



EPAct Programs Celebrate Regulated Fleet Successes

The Energy Policy Act of 1992 (EPAct) was passed by Congress to reduce our nation's dependence on imported petroleum by requiring certain fleets to acquire vehicles that are capable of operating on alternative fuels. The U.S. Department of Energy (DOE) administers the regulations through the State & Alternative Fuel Provider (S&AFP) Program and the Federal Fleet (FF) Program.

In addition to purchasing alternative fuel vehicles (AFVs), qualifying Federal agencies also have to comply with Executive Order (E.O.) 13149, which requires agencies to reduce petroleum fuel use by 20% compared to their 1999 consumption. Alternative fuel provider fleets must also use alternative fuels in their AFVs.

Since the inception of EPAct and E.O. 13149, the S&AFP and FF Programs have collectively put roughly 137,000 AFVs on U.S. highways. Thanks to E.O. 13149, Federal fleets have displaced more than 16 million gallons of petroleum by switching to alternative fuels.

Complying with the requirements of EPAct and E.O. 13149 is challenging. But with some innovative thinking, the requirements can be met and exceeded. The fleets featured in this fact sheet exemplify those that used inventive strategies to go beyond their regulatory requirements.

State & Alternative Fuel Provider Program

Pennsylvania Turnpike Commission

For the past five years, the Pennsylvania Turnpike Commission (PTC) has exceeded its annual AFV requirements. Its score sheet includes 147 AFVs (20 of which are heavy-duty), several fueling stations, and 89 banked credits. PTC has also helped six fleets maintain EPAct compliance by selling them credits.

PTC's fuel of choice is propane. Choosing propane as its main alternative fuel boiled down to economics and practicality, says equipment analyst John Haines.

PTC also has approximately 86 flexible fuel vehicles (FFVs) that could run on E85 but presently don't.

However, Haines says PTC is currently pushing to construct an E85 fueling station, which he hopes to have completed in 2004.

PTC went with propane because it had lower infrastructure costs than other alternative fuels. Considering the commission has 14 propane fueling sites in its system, any money saved on infrastructure costs is welcomed.

PTC encountered many obstacles in building its successful AFV program. The two biggest: infrastructure costs and fuel system reliability. The key to overcoming these types of barriers, Haines says, is learning everything you can about each fuel type. "Commitment to the program is also essential," he adds. "Be patient. Perseverance is critical to achieving the goal."

Biodiesel also plays a big role in PTC's compliance strategy. During model years 2001 and 2002, it satisfied half of its AFV requirements through the purchase of biodiesel. Most of these credits were a result of the commission's using biodiesel to fuel the more than 200 heavy-duty trucks it has at six of its maintenance facilities.

Again, finances and practicality were important factors in choosing biodiesel. According to Haines, PTC uses biodiesel because there are no infrastructure costs, it's American-made, and it offers high lubricity, which helps prolong engine life.

PTC's commitment to alternative fuels was originally motivated by its EPAct requirements. However, Haines says that today it's more than that. "We are concerned about and conscious of air quality, and we want to exercise good stewardship of our environment and that of our neighbors and customers."

Pacific Gas and Electric Company

Since 1997, Pacific Gas and Electric (PG&E) Company has also exceeded its EPAct AFV requirements. It has 681 AFVs and 38 CNG fueling stations in north central California—23 of which are open to the public.

Based in San Francisco, California, PG&E began experimenting with AFVs in the early 1970s. In 1988, the company formally started its Clean Air Transportation Program. Over the past 25 years, PG&E's Clean Air Transportation and energy efficiency programs have kept about 53 million tons of carbon monoxide, a greenhouse gas, out of the atmosphere.

PG&E favors compressed natural gas (CNG). Except for a few electric vehicles (EVs), CNG is used in all its AFVs, including 29 heavy-duty crew trucks.

