U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF MOBILE SOURCES

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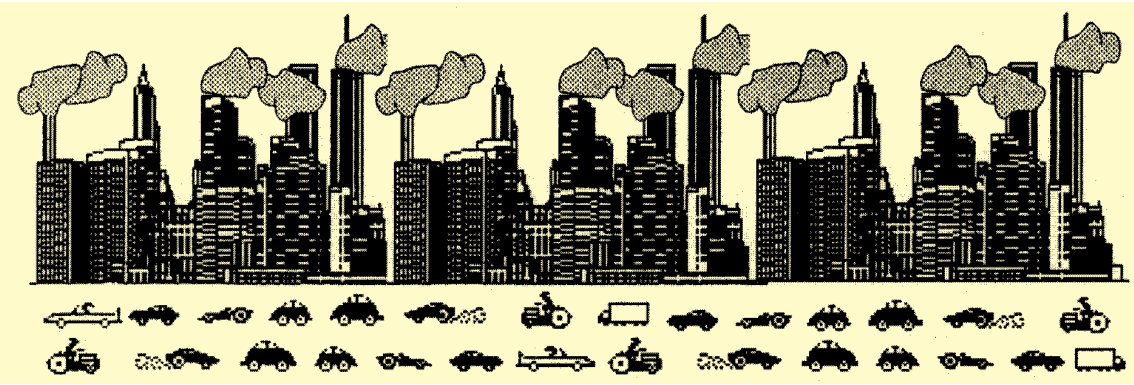
Alternative Fuel Demonstrations

Demonstration Programs Introduce New Fuels

Gasoline and diesel fuel have long been the primary transportation fuels in the United States. However, fleet owners across the country are beginning to experiment with other fuels to solve problems ranging from air pollution to tight budgets. As a result of these pilot demonstrations, many vehicles on the road today are powered by nonpetroleum fuel alternatives.

A small portion of the 190 million cars, trucks, and buses in the United States run on alternative fuels all or most of the time. This includes about 300,000 vehicles equipped to run on propane (LPG); 30,000 on compressed natural gas (CNG); about 1,000 on methanol; a few hundred each on ethanol, electricity, and liquefied natural gas (LNG); and a handful on hydrogen. These vehicles are operated by fleet owners, private industry, federal, state, and local governments, transit agencies, and private citizens.



Why Are Alternative Fuel Demonstrations Needed?

Well-designed demonstrations open the door to domestically-produced fuels and to cleaner, healthier air. While today's gasoline cars are much cleaner than cars were years ago, the doubling of vehicle travel since 1970 has offset enough of the progress to result in continued high pollution levels in most U.S. cities. Alternative fuel vehicles have the potential to produce less air pollution and greenhouse gases than gasoline and diesel vehicles. Demonstration fleets are a good way to

introduce these vehicles. Demonstrations also encourage research on alternative energy made from renewable resources like corn, wood, biomass, and garbage.

Finally, these projects can help reduce our heavy dependence on imported oil by promoting alternative fuels that diversify the fuel market and are produced domestically.

Can Demonstrations Lead to Better Alternative Fuel Vehicles?

Yes. Demonstration projects play an integral role in improving vehicle technology by setting up small-scale tests of newly designed vehicles and alternative fuels. This is an essential step in evaluating new technology prior to widespread commercialization.

Most alternative fuel vehicles on the road today were designed for gasoline and were later converted to run on alternative fuels as well. The conversions are typically performed for economic rather than environmental benefits — CNG and LPG in particular are often cheaper than gasoline. While these demonstrations help lessen the demand for imported petroleum, converted vehicles rarely demonstrate the cutting-edge technology necessary to reduce air pollution.

From an air quality perspective, the most important demonstrations today (see table on page 3) use cars, trucks, and buses designed specifically for alternative fuels. This allows vehicles to exploit the chemical and physical characteristics of the fuel they are designed for, achieving maximum performance and efficiency and minimum emissions. Demonstrations advance cutting-edge vehicle technology by providing on-the-road data from experimental vehicles.

For More Information:

The Office of Mobile Sources is the national center for research and policy on air pollution from highway and off-highway motor vehicles and equipment. You can write to us at the EPA National Vehicle and Fuel Emissions Laboratory, 2565 Plymouth Road, Ann Arbor, MI 48105. Our phone number is (313) 668-4333.

Alternative Fuel Vehicle Demonstrations in the U.S.

LOCATION	SPONSORS	FUELS	VEHICLES	
			In Operation	Planned
California	California Energy Commission	M85	500 sedans 400 sedans (FFV)	200 vans (FFV) 5000 sedans (FFV)
California	Utility Companies	Electricity	90 (mostly vans)	
California	CALTRANS	Hydrogen	1	
California, Texas	Utility Companies	CNG		1000 light trucks
Los Angeles	Southern California Rapid Transit District	Methanol CNG	40 buses 11 buses	200 buses
Los Angeles	L.A. Times	LPG	300 delivery trucks (retrofits)	
Los Angeles	Federal Express; South Coast Air Quality Management District; DOE; EPA; Others	CNG; Methanol; Electricity; LPG; Reformulated Gasoline		~100 delivery vans (some FFV)
Los Angeles	Southern California Gas Co.; United Parcel Service	CNG	20 package cars (retrofits)	up to 2700 package cars (retrofits)
New York City	Triboro Coach Ass'n; Command Bus Company; EPA; DOT/Federal Transit Administration	Methanol CNG	6 buses 2 buses	12 buses 12 buses
New York City	Brooklyn Union Gas; NYC; Consolidated Edison Co.	CNG		350 cars, trucks, vans (retrofits)
Houston	Houston Metro	LNG/Diesel		300 buses
Various	DOE; General Services Administration (GSA)	M85 CNG	65 sedans (FFV)	~700 sedans (FFV) ~800 light trucks
Various	American Gas Association; Gas Research Institute; Utility Companies	CNG		100-200 trucks
Wisconsin, Illinois	State of Illinois; State of Wisconsin; DOE	E85		50 sedans (FFV)
Minnesota	City of Duluth	LPG	300 snowplows, trucks (retrofits)	

There are several hundred thousand alternative fuel vehicles operating in the U S. This chart focuses on the most significant demonstrations, particularly those that introduce new technology, emphasize clean air, or include an especially large number of vehicles. All vehicles are "dedicated" to run exclusively on a specific alternate fuel, unless otherwise indicated. Retrofits are vehicles built to run on gasoline which are later converted to use a gaseous fuel (CNG or LPG). Flexible-fuel vehicles (FFVs) can operate on either gasoline or alcohol (ethanol, methanol) or any combination of the two. M85 and E85 are blends of 85% alcohol and 15 gasoline.