



## Stakeholder Meeting Agenda

March 26, 2015, 9:30-11:30

### I. Welcome and Introductions

Marcy Bauer, eVgo, and Triangle Clean Cities Coalition  
Chairperson

Coalition Chairperson Marcy Bauer welcomed attendees and reviewed the mission of Triangle Clean Cities Coalition: to advance the Triangle Region's economic, environmental, and energy security by helping to reduce petroleum consumption in transportation.

#### Attendees:

Andrea Bachrach, North Carolina Clean Energy Technology Center  
Anne Wyrsh, GAIN Clean Fuel  
Antony Wambui, North Carolina State University  
Bob Armantrout, Piedmont Biofuels  
Brennan Bouma, Orange County  
Bruce Thompson, NCDOT  
Emily Barrett, Town of Cary  
Gaston Pierce, UNC Chapel Hill  
Mark Stark, UNC Chapel Hill  
Jerry O'Keeffe, PSNC Energy  
Joe Gordon, e-Energy Alternatives  
John Jessup, North Carolina Propane Gas Association  
Katie Drye, Advanced Energy  
Lacey Jane Wolfe, Triangle Clean Cities Coalition  
Marcy Bauer, eVgo  
Michael Boyd, City of Durham  
Mike Waters, Duke Energy  
Pat Davis, Orange Water and Sewer Authority  
Phyllis Jones, NC DENR, Division of Air Quality  
Steve Rice, NC DENR, Division of Air Quality  
Randy Paschal, City of Sanford  
Timo K. Pakkala, Capital Ford

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Duke Energy  
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North Carolina Propane Gas Association

Piedmont Natural Gas  
PSNC Energy  
Triangle Air Awareness  
Town of Carrboro  
Town of Cary  
Waste Industries  
Wake County



## II. NCDOT and Biodiesel

Bruce Thompson, Fleet Procurement Manager, NCDOT

Bruce Thompson from the North Carolina Department of Transportation (NCDOT) presented on NCDOT's biodiesel program. NCDOT started using biodiesel in 1994, when they transported that fuel from Florida in a state-owned tanker. They had a fuel and tank management plan already in place, which eased the transition from conventional diesel to 20% biodiesel blend (B20). Biodiesel is a cleaning agent in fuel tanks, so it can clog the tank system during the transition. It's therefore important to have the tanks properly cleaned during the transition from diesel to biodiesel.

Quality is of the utmost importance for NCDOT's biodiesel. NCDOT has put policies in place to ensure the quality of their biodiesel fuel. The fuel needs to be turned every 120 days to avoid separation time. This goes for vehicles, too. As long as the engines are run regularly, and the tanks are turned regularly, this is not a problem for NCDOT. Sometimes the price of biodiesel can be higher, and even much higher, than conventional diesel. The pricing has not kept NCDOT from using biodiesel because they are committed to using B20.

In the past, they have had biodiesel quality issues. They learned from experience to go to use a statewide contract to ensure fuel quality. Departments of transportation from other states have had problems with their biodiesel, and Bruce suspects that poor fuel quality to blame. NCDOT took over writing the specifications for the statewide contract for biodiesel. Over time, the specifications have improved through experience. One major lesson learned was to put the quality assurance on the vendor, rather than on the consumer.

April through August, the biodiesel is source-neutral because the warm climate prevents gelling issues (however, they do not allow beef tallow or palm oil at any time, which has a cloud point of about 60 degrees). September through March, they require the feedstock to be soy.

The fuel vendor also agrees that two random samples of the fuel will be tested each quarter by a third-party lab at the vendor's expense. The vendor will be penalized \$1,200 per sample if the fuel is found to be outside of the specifications. Bruce estimates that only a few penalties have been necessary since this stipulation was added.