In 1999, the company developed a crew truck using a natural gas engine with a heavy-duty chassis—a combination that had never been used in utility applications. Developers removed the diesel engine and the diesel-powered air compressor from a Freightliner FL-70 chassis cab and refitted it with a John Deere 8.1-liter natural gas engine.

After 10 months of engineering and development, the company placed the first CNG crew truck into service in 2000. Since then the company has added 28 more of the vehicles to its fleet. Compared to their diesel equivalents, the CNG trucks emit roughly 50% less oxides of nitrogen, 80% less particulates, and nearly 90% less carbon monoxide. The trucks are certified as ultra-low-emission vehicles by the Environmental Protection Agency.



PG&E was the first company to combine a CNG engine with a heavy-duty chassis in a utility vehicle application.

According to PG&E senior program manager Brian Pepper, the performance difference between the CNG and diesel trucks is negligible. "Our crew trucks deliver 250 horsepower with 800 foot-pounds of torque, which is comparable to a conventional truck."

Pepper says it took a lot of work to develop the CNG crew trucks. "They wouldn't exist if PG&E had not spent the time and money to work through all the issues and to get all the parties to work together," he says. "Our customers and other utilities can now benefit from our groundbreaking experience."

The hard work and cooperative effort paid off. In 2001, PG&E received a Clean Air ENVY award from the Bay Area Chapter of the American Lung Association for the design of the CNG crew trucks. In August 2002, *Automotive Fleet* magazine ranked PG&E number four among utilities and energy companies maintaining alternative fuel fleets in America.

PG&E is also committed to reducing diesel use in its fleet. The CNG crew truck is the first of many medium- and heavy-duty platforms that could ultimately operate on compressed or liquefied natural gas.

"We're very proud of these new environmentally superior vehicles, which serve as prime examples of how natural gas is a viable alternative to conventional fuels," Pepper concludes.

Federal Fleet Program

Lawrence Berkeley National Laboratory

Lawrence Berkeley National Laboratory (LBNL) is looking forward to the opening of its new onsite E85 fueling station this summer. The station is one of the first of its kind in California.

A common alternative fuel in the Midwest, E85 has historically been rare on the West Coast. Because of an upcoming ban on MTBE, an oxygen-boosting gasoline additive, interest in E85 is increasing in California. "It's just a matter of time before it becomes commonplace here," says LBNL site services manager Bill Llewellyn.

But ethanol wasn't San Francisco-based LBNL's first choice. Back in the mid-1990s, the lab was a big supporter of EVs. It leased 20 electric light-duty pickups and minivans from the U.S. General Services Administration (GSA). But when the leases expired, GSA was unable to continue this arrangement and the vehicles were called back.

The lab then considered CNG and propane, but ruled them out because of financial constraints and other incompatibilities. "E85 made the most sense, but we didn't know where we'd get it," Llewellyn says.

LBNL was at a geographic disadvantage when it came to locating an ethanol supplier. Luckily, an Internet search turned up a cheese factory in southern California that could produce ethanol as a by-product of whey.

The new station—which will be accessible 24 hours a day, seven days a week and feature one fuel dispenser and a 4,000-gallon, above ground storage tank—will fuel the lab's 35 FFVs, as well as the 35 additional FFVs it plans to purchase between 2003 and 2005. LBNL's goal: "to go almost completely to E85," Llewellyn says.

Much of the funding for the new station will come from DOE in the form of an Alternative Fuel Refueling Infrastructure grant for more than \$81,000. The lab will contribute approximately \$40,000 to the construction of the site. The station will be open to vehicles operated by the DOE office in Oakland, the University of California-Berkeley, and LBNL. It will accept payment only from GSA-issued fleet credit cards.

Although the requirements of EPAct and E.O. 13149 were the motivating factors behind installing an onsite station, Llewellyn and his coworkers see firsthand the need for AFVs. "We are located up on a hill, and some days we can't see the city because of the smog," Llewellyn says. "When



LBNL's new onsite E85 station will feature fuel pumps that look like this one at Oak Ridge National Laboratory.

we can use alternatives like E85, which are natural, replaceable American-made commodities, I guess I don't understand why we didn't do this sooner."

