



# NORTH CAROLINA Solar Center

## Clean Transportation Program Newsletter

January 2012

N.C. State University | [www.cleantransportation.org](http://www.cleantransportation.org)

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### Upcoming Events

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#### February 1, 10 a.m.

Triad Mobile CARE  
Meeting  
Winston-Salem, NC

Learn about propane vehicles and collaborate on the new Clean Cities Coalition and regional PEV planning. [More info is available on our website.](#)

#### February 2, 7 p.m.

Evatran Open House

## Getting Amped Up for Electric Vehicles: Statewide Plug-In Electric Vehicle Task Force

*by Marcy Bauer*



Plug-in electric vehicles (PEVs) are on their way to the North Carolina marketplace, and public and private sector leaders have been working hard to be ready for them. The PEV Task Force is collaborating to ensure that North Carolina is a leader in PEV adoption and

industry development.

On the heels of a PEV Symposium in October 2011, the task force formed workgroups to develop components of a statewide PEV readiness plan addressing six key areas: Economic Development; Incentives; Vehicles; Infrastructure; Policy, Codes and Standards; and Education and Outreach. The North Carolina Solar Center is working with the N.C. Department of Commerce to lead the combined Incentives and Economic Development workgroups, whose members will work together to identify key incentives that will entice both consumers and companies to build the PEV industry in North Carolina.

If you're interested in contributing to the statewide PEV plan by joining a workgroup, you can do so regardless of whether you were able to attend the summit or initial workgroup meetings. You can

Morrisville, NC

Visit Evatran's headquarters and see their wireless EV charging technology, Plugless Power. [More info is available on our website.](#)

### Did you know?

The Carolina Blue Skies and Green Jobs Initiative maintains a regular blog with news about alternative fuel and advanced transportation in North and South Carolina. Read their latest post, on Asheville's CNG station upgrade, [here](#) and [follow the blog here](#).

An NCSU research team has been awarded a \$4 million grant to study how the biofuels industry could develop in North Carolina. [Read more at the News & Observer.](#)

GrassRoots Biotechnology, a research company in Durham, is studying genetic tools to improve switchgrass for biofuel production. [Read more at the News & Observer.](#)

The Buncombe County Sheriff's Department will convert ten of its patrol cars to run on propane. They expect all of the converted

also follow the project's progress on [the Clean Transportation Team's PEV planning project website](#).

PEV related activities in NC are currently being supported by the Centralina Council of Governments Mountains To Sea Initiative, a one year U.S. Department of Energy funded project to develop the PEV roadmap.

Contact Aranzazu Lascurain at [alascur@ncsu.edu](mailto:alascur@ncsu.edu) or 919-515-0352 for information on joining the PEV Task Force.

## North Carolina General Assembly Studies Alternative Fuels

*by Anne Tazewell*

The Clean Transportation Team's Marcy Bauer and Anne Tazewell recently presented on the State's Petroleum Displacement Plan and Electric Vehicles to the N.C. House's Select Committee on Energy Independence and Alternative Fuels. The nine member committee, co-chaired by [Representatives Mike Hager](#) and [Kelly Hastings](#), is charged with studying North Carolina's energy needs and developing an interim report by May 1, 2012. A final report is due by the beginning of the 2013 legislative session.

The committee will examine incentives for alternative fuel vehicles, study the feasibility of alternative fuels for the State Fleet, and evaluate how the state can become energy independent and avoid fuel supply disruptions from unrest in the Middle East.

Marcy Bauer, lead author on the [2010-2011 State Petroleum Displacement Plan report](#), provided an overview of annual progress in meeting the goal of reducing petroleum consumption 20 percent compared to a 2004 baseline by 2012. The state's 16% displacement in 2010-11 was accomplished through the following efforts:

- 4.85 percent displaced through E10 use
- 0.56 percent displaced through E85 use
- 4.75 percent displaced through biodiesel use
- 6.15 percent displaced through increased conservation and efficiency (estimated as 4.64 percent from conservation - including 0.74% from electric vehicle use - and 1.4% from efficiency improvements)

This year, 0.2 percent of previous displacement was lost as compressed natural gas and propane use decreased.

