a pretty good job, especially its market oriented approach, which he argued is better than setting market penetration thresholds under

RFS2. Biodiesel is available, feedstocks are available (soy is the most significant fuel at 40%), but the cost of it is not predictable.

Mr. Niebling, NE Wood Pellet, portrayed heating oil demand in NE as an outflow of wealth to other parts of the world. Pellets and wood chips can meet at least 10% of this demand (5 billion gal #2 heating oil annually) through both new wood and forest/ agriculture/ urban/ residual/ clean C&D sources. Better bulk delivery of wood pellets would make it affordable and economical, citing the European example of automation. Some challenges include scale of technology, few incentives, regulatory barriers, price sensitivity to fossil fuel prices, variability of fuel manufacturing competency, and the capital investment of delivery infrastructure. He endorsed an LCFS that includes heating oil, and bringing biomass heat into line with other low-carbon fuels. Finally, he advocated a “systems benefit charge” (reverse tax on fossil fuels) proportional to the CI of the fuel, saying that even a very modest one can generate revenue for market transformation, reducing the capital hurdle, and assisting the heating oil industry in diversifying. He commented that a standard or mandate would be appropriate, but difficult in the case of heating oil, to lump in with other transport fuels. He also mentioned that a mandate could be phased out if the goal was being met faster than expected.

Mr. Beckett, RW Beckett Corp., pointed out that the two biggest residential energy end-uses are space heating and water heating (41% and 19%), and that these can be accomplished using solar thermal energy. He showed a slide comparing solar resources of the US with those of Spain and Germany, and contrasted the difference in how much of that resource had been exploited (US, even in NE, has much higher-level resources, but does not use them). He also pointed out that solar thermal pre-heating of water can improve the efficiency of other appliances. Solar thermal systems can be integrated into other heating systems, and the industry is well-equipped to handle solar installations.

Mr. Cavanagh, National Grid, thinks NG as a heating fuel would compete well under an LCFS. He promoted renewable gas opportunities, such as precombustion sequestration (H-rich NG). He recommended that transportation fuels be the primary focus, heating, if included, being secondary. He also showed concern over double-dipping in the credits market.

Q&A

Q. Could you explain what is meant by precombustion sequestration?

Mr. Cavanagh replied that it is a process which segregates solid carbon from H-rich gas, and that there is a company in Canada, in the testing phase of production.

Q. Would a systems benefit charge approach be in lieu of a credit market or in addition?

Mr. Niebling said it would be in lieu of, since he doesn't see how to apply carbon market to the heating oil industry, with its complex supply and delivery system. He elaborated that it could be called an assessment or a carbon tax.. Mr. DeGesero remarked it was interesting that there is no comparable charge used in regulated utilities for the wood industry. Mr. Niebling suggested it was possible to rethink how system benefit charges on gas and electricity utilities now are allocated, to allow funding of projects outside of gas and electric; Mr. Cavanagh concurred that this policy needs changes.

Q. Does oil want to be included in the LCFS?

A. Mr. DeGesero said they are working toward B5 and low-sulfur goals, but that the industry is against how the LCFS is set up. Mr. Huber said NORA does not take a position on this.

Q. How can a state determine what will be in place by a certain year, to be able to aim for market readiness of the state's industries?

A. Mr. Huber said it depends on the threshold of state action, industries will follow that. Mr. Neal responded that vehicles should be looking at B5, projecting B20 in a few years.

Stakeholder Panel #3: Sustainability

Serpil Guran, NJ Department of Environmental Protection, introduced Jeremy Martin, Geoff Cooper, Margaret Brennan-Tonetta

Mr. Martin, Union of Concerned Scientists, opened his comments by stating that biofuels must account for fossil fuel carbon and carbon emitted from changes in land use. He did not believe that biofuels were being unfairly singled out. He also maintained that water quality and quantity concerns were important in this discussion, as irrigated corn ethanol exacerbates depleted aquifers and water quality. There is a need for a balance in food, fuel and climate change mitigation priorities.

Mr. Cooper, Renewable Fuels Association, first posed the question of who is responsible for sustainability? He referred to the Field-to-Market study of corn, soy, and other crop production efficiency indicators, which shows land use and soil loss improvements in the past 10 years. Looking only at direct GHG emissions, corn ethanol produces 48-59% less than gasoline. And concerning indirect emissions from land use change, he argued that 1) there is no need to bring new land under cultivation to reach RFS targets, and 2) there is no correlation between increasing biofuels and deforestation in the Amazon. Furthermore, he thought that biofuels had not been treated fairly in the CA rule.

Ms. Brennan-Tonetta, Rutgers University, argued that the challenge is to find a balance between credibility, complexity and reality. She showed a table of sustainability standards that showed the complexity of such a balance, including getting enough information to determine compliance. She maintained that thresholds are not the best method, and the states should consider overlap with current regulatory standards. Prioritizing information and technology requirements is important, as is economic analysis. Finally, she discussed some of results of on-going research of the NJ Agricultural Experiment Station.