U.S. Marine Corps

The U.S. Marine Corps is committed to AFVs and the fuels that power them—so much so that it exceeded its EPAct requirements by more than 100% in FY 2002, and has already met the goals of E.O. 13149.

The Marine Corps acquired 1,897 light-duty vehicles (LDVs) in 2002. Many exemptions apply, however, and only 355 vehicles were required to be AFVs. The Marines purchased a total of 512 AFVs during the year and earned an additional 221 credits for acquiring dedicated light-, medium-, and heavy-duty AFVs, and 129 credits for its use of biodiesel. This left the Marine Corps with a total of 862 AFV credits—exceeding its EPAct requirement by more than 100%.



The Marine Corps' extensive fleet of light-duty AFVs includes this Honda Civic that runs on natural gas.

The Marine Corps also exceeded the requirements of E.O. 13149 three years ahead of schedule. As of FY 2002, the Marines tallied a total petroleum (gasoline and diesel) reduction of more than 2.58 million gasoline gallon equivalents (gge), or 24.5% of its FY 1999 fuel consumption of approximately 10.53 million gge.

"Our leadership really bought into this program. I think that's the real key to our success," says Tim Campbell, head of the Garrison Mobile Equipment Section. "If you don't have buy-in from your leadership, you won't have a successful program," Tom Smallwood, senior contract advisor at Marine Corps headquarters, agrees.



U.S. Marine Corps

In 2002 the Marine Corps earned 129 credits for running heavy-duty vehicles, such as this bus, on biodiesel.

Smallwood's job is to make sure the Marine Corps meets its annual EPart and E.O. 13149 requirements. He keeps track of approximately 8,000 vehicles by staying in close contact with fleet administrators and validating their report data.

Eight thousand vehicles may sound like a lot, Smallwood says, but it's about a quarter of the size of the U.S. Army's vehicle fleet. "To some degree, because the Marine Corps is smaller, we have direct access to our fleet managers and can provide guidance on a personal basis, tailored to their needs."

According to Smallwood, fleet managers at Marine Corps bases and stations are genuinely concerned about the environment and energy security and are therefore willing to try new things, including alternative fuels and vehicles. For example, the Marines have been successfully using neighborhood electric vehicles (NEVs) for light hauling and administrative purposes.



U.S. Marine Corps

The Marine Corps' AFV fleet also features light-duty minivans and pickup trucks.

In 2002, five California installations received 115 various NEV models and the Marines continue to add CNG vehicles in areas with established natural gas infrastructure. NEVs are not considered AFVs under EPart and therefore are not eligible for credit under the program. However, NEVs do displace petroleum, so they count toward the Marine Corps' E.O. 13149 requirements.

Plans include acquiring medium- and heavy-duty nontactical vehicles that run on alternative fuels. The Marines also plan to expand the infrastructure for E85 and increase the types of alternative fuels that use it. For example, at the base in Camp Lejeune, North Carolina, the Marine Corps is building an E85 site using a \$25,000 Department of Defense grant.

For FY 2003, the Marine Corps plans to acquire approximately 411 light-duty AFVs—16% more than the 355 vehicles needed to satisfy Federal fleet mandates.

"Making the numbers, or compliance with the mandate, is only half of it," says Smallwood. "It's just the right thing to do."

What is EPart?

The Energy Policy Act of 1992, or EPart, was passed by Congress to reduce the nation's dependence on imported petroleum. Provisions of EPart require certain fleets to purchase alternative fuel vehicles. DOE administers the regulations through its State & Fuel Provider Program, Federal Fleet Program, Private & Local Government Program, and Fuel Petition Program. EPart also includes voluntary programs, such as Clean Cities, which help accelerate the use of alternative fuels in transportation.

For more information, visit www.ott.doe.gov/epact, or call the Regulatory Information Line at (202) 586-9171.

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