Compressed natural gas, liquid propane, and biofuels are the only specific fuels called out for the Committee to study. Nevertheless,

cars to hit the road by February.

[Read more at the Citizen-Times.](#)

In North Carolina, public charging stations for electric vehicles far outnumber E85 stations by a factor of better than 4-to-1, according to DOE data. Nationally, the figure is still almost 2-to-1, despite the fact that there is only one electric car for every 460 flex fuel vehicles on the road.

[Read more at Bloomberg.](#)

Believe it or not, you can now purchase Level 2 charging stations

[online at Amazon.](#)

You'll still have to order installation the old-fashioned way, though.

[Read more at Green Car Reports.](#)

In Consumer Reports' real-world testing, the Nissan LEAF and Chevy Volt electric vehicles came in as far cheaper to drive, per mile, than similar gas-only or hybrid vehicles. At 3.5 and 3.8 cents per mile on average, respectively, the LEAF and Volt are less than half as pricey to drive as the Toyota Prius, and less than a third the cost of a comparable gas-only vehicle.

[Read more at](#)

Committee members present on December 5 were also interested in learning about electric vehicles. Anne Tazewell gave a presentation on electric vehicles, and Ken Delaney from Advanced Energy educated members on electric vehicle recharging.

Learn more [at the Committee's website](#). In the Meetings folder, you will find all the presentations given to the Committee, [including the Dec 7 presentations](#). Under Supplemental Materials, the Low Carbon Transportation Committee report is posted as part of [the March 2011 Energy Policy Council report](#) submitted to the Legislature.

If you are involved in clean transportation, please contact the members of House Select Committee on Energy Independence and Alternative Fuels about your interests. They need to hear from the folks in the field!

## **Sunny Outlook for Charging Stations**

*by Helen Chappell*

North Carolina's first solar-powered charging stations were installed in December. In Asheville, Biowheels Responsible Transportation and their partners installed the first of four planned public solar charging installations. In Raleigh, Progress Energy and the City of Raleigh unveiled two solar stations to be used in a two-year research project.



The Asheville project was unveiled on December 11. Government officials and industry partners were in attendance to open a downtown solar installation that supports charging for three electric vehicles. When vehicles are not charging, electricity generated from the installation is fed into the grid. The stations are free to the public.

Local officials opened the Raleigh project on December 15. Two stations for the Progress Energy and City of Raleigh fleets are now connected to solar arrays; the stations will not be open for use by the public. When the charging station is not being used, the electricity generated by the solar arrays is fed into on-site batteries for later use. One of the project's partners, Advanced Energy, will collect charging and power information from the stations in a two-year project to evaluate the performance of the stations and how such stations might work with the electrical grid.

## Consumer Reports.

In December, the Navy made the U.S. government's largest-ever biofuel purchase, buying almost half a million gallons of fuel made from chicken fat, used cooking oil, and algae. The fuel will be used by an aircraft-carrier strike group in a demonstration this summer.

[Read more at Reuters](#) and [at Wired](#).

Congress allowed tax credits for ethanol and biodiesel to expire in the new year, which means biofuel prices could rise at the pump. Read more about the tax credit's likely impact on the biodiesel industry [at the Independent Mail](#), and about the ethanol industry [at MSNBC](#) and the [New York Times](#).

Read more in two articles [here](#) and [here](#) from the Asheville Citizen-Times and [from the City of Raleigh](#).

## **GREET a Great Tool for Fleets and Consumers**

*by Nupur Aggarwal*

Last month, Argonne National Lab hosted a free workshop for their GREET Model. "GREET" stands for Greenhouse gases, Regulated Emissions, and Energy use in Transportation, and it's a free tool fleets and consumers can use to better understand the emissions impacts of their vehicles. It's also a great way to evaluate the potential impact of switching to advanced technology and new fuels.