Q&A

Q. All corn is not irrigated, according to a University of MN study looking at water use of corn production; furthermore, electricity is a significant water user, according to an NREL study.

A. In fact, responded Mr. Cooper, 85-90% of corn crop is not irrigated. What is, has been for a long time, and not encouraged by recent biofuels development.

Q. Is using greywater supplies for electricity generation practical?

A. Mr. Cavanaugh responded that electricity laws in some places even prohibit using potable water for electricity generation.

Q. Do you take conversion processes into account for making CNG (for nat gas fleets)?

A. Ms. Brennan-Tonetta replied that after completing the bioenergy assessment project, phase 2 will examine which fuels are the 'low-hanging fruit.'

Opportunities for Comment

- **Michael Whatley, Consumer Energy Alliance**, delivered several points: 1) logistics of LCFS need to be carefully considered; 2) LCFS is an expensive option for reducing GHG and should be weighed against other policy pathways such as CAFÉ and tailpipe emission standards. 3) If ethanol is allowed, then 50% of all vehicles would have to use greater than E-10 blend to achieve goal; if ethanol is not allowed, natural gas and electric vehicles will be the only viable options. He also noted that there are no commercial cellulosic production facilities; and 4) RD&D is critical.
- **Gary Mar, Canadian Embassy, Alberta**, argued that the US has a valid interest in obtaining some level of energy security through purchasing oil sands from Canada. He noted that Canada has a robust regulatory regime to minimize the environmental impacts of oil sands development. He doubts the validity of many of the other points raised in the discussion about the oil sands. LCA of transportation fuels' CI is still in its infancy, and he pointed to the Jacobs Consultancy study, which shows the life-cycle CI of a variety of crudes with emissions ranging from 18% higher to 8% lower than average; the highest being from CA's Kern County production, not oil sands.
- **Luke Tonachel, NRDC**, mentioned the NRDC had signed the recent letter to the governors. He reiterated the importance of all three legs of the stool -- vehicles, fuels, and consumer alternatives to driving -- as important to reducing GHG in the transportation sector. He affirmed that clean fuels with low carbon would also wean consumers off foreign oil. He strongly supports including iLUC in the LCFS, and recommended that oil sands, oil shale and coal-to-liquids be distinguished from conventional fuels in characterizing their CI. Finally, he believes that the LCFS and RFS2 should be complementary.
- **Jeremy McDiarmid, EnvironmentNortheast (ENE)**, strongly supports an LCFS for NE, with an MOU by the end of the year. As it is written, the LCFS creates good market signals and will create pressure to reduce CI of high-carbon fuels. It would also help reduce overall GHGs in transport sector if LCA captures the full GHG footprint. He appreciates the process to gather stakeholder input and encourages its continuing. ENE also signed the recent letter to the governors.
- **Andrew Schuyler, New Fuels Alliance**, said that advanced biofuels companies do not support selective enforcement for biofuels. He made three points: 1) he urged the states and NESCAUM not to do as CA did and give oil a free pass; instead, verify supply chain accountability for oil, just like biofuels has to do, 2) require parity: analysis should

encompass “indirect effects” not just iLUC- including opportunity cost of other fuels, and 3) consider durability: the program won’t last if isn’t balanced, it would chill investment.

Wrap-up

- Summaries of the stakeholder meetings to be prepared and posted.
- Presentations to be posted on NESCAUM website
- Comments taken until Nov 10 at lcfs@nescalum.org
- Hoping to get something out and signed to governors before holidays in December.

Appendix 1: Newark LCFS Agenda

Northeast and Mid-Atlantic States Regional Low Carbon Fuel Standard Stakeholder Meeting

October 27, 2009

Board of Public Utilities*, Newark, NJ

AGENDA

8:45 am Light Breakfast

9:30 am **Welcome** – *Jeanne Herb, Director of Policy, Planning and Science at New Jersey Department of Environmental Protection*

9:40 am **Meeting Goals and Ground rules** – *Catherine Morris, Facilitator*

9:50 am **Overview of LCFS Program Goals, Structure & Process**
Marjorie Kaplan, NJ Dept. of Environmental Protection, Office of Climate and Energy
Michelle Manion and Matt Solomon, NESCAUM

11:00 am **Clarifying Questions from Stakeholders** – *Catherine Morris*

11:30 am **Lunch** (*on your own*)

12:30 pm **Transportation Fuels** – *Stakeholder Panel #1*

- What are the technical and economic prospects for lower-carbon fuels and in what timeframe?

