Problems Plague U.S. Flex-Fuel Fleet
Most Government-Bought Vehicles Still Use Standard Gas

By Kimberly Kindy and Dan Keating
Washington Post Staff Writers
Sunday, November 23, 2008; A01

The federal government has invested billions of dollars over the past 16 years, building a fleet of 112,000 alternative-fuel vehicles to serve as a model for a national movement away from fossil fuels.

But the costly effort to put more workers into vehicles powered by ethanol and other fuel alternatives has been fraught with problems, many of them caused by buying vehicles before fuel stations were in place to support them, a Washington Post analysis of federal records shows.

"I call it the 'Field of Dreams' plan. If you buy them, they will come," said Wayne Corey, vehicle operations manager with the U.S. Postal Service. "It hasn't happened."

Under a mandate from Congress, federal agencies have gradually increased their fleets of alternative-fuel vehicles, a majority of them "flex-fuel," capable of running on either gasoline or ethanol-based E85 fuel. But many of the vehicles were sent to locations hundreds of miles from any alternative fueling sites, the analysis shows.

As a result, more than 92 percent of the fuel used in the government's alternative-fuel fleet continues to be standard gasoline. A 2005 law -- meant to align the vehicles with alternative-fuel stations -- now requires agencies to seek waivers when a vehicle is more than five miles or 15 minutes from an ethanol pump.

The latest generations of alternative vehicles have compounded the problem. Often, the vehicles come only with larger engines than the ones they replaced in the fleet. Consequently, the federal program -- known as EPAct -- has sometimes increased gasoline consumption and emission rates, the opposite of what was intended.

The EPAct program offers a cautionary tale as President-elect Barack Obama promises to kill dependence on foreign oil and revive the economy by retooling for the green revolution, experts say.

"This is an example of a law that has had a perversely different effect than what was originally intended," said Jim Kliesch, a senior engineer with the Union of Concerned Scientists, an nonprofit environmental organization based in Washington.

The Postal Service illustrates the problem. It estimates that its 37,000 newer alternative-fuel delivery vans, which can run on high-grade ethanol, consumed 1.5 million additional gallons of gasoline last fiscal year because of the larger engines.

The vehicles that would allow the agency to meet federal mandates were available in six- and eight-cylinder models -- not the four-cylinder variety it traditionally purchased. Alternative fuel was used less than 1 percent of the time in 2007-2008.

The Department of Energy defended its efforts with the program in a written statement. "The U.S. Government
continues to promote diversification of alternative fuels and vehicles in order to reduce our dependence on oil and cut greenhouse gas emissions," spokeswoman Jennifer Scoggins wrote. "We work with private industry partners to develop and grow infrastructure of alternative fuels."

Scoggins pointed to a two-year growth spurt of E85 stations, which dispense fuel that is 85 percent ethanol and 15 percent gasoline. Since 2006, ethanol stations have increased from 481 to 1,689 nationally, but most are in the Midwest. Station owners face a vexing challenge: how to compete with more than 160,000 gasoline stations located on nearly every street corner, especially as gas prices drop.

A New Challenge

In 1992, just after the Persian Gulf War, Congress passed the Energy Policy Act, hoping to harness the government's buying power to spark a green vehicle revolution. Agencies were required to buy alternative-fuel vehicles for 75 percent of their light-duty fleet: cars, trucks and vans that weigh less than 8,500 pounds. The ultimate goal was to give automakers incentives to produce more fuel-efficient cars.

But EPAct had a huge loophole: Agencies were required to buy alternative-fuel vehicles but did not have to run them on alternative fuel.

"We started out with a plan to mandate use, but then we pulled back. There wasn't the political support or will to do it," said former representative Philip P. Sharp (D-Ind.), who sponsored EPAct and authored a separate bill that contributed to the expansion of flex-fuel fleets.

Because alternative-fuel use was not mandated, large numbers of vehicles that could run on various fuels -- propane, compressed natural gas and E85 -- have popped up in places where none of those fuels is available.

The Post analysis shows that at least 2,341 flex-fuel vehicles were placed in seven states with no E85 stations, and in Puerto Rico, where the situation is the same.

Hawaii has the greatest share, with more than 1,000 flex-fuel vehicles purchased or leased by various agencies, mostly military. The U.S. Navy tops the list.

The Navy has more than 670 flex-fuel vehicles on three islands. Not one of the sedans, sport-utility vehicles or trucks has ever operated on E85.

"If an alternative-fuel vehicle is available, we are mandated to buy it. We have no choice," said Steve Mortimer, a manager in Hawaii who helps set Navy policy on vehicles and equipment. "The [auto] manufacturers don't have to supply the fuel. In Hawaii, we just have unleaded and diesel and a little bit of propane."

Mortimer and other Navy officials have invited potential fueling suppliers for site visits to encourage interest in building E85 stations. But there are many obstacles.

No ethanol-production facility exists in Hawaii, so the fuel would have to be shipped by tanker, increasing the carbon footprint of E85, a fuel that is already being criticized by some environmentalists because of pollution caused by many ethanol-production plants.

Big Cars

For years, federal agencies ignored EPAct. They fulfilled the 75 percent purchasing requirement only after 1999, when several environmental groups filed a lawsuit to force the buys.

When fleet managers searched for vehicles that would meet EPAct requirements, they found that the most affordable models were big flex-fuel sedans and SUVs. Automakers had bucked efforts to mass-produce alternative-fuel vehicles, believing that the fueling stations, including E85, should be in place before they made assembly-line changes.