The GREET model, developed at Argonne by the U.S. Department of Energy, considers the entire life cycle of fuels and vehicles, from wells to wheels, and it even considers vehicle disposal and materials recovery. For a given vehicle and fuel system, GREET separately calculates the following:

- Total energy consumption from both renewable and nonrenewable sources, total consumption of fossil fuels (petroleum, natural gas, and coal together), and consumption of petroleum, coal and natural gas individually.
- Total greenhouse gas emissions as carbon dioxide equivalent (primarily carbon dioxide, methane, and nitrous oxide).
- Total emissions of six pollutants (volatile organic compounds, carbon monoxide, nitrogen oxides, particulate matter smaller than 10 microns and smaller than 2.5 microns, and sulfur oxides).

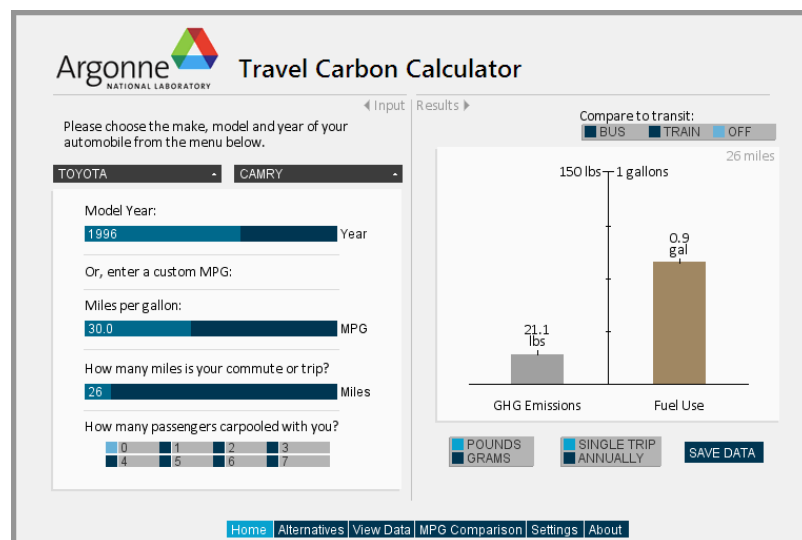
GREET is highly flexible, and it's capable of simulating emissions for more than 80 types of passenger cars and light-duty trucks, including:

- Conventional spark-ignition engine vehicles
- Spark-ignition, direct-injection engine vehicles
- Compression-ignition, direct-injection engine vehicles
- Hybrid electric vehicles
- Spark-ignition engines
- Compression-ignition engines
- Plug-in hybrid electric vehicles
- Battery-powered electric vehicles

- Fuel-cell vehicles

Best of all, GREET is completely free, and [you can download it from Argonne's website](#). The tool is fairly user-friendly, but the level of customization can sometimes make it a challenge to enter all of the potential inputs correctly.

For users who don't need much detail, there are two simpler web-based tools available that are built on the GREET model: the [Fleet Footprint Calculator](#) and the [Trip Calculator](#). Check them out and see the impact of your driving.



## Going Green? Do it For Free

*by Helen Chappell*

In November, Enova Systems and Freightliner Chassis Corporation unveiled their "Green for Free" program. The program aims to help businesses purchase new electric delivery vehicles without additional up-front cost. Instead, the additional cost of the electric vehicles is paid over time using the fuel and maintenance savings over comparable diesel vehicles.

The program can only be used for certain vehicles right now - small trucks ideal for set pickup and delivery routes. Enova and Freightliner describe electric vehicles as ideal for these applications, since the distances involved are typically short and the trucks can return for charging every night. Predictable use also allows the fuel and maintenance savings to be more accurately calculated.

For more information and who to contact, [visit the Enova Systems](#)

[website.](#)

[Forward this email](#)

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