

The Clean Fuel Advanced Technology (CFAT) Project Overview

In 2006 the **NC Solar Center at NC State University** was awarded \$1.6M in Congestion Mitigation Air Quality funding from the **NC Department of Transportation** to reduce transportation related emissions in NC counties that do not meet national air quality standards. The **NC Division of Air Quality and State Energy Office** also contributed \$200,000 each. The two million dollar project covers three broad areas: education and outreach, recognition of exemplary activities, and project funding.

According to the American Lung Association, poor air quality affects the health of over 70% of the state's population.

More than \$1.4M is being distributed for emission reduction projects. Funding recipients have contributed over \$1.2M in cost-share, rendering CFAT as a cost-effective way to reduce more transportation-related emissions¹.

Education and Outreach

- The NC Solar Center partnered with the **Triangle J Council of Governments and Centralina Council of Governments** for educational outreach in the Triangle and Charlotte regions.
- Outreach efforts have included annual conferences, technical workshops, presentations, regional meetings, and individual consultations.
- The 2007 *Mobilizing NC: Where Air Quality, Energy and Transportation Meet* attracted over 300 attendees and featured a ride n'drive, table-top displays and presentations about alternative fuels, advanced transportation technologies, fleet procurement policies, refueling options, incentives, and best practices examples. The 2008 symposium and awards took place at the Proximity Hotel in Greensboro with a capacity crowd of over 175 in attendance.
- A Spring 2009 event will feature a multiple location "Drive Clean and Green" across NC to raise awareness about transportation technology solutions.
- Over 15 technology specific factsheets, dispenser and vehicle decals, conference displays and web pages featured at www.cleantransportation.org have been developed.

Mobile CARE (Clean Air Renewable Energy)

- Initiative to acknowledge leadership in reducing transportation related emissions
- Exemplary fleets, technology providers, programs, policies, and individuals are nominated for annual awards presented by NC Dept of Transportation, State Energy Office and the Division of Air Quality
- Quarterly Mobile CARE stakeholder meetings in the Triad and Upper Coastal Plain counties bring together public and private partners to learn and share information about transportation technology solutions ranging from biofuels to diesel retrofits



¹ CFAT eligible counties include Cabarrus, Catawba, *Chatham, Davidson, Davie, Durham, Edgecombe, Forsyth, Franklin, Gaston, Granville, Guilford, *Haywood, *Iredell, Johnston, Lincoln, Mecklenburg, Nash, Orange, Person, Rowan, *Swain, Union, Wake. (*Represents partial counties).

Emission Reduction Projects

- Funds for transportation-related emission reduction projects in areas that do not meet national air quality standards
- Up to 80% of project costs for alternative fuel vehicles, refueling infrastructure, idle reduction technologies, heavy duty hybrid electric vehicles and diesel retrofits
- Thirty public and private entities including a national park, local governments, school systems, service station owners and a company providing electrified parking spaces to reduce idling in long haul trucks have been funded

CFAT Projects Yearly Emissions Reductions and Cost Effectiveness

	NOx	VOC	CO	PM	CO2
Kg/y reduced	3,737.96	990	59,873	1,069	2,721,345
g/\$	2.50	0.03	28.50	.30	733.68

Carbon dioxide emissions reduced by CFAT projects are equal to the amount reduced by **planting 15,000 trees annually**. NOx emissions reduced by these projects are equal to the amount reduced by **removing 541 cars** from the roads annually.

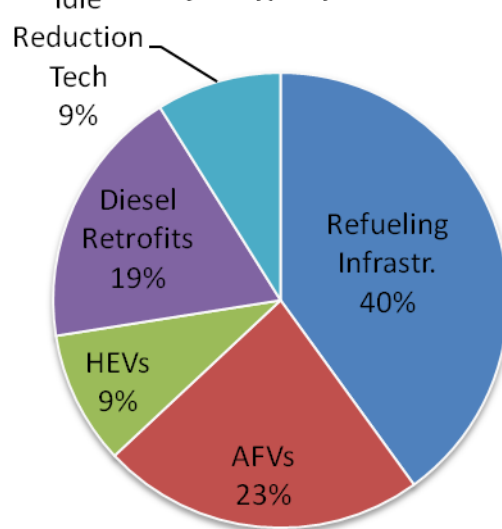
Emission Health Effects

- NOx : chest pain, coughing, throat irritation, congestions, irritation of lung disease, and permanent lung tissue scarring.
- VOCs: eye, nose, and throat irritation, headaches, loss of coordination, nausea, vomiting, damage to kidneys, liver, and nervous system, allergic skin reactions, shortness of breath, and nosebleeds.
- CO : headaches, dizziness, disorientation, nausea, fatigue, angina, impaired vision and coordination, reduced brain function, and death.
- PM: asthma, difficult or painful breathing, chronic bronchitis, and lung cancer.

Projects by County

County	#
Catawba	1
Chatham	1
Durham	2
Edgecombe	1
Forsyth	1
Gaston	2
Guilford	2
Haywood/Swain	2
Johnston	1
Mecklenburg	6
Orange	1
Rowan	1
Union	3
Wake	6
Total	30

Project Type by Amount Awarded



A total of 30 sub-awards were funded...

What was purchased?

- 11 refueling stations** (biodiesel (B99), ethanol (E85), natural gas)
- 5 (Heavy Duty) Hybrid Electric Vehicles**
- 28 Alternative Fuel Vehicles** (natural gas & neighborhood electric vehicles)
- 72 Diesel Retrofits** (oxidation catalysts, particulate filters, multi stage filters)
- 24 Electrified truck stop parking spaces**