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Greening the Fleet: How Columbus, Ohio, Is Setting the Pace

The city is well along in an effort to leave gasoline and diesel fuel behind and power its vehicles with cheaper, cleaner natural gas. The payoffs go beyond cost savings.

BY BOB GRAVES | NOVEMBER 25, 2013

Given the speed of change today, there must be remarkable forces at work to maintain the primacy of petroleum as the chief fuel source for vehicles in America. Gasoline and diesel fuels have proven very difficult to displace in our transportation system despite a growing list of problems connected to their use.

One place that *has* made significant inroads into the primacy of petroleum is Columbus, Ohio, where Mayor Michael Coleman is five years into a project, called the Green Fleet Action Plan, to lower the fuel costs and reduce the emissions of the city's fleet by converting the vehicles to run on compressed natural gas (CNG).

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CNG is a far less expensive and much cleaner fuel than gasoline or diesel, but purchasing new vehicles and building CNG fueling infrastructure is costly. The city's fleet administrator, Kelly Reagan, knew that such a shift would need to pencil out financially. But the potential was clear. "Anytime we can reduce the spiking costs of fuel, we reduce our exposure to uncertainty," says Reagan. "The city of Columbus does not like uncertainty."

With a degree and background in finance and economics, Reagan went to work with spreadsheets. He concluded that the right approach was to target the highest consumers of diesel fuel and its biggest tailpipe emitters -- the city's 781 heavy-duty diesel vehicles, including combination dump trucks/snowplows, street sweepers and refuse loaders. It was a huge opportunity, but there were big hurdles.

For starters, the fueling infrastructure isn't cheap. The first station was built at a cost of \$3.6 million with partial U.S. Department of Energy stimulus funding, but that funding isn't available for the city's second site, which is currently under construction at a cost of \$5.4 million.

CNG-fueled heavy-duty vehicles aren't cheap either. They cost \$30,000 to \$50,000 more than conventional ones. The city is buying new CNG-fueled vehicles as older ones need to be replaced and expects to have switched out more than two-thirds of its 781 heavy-duty vehicles by 2020. And to work on the CNG-fueled vehicles safely, there was a \$676,000 conversion expense to establish a "compliant" garage.

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However, the cost savings from the switchover to CNG are proving more than adequate to support the shift. The city's cost of natural gas is about \$.65 per gasoline gallon equivalent (gge). After expenses related to compressing and storing the gas and operating the fueling station, the city's costs come to \$1.80 per gge. But because the city owns the fueling station, it receives a federal rebate of 50 cents per gge for the natural gas it pumps, bringing the cost down to \$1.30 per gge. By 2020, the city expects to be saving \$2 million per year in fuel costs.

And there are less-tangible benefits, ones that are rewarding in their own way. In 2011, for example, Columbus was recognized by the 100 Best Fleets organization as having the "Greenest Fleet" in the United States.

Based on its CNG fueling- infrastructure expertise, Columbus is assisting other cities in the region in their efforts to move their fleets to natural gas. And after considerable discussion, the city also made the decision to share its CNG fueling infrastructure with other private and public entities. This not only encourages additional use of natural gas but also supports the local economy since the savings are likely to be spent on products and services in the region.

So, ultimately, does it pencil out to green a municipal fleet? If Columbus' experience is a guide, it certainly looks like it does.



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