



Stakeholder Meeting Notes

January 22, 2015, 9:30 am–11:30 am

Attendees: Emily Barrett (Town of Cary), Jenna Craddock (Wake Tech), Jesse Freedman (Town of Chapel Hill), TJ Cawley (Town of Morrisville), Michael Boyd (City of Durham), Ron Orr (citizen), Tracy Goldberg (Ferrelgas), Alfred Cassidy (Kerr-Tar COG), Randy Paschal (City of Sanford), Lacey Jane Wolfe (Triangle Clean Cities Coalition), Sarah Bruce (Triangle Clean Cities Coalition), Marcy Bauer (NC Clean Energy Technology Center), Rich Cregar (Wilson Community College), Timo Pakkala (Capital Ford Group), Dick Sloane (citizen), Steven Rhodes (PSNC), Abby Gingrich (RTP Foundation), David Donahue (NCPGA), Kristi Brodd (Advanced Energy), Joe O'Neill (Piedmont Natural Gas), Steven Rice (NCDENR Division of Air Quality), Anne Galamb (NCDENR Division of Air Quality), Tim Stevens (Stevens Sausage)

I. Welcome and Introductions

Marcy Bauer, NC Clean Energy Technology Center

Marcy Bauer asked attendees to introduce themselves, welcomed new attendees, and thanked Tim Stevens for providing sausage and cured ham for the meeting.

II. Stevens Sausage Propane Project

Tim Stevens, Stevens Sausage

Tim Stevens of Stevens Sausage gave an overview of a recent project to convert vehicles to propane that began two years ago. He first described their company, run by 4 generations of Stevens family members and operating since the late 1800s. Their farm has numerous historic buildings alongside their production facilities. Stevens Sausage is one of only a handful of country ham curers left in NC; they also supply other pork product producers.

Stevens Sausage has a number of small and large vendors throughout the state. They still do their own deliveries and by converting to propane, they will probably be able to continue to do so for at least a few more years. Their salesmen take orders with iPads on their routes.

A number of factors influenced their decision to begin using propane fuel in their delivery vehicles.

- Stevens Sausage already had a large propane tank on site.
- Resale value: Stevens Sausage buys new vehicles and sells them after 5 years/250,000 miles; bi-fuel vehicles have lots of selling points and resale flexibility.
- Duty cycle: most vehicles return to the plant each night, log 40,000+ miles a year each, and stop and start frequently. This duty cycle allows for greater fuel cost savings.
- Costs of vehicles and conversions: grants assisted with covering the costs (\$8,500 per vehicle plus \$2,500 body transfer). Tim is saving \$13,500 per year per vehicle on fuel, but savings would be half this without the tax rebate. A good installer is key; ICOMM is the company Stevens recommended. They did decide to trade in some fairly new diesel vehicles, which resulted in some loss of equity. Not buying used vehicles helps greatly with ensuring that the payback period isn't longer than the life of the vehicle.

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- Costs of fuel: Propane is 15 cents per mile cost after tax rebate (50 cents per gallon). Gas is 34 cents per mile and diesel is 44 cents per mile, and this difference has remained fairly constant despite dropping gas prices. Stevens' fleet travels 234,000 miles per year and consumes 60,000 gallons per year of propane. Propane would have to be \$1.55 in order to equal gas operating cost. The longer the payback period, the more you need to consider volatility in fuel prices.

They had to add refueling infrastructure (e.g., shelter) for their vehicles, and the payback period for that will be a little longer than for the vehicles. They have had some issues, e.g., vapor, but they've been resolved.

All vehicles have GPS (in use since 2000) for tracking each vehicle's mileage and location, and they also track fuel usage by vehicle. GPS also helps increase loading efficiency: you see when the vehicle will arrive for its load. Trucks cost \$1 per mile to operate, so mileage can be a big savings. Because Stevens already had all of this data collected and tracked, filling out the grant applications was relatively easy.

Bi-fuel vehicles start their engines on gas, then switch to propane, which happens quickly unless it's cold outside. It's very easy to switch to gas if necessary / if repairs are needed on the propane system, so this secondary fuel system can be quite handy. There was one instance where the propane fuel system enabled a vehicle with a bad gas fuel pump to get back to the plant from Wilmington. Stevens will be buying a propane mower soon also.

Lacey asked where he has vehicles maintained. They all have a warranty, so they go to Capital Ford, but new vehicles have few issues. Because propane does not have lubricants, valves should be checked at 40,000 miles.

Some drivers were concerned about the location of the propane tank being behind the driver, but Stevens educated them that propane is much less volatile and the tank much stronger than a gasoline tank. He also involved drivers in testing the new engines. They found that the propane engines were quiet and supplied all the power they needed.

III. Demonstration of Alternative Fuel Implementation Toolkit Lacey Jane Wolfe, Triangle Clean Cities Coalition

AFIT Toolkit project was led the NC Clean Energy Technology Center in partnership with the Triangle Clean Cities Coalition, Centralina Clean Fuels Coalition, and Land-of-Sky Clean Vehicles Coalition. It can be found [at the AFIT Toolkit website](#) or by simply Googling "AFIT Toolkit." Lacey demonstrated one component of the toolkit, an easy-to-use cost calculator, which has already as been used with a number of fleets. Once at the [AFIT Toolkit website](#), click on the link for "Alternative Fuel Vehicle Cost Calculator," to download the calculator as an Excel.