To persuade automakers to ramp up production, Congress in 1988 struck a deal. For each flex-fuel vehicle produced,
automakers would win lucrative credits to help them achieve fuel-efficiency mandates.

Under the system, a flex-fuel vehicle might achieve 16 miles per gallon, for example, but with the credits an average of 24 mpg could be claimed. The formula assumed the vehicles would run on alternative fuel half the time.

Manufacturers liked flex-fuel models, because they cost only about $50 more per vehicle to produce. To prevent corrosion from the alcohol-based fuel, they used a specially lined tank and stainless-steel fuel lines instead of aluminum.

Manufacturers started producing them in their best-selling models: large sedans and SUVs. For agencies, purchasing the large fuel-guzzling vehicles proved problematic.

"They were bigger, they ran on gas, and they weren't fuel-efficient," said Mark Gaffigan, director of natural resources and environment with the Government Accountability Office, which completed a program audit last month. "If they had just bought regular vehicles that were more fuel-efficient, they would be better off."

(Last year, Congress moved to phase out the flex-fuel credits by 2020, because several studies verified that the larger vehicles had led to increased gasoline consumption and greenhouse gas emissions.)

Four years after granting the flex-fuel credits, Congress passed EPAct, giving automakers a guaranteed market. In 1992, Sen. J. Bennett Johnston (D-La.) said EPAct would "solve the chicken-and-the-egg proposition with respect to alternative fuels," and President George H.W. Bush said it would "steadily increase U.S. energy security."

Seven years later, a lawsuit filed by the Center for Biological Diversity, the Bluewater Network and the Sierra Club tried to force more progress by making agencies comply with the law.

"We did not know there was no intent to run them on the alternative fuels or that the vehicles sometimes got lower gas mileage," said Jay Tutchton, a lawyer who worked for Earthjustice, a law firm that represented the groups. "They could have done better, in many cases, if they'd stuck with smaller vehicles that ran on regular gasoline."

Waivers Abound

Another shortcoming of EPAct was that it did not require fleet managers to track vehicle locations. The fleet grew, but no one knew how it was taking shape.

This discouraged private investment in fueling stations because industry needed better data.

"I have to be able to justify it economically. I need a business plan that shows it's worth the investment for my costs of getting the fuel there and putting in a station. The best data every time is where the federal fleet is located," said Curtis Donaldson, president of Texas-based CleanFuel USA, which builds propane and E85 stations.

To remedy this, legislation passed in 2005 requires agencies to seek an exemption or waiver from the Energy Department for each flex-fuel vehicle it owns or leases that is more than five miles or 15 minutes from the closest ethanol station. (Agencies also can seek exemptions if E85 costs at least 15 percent more than standard gasoline. No such waivers have been requested this fiscal year.)

Sixty-one percent of the fleet -- more than 67,000 vehicles -- received waivers for 2008-2009, the second year data were reported.

Five percent of the exemptions are in the Washington region. In Maryland and Virginia, nearly 1,000 exemptions were granted, with vehicles from the Postal Service, Army, Navy and Department of Agriculture leading the way. As in many other East Coast areas where E85 stations are rare, most vehicles qualified on the basis of being too far from a pump.

The waivers did offer a valuable tool: Zip code locations for each exempted vehicle that could be fed into an Energy Department database and shared with companies that build fuel stations.
The data, however, do not identify the location of the other 39 percent of the flex-fuel fleet for which it is a struggle to find E85, an important problem to solve because these vehicles use the fuel 8 percent of the time.

It is also unclear whether vehicles granted waivers are truly too far from the E85 stations to use them. The Post analysis, comparing locations of exempted vehicles with E85 fuelling stations, shows that 13 percent of the vehicles are within five miles of publicly available ethanol pumps.

In the District, 50 of the 54 exemptions are for vehicles that are less than five miles from an E85 supplier, The Post found.

Some exempted vehicles are in the Midwest, where E85 stations are abundant, ethanol prices are lower than national averages for ethanol, and traffic is comparatively light.

In Omaha, 43 exempted vehicles owned by the Army, Postal Service and Department of Veterans Affairs are within five miles of a Cubby's food store, Fantasy's Food-N-Fuel or Bucky's Express -- all with E85 pumps.

In Cedar Rapids, Iowa, 20 flex-fuel vehicles owned by the Postal Service, the General Services Administration and the Department of Homeland Security won exemptions, although they are within five miles of an ethanol pump.

And in Manhattan, Kan., the Army and the Departments of Agriculture and the Interior have 18 vehicles within five miles of one E85 station at the Farmers Cooperative Association.

"We put the station in thinking that if government employees had the vehicles, they were supposed to use ethanol," said Darin Marti, general manager of the Farmers Cooperative. "It's not hard to find us. You can use a GPS unit, and it will take you right to us. And we have big signs along the highway."

Energy Department officials said some agencies may have secured waivers because of other factors, including stations that do not accept a government credit card or that have unreliable E85 supplies. In urban areas such as Washington, exemptions were typically granted because traffic congestion made even a two- or three-mile drive costly and time-consuming.

The GAO said its analysis showed that future improvements will rely on better data. And it is time for government to reassess the original vision for the fleet, the agency said.

"It can be a role model, a leader," said Gaffigan, of the GAO. "And it should."

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