In the early years, the vehicle manufacturers were wary of the use of biodiesel. NCDOT assured vendors that they were committed to the use of B20. NCDOT explains that NCDOT is responsible for the fuel, but vehicle vendors are responsible for the vehicle warranties. If the vehicle vendor says that B20 will void the vehicle warranty, NCDOT finds another vehicle vendor. Bruce noted that the state contract puts the burden of responsibility on the fuel vendor. If there is damage to the vehicles, the fuel vendor is responsible. In the beginning, NCDOT did not require all fourteen divisions to convert to biodiesel. Beginning in 2006, though, they required that all divisions use it. B20 blend is ideal because the price is manageable and most manufacturers warrantee the vehicles at that point.

They have dispensed over 40 million gallons of B20 since 2003. The volume has been steadily increasing over the years, though it varies from year to year. They use about 7 million gallons annually.

Any state agency that doesn't pay tax (or government agent) is able to fuel out of NCDOT's tanks. Most fuel sites are staffed during the day and some are open 24 hours per day.

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### III. Current Trends in Biodiesel Production

Bob Armantrout, Piedmont Biofuels

Bob Armantrout from Piedmont Biofuels then gave an update on biofuels production. Piedmont Biofuels produces biodiesel in Pittsboro, North Carolina. They have four employees. They collect used fryer from over 200 restaurants, primarily in the Triangle Area. They take that used oil, convert it to biodiesel, and deliver the fuel back to customers in the Triangle Area.

Biodiesel is a renewable fuel that can be used in a conventional diesel vehicle. Oil needs to be processed and converted to biodiesel before it can be used in vehicles. Generally, straight vehicle oil is not considered an acceptable vehicle fuel. It's important for end-users to understand the impact of fat sources on the behavior of their biodiesel. NCDOT, for example, requires that only soy biodiesel be used between September and March.

Biodiesel can only be used in diesel vehicles. When you purchase biodiesel, it's important to know the cloud point of that biodiesel and how that influences the handling and storage of the fuel. This can sometimes be managed by having different fuel strategies for summer and for winter, like NCDOT does. If fuel gets below 40 degrees routinely, high-biodiesel blends are not feasible. NCDOT's fuel tanks are underground and therefore stay at 60 degrees.

The cost of feedstock is responsible for about 75% of the cost of biodiesel. This feedstock cost is quite high at the moment, while diesel only costs about \$1.83. As a result, North Carolina used to have seven producers but now is down to about three. Waste vegetable is a waste product, but it does have a value. Much of that oil is used in cosmetics. Competition is high for restaurants' used oil. Customer service is important in recruiting these restaurants. Piedmont Biofuels is no longer pursuing enzymatic biodiesel.

To learn more about Piedmont Biofuels, visit <http://www.biofuels.coop/>.

### IV. Announcements

Lacey Jane Wolfe, Triangle Clean Cities Coalition

- a. Triangle clean Cities Coalition has a new staff member, Mary Sell. Mary was unable to attend this meeting because she is on maternity leave. She will return to work on May 18, 2015.
- b. Triangle Clean Cities Coalition was awarded funding for a new grant program, which will provide vehicle demonstrations in North and South Carolina and Tennessee.

### V. Stakeholder Updates

Each stakeholder is invited to give a brief programmatic update

The City of Durham recently received two hybrid vehicles, to replace two pickup trucks. This is improving fuel economy from 15 mpg to above 40 mpg.

GAIN Clean Fuel has recently opened and commissioned their new CNG station in Sanford, NC. Another station is being built in Charlotte. When stations are being commissioned, GAIN offers free fuel for a few days while they test the station, so that will be available in Charlotte as well.

Orange Water and Sewer Authority has been using B20 for many years. They have had a very positive experience with it. They have three hybrid vehicles, a Ford Escape, a Prius, and a Civic. They have considered electric vehicles for their fleet but haven't found the right ones yet. (Marcy Bauer noted that EV Fleet produces an all-electric truck that can travel up to 90 mph). A more recent effort is to capture biogas that is generated by the wastewater treatment system. They currently flare 61 million BTUs of biogas a day. They would like to be able to capture, treat, and condition that biogas and make it into a renewable fuel.