This calculator helps a fleet manager determine if and when a project will achieve a return on investment, and how the investment impacts cash flow in the meantime. A number of alternative fuels can be selected for the comparison; Lacey's example was a hypothetical propane fuel project, and she simulated a dialog with a fleet manager (played by Dick Sloane) to illustrate the type of information needed to run the calculator:

1. About how many vehicles do you want to convert or purchase new?
2. About how many miles do these vehicles travel per year per vehicle?
3. What is the baseline fuel and what alternative fuel would you like to compare it to?
4. How long do vehicles stay on the road?
5. What is the cost of the baseline fuel vs the alt fuel?
6. (Average fuel economy is auto-calculated by the spreadsheet. Calculator will automatically adjust the fuel economy based on the fuels specified.)
7. What is initial vehicle cost (which needs to be paid off over time) for each type of vehicle (gas vs alt-fuel?)

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8. What is the budget for fueling infrastructure? Consider concrete pouring, pipes, protection, and annual maintenance costs (calculator will make maintenance cost recurring).
9. What is the budget for annual vehicle maintenance, vehicle maintenance technician salaries, and their training?
10. Is the vehicle to be financed or purchased outright? This affect the payback period.

The tool calculates the payback period and creates charts for ROI and cumulative CO₂ reduction. Users can adjust the different factors quickly and easily to reflect changing costs or grant offsets. Emily Barrett said this is a very useful tool to help people with less experience quickly figure out if this is something they want to pursue.

The group discussed the state vehicle contract, which will be released. Marcy Bauer of the NC Clean Energy Technology Center said she has an intern compiling all of the vehicles, their purchase price, and where they will be available that she will share with the group when it is finalized.

The calculator is just one of many helpful tools that are part of the AFIT Toolkit available at the NC CETC website. For example, there is a map of folks in NC using alternative fuels that can be filtered by fuel to help fleet managers connect with their peers for sharing experiences and discussing vendors. Anne Galamb said that she appreciates the contact information for projects; government staff can't recommend vendors, so having a resource she can point people to connect with others who have experiences on the ground is helpful.

Lacey reiterated that while the mission of the Clean Cities program is to reduce dependence on foreign oil and reduce emissions, it is also very important that the projects implemented are cost-effective and work well for the company or organization.

IV. Announcements

Lacey Jane Wolfe, Triangle Clean Cities Coalition

- GAIN Clean Fuel is offering free CNG at their Sanford location on Feb 4 and 5 as they commission their new station.
- Triangle Clean Cities staff person Kathy Boyer is on maternity leave for the next 3 months.
- Lacey is headed to Washington, DC at the end of February to meet with state representatives and their staff regarding the important work of Clean Cities and their stakeholders. If anyone is interested in joining her on the visit, please let her know.
- The Natural Gas Vehicle Institute is offering CNG technician and tank inspection trainings in February; Triangle Clean Cities Coalition stakeholders get a discount. Contact Lacey Jane Wolfe at lacey@tjccog.org for more information and a coupon code.

V. Stakeholder Updates

Each stakeholder is invited to give a brief programmatic update.

NC DENR, Division of Air Quality: DENR has a new secretary and a new deputy secretary. DAQ is getting a Diesel Emission Reduction Act (DERA) grant that may fund retrofits, conversions, and equipment substitutions. \$250,000 in funding will be available and perhaps more if the state matches the funds; look for an RFP summer/fall 2015. Also, 13 case studies on experiences, processes, & benefits that were done last summer on DOC conversions are now available on the DAQ website.

Advanced Energy: a couple of weeks ago, two AE working groups wrapped up. 1) A work group on multifamily installations of PEV infrastructure produced guides for residents and building managers; case studies are coming soon. 2) A work group did workplace charging a survey on workplace charging installations that has produced 1-pagers from a variety of private companies (SAS, GSK, NCSU, Fidelity Investments) on how they installed their

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stations and how the stations are working out. AE will be putting a lot of effort into publicizing these materials via trainings and webinars. Also, the local Drive Electric event has been booked at North Hills for September 16. Lastly, AE has an email list for EV updates. Contact Kristi Jacobsen Brodd at kbrodd@advancedenergy.org to be added to the list.

Piedmont Natural Gas: Business is challenging with the plummeting cost of gasoline fuels. Now, there is no natural gas price advantage over gas; however, there is still some over diesel. A client in Wilson will be adding 35 new natural gas refuse trucks. An 11th public station (with Sphinx, a petroleum vendor) will be announced soon in Anderson, SC.

