

# Clean Fuel Advanced Technology Success Story: Piedmont Natural Gas

## Project

A total of \$2M in funding was provided to the NC Solar Center at NC State University by the NC Department of Transportation, State Energy Office and Division of Air Quality for the Clean Fuel Advanced Technology Project to reduce transportation related emissions in NC counties that do not meet national air quality standards. Piedmont Natural Gas received \$113,280 towards the purchase a dedicated natural gas (NG) powered dump truck, as well as a fast-fill compressor fueling station to refuel this type of vehicle. Natural gas must be compressed (CNG) or liquefied (LNG) to be used as a transportation fuel.

## CFAT Impact by the numbers

**90% reductions in Particulate Matter (PM)**

**50% reductions in Nitrogen Oxide**

## On the Road to Success:

- Natural gas has seen increasing use as an alternative fuel in the medium- and heavy-duty truck and bus markets over the last ten years. This is a result of lower prices relative to diesel and the ability of natural gas engine manufacturers to develop technologies that can meet increasingly stringent emissions standards. The ISL G natural gas engine in this truck already meets 2010 diesel emission standards of 2 gr/bhp-hr.
- The Cummins Westport ISL G NG engine is manufactured in NC at the Cummins Rocky Mount Engine Plant in Whitakers. Most of these engines have been shipped overseas to countries such as China and India. This is the first vehicle to utilize this clean burning NG engine in NC.
- The natural gas compressor configuration will serve as a prototype for Piedmont's combination of slow- and fast-fill refueling infrastructure for district locations where several of these types of vehicle are based. The CNG refueling is in Charlotte and the dump truck is used in regular service for utility distribution work within the Piedmont Natural Gas fleet. Its base of operation is Mecklenburg County.



## Additional Accomplishments

PNG has also purchased two natural gas forklift trucks that are used at Piedmont's Distribution Center, resulting in 20% to 25% emissions reductions in carbon monoxide and carbon dioxide

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