Introductions: *Marcia Ways, MD Department of Environment*

Liquid Fuel: *Robin Jenkins, Dupont-Danisco*
Steven Levy, Sprague Energy
Al Mannato, American Petroleum Institute

Electricity: *Michael Van Brunt, Covanta Energy*
John Cabaniss, Association of International Automobile Manufacturers

Natural Gas: *Chris Cavanagh, National Grid*

2:00 pm **Break**

2:15 pm **Heating Fuels** – *Stakeholder Panel #2*

- What are the prospects and timeline for low-carbon fuels for space heating?
- Should space heating fuels be included in a regional LCFS?
- How might non-liquid fuels be treated?

Introductions: *Steve Flint, NY DEC*

Oil Heat: *John Huber, National Oil Heat Research Alliance (NORA)*
Eric DeGesero, Fuel Merchants Assoc. of NJ

Bio Heat: *Shelby Neal, National Biodiesel Board*

Wood: *Charlie Niebling, NE Wood Pellet*

Solar: *Jonathan Beckett, RW Beckett Corp.*

3:15 pm **Sustainability of Low Carbon Fuels – Stakeholders Panel #3**

- What are the potential land, water, and air implications of expanding the use of low carbon fuels?

Introductions: *Serpil Guran, NJ DEP*

Jeremy Martin, Union of Concerned Scientists

Geoff Cooper, Renewable Fuels Association

Margaret Brennan, Rutgers University

4:15 pm **Additional Opportunity for Stakeholder Input**

4:45 pm **Wrap-up & Next Steps – Marjorie Kaplan, NJ DEP & Catherine Morris**

5:00 pm **Adjourn**

* *The NJ BPU at Newark is located on the 8th floor at Two Gateway Center, Newark, NJ, 07102.*
For directions see <http://www.state.nj.us/bpu/about/directions/#1>

Appendix 2: Attendees Newark LCFS Meeting (October 27, 2009)

Last Name	First Name	Organization
Anderson	Steve	NJ DEP, Office of Climate and Energy
Beaver	Tom	New Jersey Farm Bureau
Beckett	Johnathan	Beckett Corp.
Benton	James	New Jersey Petroleum Council
Brennan	Margaret	Rutgers University
Brenner	Marybeth P.	NJDEP- Office of Constituent Services
Buchanan	Keith	Sunoco
Cabaniss	John	Association of International Automobile Manufacturers, Inc.
Cavanagh	Chris	National Grid
Clarke	Jeffrey L.	NGVAmerica
Cobbs	Drew	API
Cooper	Geoff	Renewable Fuels Association
Dickson	Joe	Innovation Fuels, Inc.
Elliot	Matt	Environment New Jersey
Farrell	Don	Oilheating Journal
Flint	Steve	NY DEC
Galloway	Jack	Canopy Prospectus
Giffords	Frederic V.	Interstate Biofuels LLC
Gorgol	John	NJ DEP
Guran	Serpil	NJDEP
Hafesh	Joseph W.	JWH Consultants, Inc.
Headley	Ryan	Atlantic County Utilities Authority
Herb	Jean	NJDEP
Hogan	Tim	National Petrochemical & Refiners Association (NPRA)
Hornsby	Mike	PSEG
Horton	Dan J.	ExxonMobil Downstream Refining and Supply
Huber	John	NORA
Jenkins	Robin	Dupont
Johnson	Eric	Canopy Propectus
Knoeller	Craig	ExxonMobil Downstream Refining and Supply
Levy	Steven J.	Sprague Energy
Luftglass	Bryan	Linde LLC
Manion	Michelle	NESCAUM
Mar	Gary	Alberta Office in Washington, DC
McDiarmid	Jeremy C.	Environment Northeast
Medley	John	ExxonMobil Refining & Supply Co.
Merkel	Loula	Coskata, Inc.
Morris	Catherine	Keystone

Neal	Shelby	National Biodiesel Board
Parr	Michael	Dupont-Danisco
Perez	Gustavo	Clean Communities Program
Pyron	Kibui	Canadian Consulate
Richardson	Gail	Energy Vision
Ruder	Adam	NYSERDA
Salmi	Chris	NJDEP
Sanregret	Tristan	Alberta Office in Washington, DC
Schuyler (or Coleman)	Andrew	New Fuels Alliance
Seidman	Nancy	MA DEP
Sheperd	Tim	MD Department of the Environment
Siller	Richard	Hess Corporation
Simons	Howard	MD Department of Transportation
Smith	Mark O.	Smith Pizzutillo LLC for NuStar Energy
Solomon	Matt	NESCAUM
Taylor	Shinn	Chesapeake Energy
Tonachel	Luke	Natural Resources Defense Council
Trowbridge	Brian	PA DEP
Van Brunt	Michael E.	Covanta Energy
Ways	Marcia	MD Department of the Environment
Webb	Greg	Archer Daniels Midland Company
Whatley	Michael	Consumer Energy Alliance
Wheeler	Philip A.	DNREC
Wilson	Richard D.	National Environmental Strategies
Wurth	Marilyn	NY DEC