NCPGA: Although prices are down, interest is still there. They just purchased a Ford Expedition that will be converted to an ICOM bi-fuel system. They will be adding a class for members on how it was converted that will be open to Triangle Clean Cities Coalition stakeholders. Also adding Stubby gas nozzle, which seals itself, reduces emissions another 80% over low-emissions nozzles, and requires no gloves, glasses, or special training (very safe because it will not release if not sealed). Also, Feb 4-6 is the Farm Show and the Ford engine will be showcased in additional applications. Lastly, through the end of March, National Propane Gas Association for mower conversions discounts (\$1,000 for conversions and \$2,000 for new mowers!). [Check out the program here.](#)

Research Triangle Foundation: RTF is revamping (updated mission and values) and seeking new ways to partner up its committees, including SmartCommute@rtp, its smart transportation for commuters program. The Workplace Charging Challenge looks like a great fit for RTP since they have some charging infrastructure already and lots of potential for more.

PSNC: GAIN Clean Fuel's new station in Sanford is exciting. They continue to grow their operations and fleet; there is a new North Durham station. The refuse industry is leveraging PSNC.

Dick Sloane: Bicycling infrastructure in Chapel Hill is improving, e.g., at intersections, driver signage. The bicycle lane from Barbee-Chapel Road to Stagecoach Road is now complete; one can ride from Chapel Hill to Scott King Road on bike lanes. Organic Transit is now selling two-seater ELFs (solar battery-assisted tricycle).

Capital Ford: This is a challenging year due to lower gas prices. Good news: Focus prices have been reduced an additional \$5,000, so now a fully loaded pure electric Focus is \$29,995. Also, the Capital Ford rental department will now have PEVs in their rental fleet. Timo will be teaching customers and fleet staff how to use them.

Wilson Community College: Rich said that within 3 years, we will have a lithium sulfur battery that will an extended range for electric vehicles. Rich is traveling to Bismarck, ND to speak at a ND state energy conference to defend ethanol. A new Ricardo flex-fuel (85% ethanol) engine is about to be released that will be able to replace the exhaust gas system since the ethanol provides the cooling effect. The fuel economy will change the whole ethanol business and it is good that the ag industry has a market for surplus corn. Rich announced personal circumstances that will not permit him to continue teaching; he will be taking on responsibility for training and oversight of Penske technicians in the Northeastern US and based in Princeton, NJ. Rich was chair of the Clean Cities Coalition for a number of years; the Coalition expressed gratitude for his dedicated service and great work in this field.

Blue Gas Marine: promotes alternative fuel systems for boats, which are similar to road vehicles in that the more fuel you use, the more it makes sense to use alternative fuels. Most CFOs that operate commercial fleets are looking at long-term fuel costs, they recognize that gas prices are highly variable. There is still a high price premium for ethanol-free gas (\$4/gal). Blue Gas Marine often partners with Intrepid boats. NC's marine industry is 6th largest in the country due to the Intracoastal Waterway and coastline. Fueling has a big environmental impact; filling routinely involves spills into the water. More and more boats are being built for natural gas, but the incentives from the public sector are still key to making the economics work.

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NCCETC: a major media campaign with television, radio, and internet components called Fuel What Matters will launch in a couple of months. NCSU Transportation is considering bikeshare options and working to expand EV charging infrastructure gap on Main Campus (Centennial Campus is well served).

Raleigh: a CAT route now has 15-min headways and TTA now has six express routes for commuters from southern Wake County and Johnston County to help relieve congestion due to the Fortify rebuild. Buses are generally underutilized, however, and may be at risk of reduced levels of service.

City of Sanford: They are excited about the new CNG station and have been contacted by Waste Management as well as another refuse company. The sewer plant's EV is working out well.

Kerr-Tar COG: The COG just held a clean fuels workshop in Louisburg that attracted a wide variety of attendees from both public and private sectors. They will begin promoting the ShareTheRideNC ridematching platform throughout the region soon.

Ferrelgas: has a specific team for propane autogas. They are excited that the mower tax incentive has been extended til March and hope folks continue to take advantage.

City of Durham: The City's water department is likely to get some hybrid vehicles, which makes sense since they stop and go to do meter checks all day. They hope to gradually get more and more pickups replaced. The City also recently received a 100 Best Fleets award.

Town of Morrisville: The Town is holding a retreat this week and encouraging folks to think about sustainability. They are hoping to do more implementation.

Town of Chapel Hill: The Town recently turned on 4 chargers in Chapel Hill at 140 West Rosemary, their first public chargers. The Town regular parking rates apply to the use of these parking spots.

Wake Tech: The College has 4 EV charging stations at 2 campuses (Main and North) that are heavily used; use has picked up greatly since they were first installed.

Town of Cary: The Town has done a 57-vehicle pilot with GPS and an anti-idling batteries, although the batteries have not been problem free. Currently, the program is not punitive, but managers do get email updates. One council member drives an ELF. They have preliminary results on their recent fleet rightsizing policy (some vehicles went bigger, and some went smaller), which produced \$50,000 in one-savings plus \$2,000 per year in fuel savings. Because it was a policy that had broad departmental buy-in, the process has been fairly smooth.

*Our next stakeholder meeting will be Thursday, March 26, 2015, from 9:30 to 11:30 at
4307 Emperor Boulevard, Suite 110, Durham 27703*

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