



Stakeholder Meeting Summary

June 24, 2014, 9:30-11:30

I. **Welcome and Introductions** Jeff Andre, Coalition Chair

Attendees:

Laura Corin, University of North Carolina at Chapel Hill

Sarah Bruce, Triangle Clean Cities Coalition

Kathy Boyer, Triangle Clean Cities Coalition

Shiyong Qiu, Triangle Clean Cities Coalition

Brennan Bouma, Triangle Clean Cities Coalition

Lacey Jane Wolfe, Triangle Clean Cities Coalition

Charlie Juhasz, SSI

Belen Baca-Costa, SSI

Tobin Freid, City of Durham and Durham County

Emily Barrett, Town of Cary

Michael Boyd, City of Durham

Rich Cregar, Wilson Community College

Jeff Andre, BuildSense

Rob Knight, North Carolina Oil and Gas

Russ Knight, North Carolina Oil and Gas

Phillip Massey, Halifax Community College

Hunter Taylor, Halifax Community College

Ward Lenz, Advanced Energy

Katie Drye, Advanced Energy

Andrea Bachrach, North Carolina Clean Energy Technology Center

Joe O'Neill, Piedmont Natural Gas

Claire Batista, NCSU EcoCAR Team

Anne Galamb, NCDENR Division of Air Quality

Steve Rice, NCDENR Division of Air Quality

Thanks to our members for making the TCCC possible:

BuildSense
Capital Ford of Raleigh
Duke Energy
NCDOT
NIEHS
North Carolina Propane Gas Association
Piedmont Natural Gas

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



II. Stakeholder Excellence Awards Lacey Jane Wolfe, Coordinator, and Jeff Andre, Coalition Chair

Triangle Clean Cities Coalition recognized Advanced Energy for their work in displacing petroleum in the Triangle Area. While Advanced Energy is involved in many projects to support electric vehicles in North Carolina, this award specifically recognized the achievement of their study of electric vehicles. Advanced Energy's petroleum displacement was equivalent to growing 3,600 tree seedlings for 10 years, in terms of CO2 emissions avoided. Triangle Clean Cities Coalition is fortunate to have Advanced Energy as a stakeholder. Thanks again to everyone who contributed data to our annual alternative fuel vehicle report to the US Dept of Energy!

III. Carolina Blue Skies Initiatives: Impacts and Hybrid Highlights Kathy Boyer, Energy and Environment Program Manager

Kathy Boyer presented the successes of the Carolina Blue Skies Initiative. This project was funded by the U.S. Department of Energy through the American Recovery and Reinvestment Act. It is a bi-state effort to create and retain green collar jobs and reduce dependence on foreign oil by increasing the availability of alternative fuels in North Carolina and South Carolina. The Department of Energy provided \$12 million in federal funding and project partners provided \$19 million in cost share.

The project involved hybrid vehicles, as well as vehicles fueled by propane and compressed natural gas. The grant also installed fueling stations that dispense electricity, propane, compressed natural gas, ethanol, and biodiesel.

As for hybrids, the total investment in light-duty vehicles was \$374,258 and the investment in heavy-duty vehicles was \$4.9 million. Some of the project partners who deployed hybrids were Town of Cary, City of Fayetteville, and Duke Energy.

The key lesson learned for hybrid vehicle deployment was the necessity of driver training to maximize the fuel savings of a hybrid vehicle. Makes and models vary widely in their fuel economy and performance so it is essential for a fleet to select the best vehicle for their duty cycle. Technology vetting is critical to achieving fleet adoption. This was challenging for this grant, which encouraged a rapid infusion of funds into the economy.

IV. Hydraulic Hybrid Project Emily Barrett, Town of Cary

Emily Barrett is the Town of Cary Sustainability Manager. She worked with the Town's Fleet Manager to deploy a Parker Hannifin Autocar E3 hydraulic hybrid refuse vehicle. On average, the Town sees a 2.0 mpg average for their ICE refuse vehicles. For the hydraulic hybrid, Town of Cary saw about a 40% improvement in fuel economy. Town of Cary runs a B20 shop, so all of their diesel vehicles use B20 biodiesel, except for fire apparatus vehicles. Emily also noted that driver training is very important. Brake jobs were also greatly reduced with the hybrid because the energy from stopping is captured by the hydraulic system. Town of Cary's brake jobs are anticipated to go from every 18 months to every 5 years or more. Over a 10-year period, that will save the Town \$20,000. This brings the 10-year savings to \$190,000 dollars, which was about equal to the incremental cost of the truck. It will also save 57,000 gallons and 506 metric tons of carbon dioxide equivalent. This particular model didn't perform well in cul-de-sacs due to its turning radius, and Town of Cary has communicated this to the manufacturer. Town of Cary is still considering whether they would purchase additional hydraulic hybrids.

Thanks to our members for making the TCCC possible:

BuildSense
Capital Ford of Raleigh
Duke Energy
NCDOT
NIEHS
North Carolina Propane Gas Association
Piedmont Natural Gas

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



V. Hybrid Resources from Clean Cities Brennan Bouma, Assistant Coordinator

Brennan Bouma presented resources that Clean Cities offers for hybrid vehicles. While the average consumer might equate “hybrid” with “Prius,” this vehicle technology includes light- and heavy-duty vehicles as well. Fleet managers will find hybrid buses, refuse haulers, box trucks, and many more options. Clean Cities provides a Buyer’s Guide for medium- and heavy-duty hybrid vehicles. This guide is available free of charge to stakeholders.