Orange County has two DC Fast Chargers coming online soon, and Orange County will do a ribbon-cutting soon. The county was also selected for a CFAT grant and will deploy seven ambulance APUs with Stealthpower units. This

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product has been used by the military and other end-users. They are also submitting an application for propane vehicles soon.

Joe Gordon from e-Energy Alternatives does CNG and propane conversions for the top five manufacturer systems. Ford will have the 2.5 liter, 3.7 liter, 5.0 liter, 6.2 liter and 6.8 liter engines will be available in the gaseous prep package in the coming year. E-Energy Alternatives operates in South Carolina and serves North Carolina fleets as well. They also have mobile fueling capacity for CNG.

The North Carolina Propane Gas Association just received their new propane vehicle. It was converted in the parking lot of their building and the conversion was done in about a day. The vehicle has a bifuel system so it can use both propane and gasoline. They also received CFAT funding to add a new fueling system that allows propane to be dispensed without extra safety requirements. The propane mower incentive is still available. If you apply for the propane mower incentive program by March 30, you can still receive a rebate of \$2,000 for OEM and \$1,000 for after-market conversions. On April 1, the incentive amounts will go down by half.

Capital Ford continues to sell propane vehicles and gaseous-prepped vehicles. They provided NCPGA's propane-prepped truck.

NC DOT uses ethanol in addition to biodiesel. A few years ago, North Carolina decided to grow canola as a pilot program in the interchanges and other highway spaces, and NC State University turned it into biodiesel. Overall, that turned out not to be cost-effective.

NC State University is conducting transit services planning and are examining their fuel efficiency. They want to make sure that they are being fuel-efficient.

UNC Chapel Hill uses B20 and E85 and has neighborhood electric vehicles.

The Town of Cary is conducting a comparison of idle reduction tech versus GIS/GPS to see which is better at improving fuel efficiency (and looking at payback/ROI), will report on this later. 5-year transit contract coming up. The Town pays for the fuel, considering at Gillig HD vehicles and the MV-1 for paratransit, looking for vehicle recommendations to court for a new contract.

Advanced Energy – NCPEV Task force undergoing webpage refresher ([www.ncpevtaskforce.org](http://www.ncpevtaskforce.org)), will be up and running by next meeting, will be including EVs available for sale in NC, DCFC content. Also looking at launching community recognition program at fall summit.

NCCETC – The propane RFP is open for one more week for propane projects. This will be the last RFP for a while until new round of CFAT funding begins. They are launching Fuel What Matters, which will include TV and radio advertisements and other campaign elements. This will launch in April. They are also hiring a new clean transportation specialist to replace Marcy.

Duke Energy presented on the outlook for plug-in electric vehicles. Duke Energy's fleet has about 35-40 electric vehicles. They are adding about 63 new utility trucks (50 Silverados, etc. from Via) and 13 class 6-8 trucks that are plug-in hybrids. The major benefit is that they are plug-in hybrids. They should take delivery in the next month or two. These vehicles are upfits from the OEMs. The EREV system (extended-range electric vehicles) which extends the range of a traditional vehicle by around 40 miles through the electric battery. Duke Energy has committed 5% of capital expenditures toward green energy initiatives. In general, six plug-in vehicles have dominated electric vehicle sales recently. Decreased fuel prices have slowed somewhat the adoption of electric vehicles. Automakers, however, continue to invest in electric vehicles. This includes vehicles produced overseas. North Carolina has no major incentives for alternative fuel vehicles at this time. Marcy Bauer noted that there is an extra fee for electric vehicles.

*Our next stakeholder meeting will be Thursday, May 28, 2015, from 9:30 to 11:30 at  
4307 Emperor Boulevard, Suite 110, Durham 27703*

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