Another great resource is the Alternative Fuels Data Center vehicle cost calculator. This tool will give you an estimate of vehicle and fuel costs over a 15-year period. It will allow the user to compare different models side-by-side and even factor in leasing options to calculate a final payback. 11 attendees reported that they have used tools on this website before.

The fueleconomy.gov resource allows potential buyers to compare hybrid vehicle models side-by-side, taking fuel costs into account. Brennan mentioned that there are hybrid vehicles on the state contract, offering a lower cost to those who are eligible to use the state bid. 15 attendees reported that they have used tools on this website before.

VI. Stakeholder Updates Each stakeholder is invited to give a brief programmatic update.

The NCDENR Division of Air Quality reported that they are close to releasing an alternative fuels grant for replacement and repower of diesel vehicles. These funds are federal, pass-through funds. In September, Anne Galamb will send the announcement of Triangle Clean Cities, who will distribute it.

NC State University EcoCAR team won’t be continuing in the EcoCAR competition. They are considering spinning off their vehicle into a hybrid SAE competition. The vehicle uses hybrid and biodiesel as fuels.

Piedmont Natural Gas recently opened its tenth public CNG station in Knoxville, TN. They are also building a large, private station in Wilmington for transit. In general, Piedmont builds stations that serve the public and existing local fleets. In many cases, long-haul and over-the-road fleets will also use the stations, but they are hard to plan for. The stations are all built to accommodate long-haul trucks.

Advanced Energy has recently partnered with the North Carolina Clean Energy Technology Center to co-host the NCPEV Taskforce Quarterly meeting on October 22nd. This will be connected to the Southeast Alternative Fuels Conference. Registration for that event is open now. September 15th-20th Advanced Energy will host several events as part of National Drive Electric Week. Advanced Energy also launched a multi-family residential charging working group.

Drew White and Karim Nice are in the investigational stations of becoming a facility that converts used vehicles to run on CNG. They are interested to learn how many years fleets keep their vehicles, and what type of vehicles the CNG distributors typically see come through the station.

The North Carolina Clean Energy Technology Center (formerly the NC Solar Center) still has some spaces open for sponsors and exhibitors for the Southeast Alternative Fuels Conference. Registration is open now. All of the pre-conference trainings are included in the registration. The Clean Tech Center plans on releasing an RFP this fall, perhaps in September. This will be very similar to the last 2 rounds of the RFP, so you can take a look at those documents on their website. The Clean Tech Center’s Smartfleet program has been launched. It’s a straightforward registration process and enrollment is open year-round.

Thanks to our members for making the TCCC possible:

BuildSense
Capital Ford of Raleigh
Duke Energy
NCDOT
NIEHS
North Carolina Propane Gas Association
Piedmont Natural Gas

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



Halifax Community College attended their first meeting today. They are here to learn. They are interested in providing alternative fuel technician training at their college.

North Carolina Oil and Gas is also a first-time attendee. They are a landowner coalition that is interested in natural gas. They want to craft a lease that is fair to landowners and to the natural gas extraction company.

BuildSense continues to operate their natural gas fleet. They initially had some maintenance issues, but everything is running well now. Jeff Andre is willing to speak with any stakeholders about CNG vehicles.

Wilson Community College plans to offer hybrid training technicians courses. ASE provides many automotive technician training certifications, but not for hybrid vehicles. SAE (Society of Automotive Engineers) has developed two new credentials for hybrid technicians. Rich Cregar will earn the instructor credential soon and then he will be able to teach these training sessions in the Triangle.

The City of Durham plans to purchase some new vehicles and is selecting those with good fuel economy to reduce petroleum use. Their fire department now uses two Prius hybrids and they see about a two-year payback.

Town of Cary's facilities group is interested in piloting propane for lawn equipment. They will try it out and then expand. Emily has had difficulty for finding truck and van mpg, which is not listed on fueleconomy.gov. Advanced Energy is helping Town of Cary to conduct an EV charging station analysis. Town of Cary is also making an analysis of their options for law enforcement vehicles.

County of Durham is investigating vehicle choices for the next year. The County continues to have issues with their Eaton model electric vehicle charging stations. The County had another motherboard break and had to be replaced. Two of their twelve stations now have had this issue. On the plus side, their charging stations are being used regularly.

SSI reports that funding for hydrostatic hybrid drive research has stopped. Now private industry is handling this research, primarily Parker and Eaton. SSI reports that the hydrostatic drive is not ready for deployment, but holds great promise. There are three major issues: reliability, quality, and durability. SSI is determining the effect of contamination of commercial components and how this effects the system. Charlie Juhasz has numbers that compare vehicles with different technologies. Triangle Clean Cities Coalition will distribute this information.

The University of North Carolina at Chapel Hill started to convert their vehicles to E85 about 8 years ago. The current fleet is about 175 vehicles. They have had a good experience with E85. They get fewer miles per gallon (about 15-25% less). They also use biodiesel for about 30 vehicles and have some neighborhood electric vehicles. The Ford Connect is coming out with an E85 version so UNC is making sure that this vehicle will be available on the state bid.

Triangle Clean Cities Coalition is intending to apply for a funding opportunity on behalf of the Triangle area. There are three areas of interest: deployment, training, and emergency preparedness. Concept papers are due August 1st.

*Our next stakeholder meeting will be Thursday, September 25, 2014, from 9:30 to 11:30 at
4307 Emperor Boulevard, Suite 110, Durham 27703*

Thanks to our members for making the TCCC possible:

BuildSense
Capital Ford of Raleigh
Duke Energy
NCDOT
NIEHS
North Carolina Propane Gas Association
Piedmont Natural Gas

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

