

U.S. Department of Army Fleet AFV Program Report for Fiscal Year 2006

This U.S. Department of the Army AFV Program Report for Fiscal Year 2006 presents the Department's data on the number of alternative fuel vehicles (AFVs) acquired in fiscal year (FY) 2006 and its planned acquisitions and projections for FY 2007 and FY 2008. The report was developed in accordance with the Energy Policy Act of 1992 (EPAAct) (42 U.S.C. 13211-13219) as amended by the Energy Conservation Reauthorization Act of 1998 (Public Law 105-388) (ECRA), and Executive Order 13149 (signed by the President in April 2000). Figure 1 indicates the Army acquired sufficient vehicles to exceed the 75 percent goal established by EPAAct. In FY06 the Army acquired 5,829 vehicles through leasing, and earned an additional 77 credits for a total of 5,906 AFV credits. The total number of EPAAct covered acquisitions was 5,259. The ratio of Army AFV acquisitions to EPAAct covered acquisitions was 112 percent.

The Army average fuel economy for non AFV light duty vehicles was 23.6 miles per gallon in FY 06. This success was achieved by pursuing more fuel efficient vehicles. Due to the lack of commercial alternative fuel refueling infrastructure, the Army could not find adequate alternative fuel for use in its fleet of 23,315 AFV. Therefore the Army did not meet the requirement that alternative fuels must be used in dual and flexible fuel vehicles more than 50 percent of the time, by 2005.

Legislative Requirements

The **Energy Policy Act of 1992 (EPAAct)** requires that 75 percent of all covered light-duty vehicles acquired for Federal fleets in FY 1999 and beyond must be AFVs. This applies to fleets that have 20 or more vehicles, are capable of being centrally fueled, and are operated in a metropolitan statistical area (MSA) with a population of more than 250,000 based on the 1980 census. Certain emergency, law enforcement, and national defense vehicles are exempt from these requirements. EPAAct also sets a goal of using replacement fuels to displace at least 30 percent of the projected consumption of motor fuel in the United States annually by the year 2010. The **Energy Conservation and Reauthorization Act of 1998** amended EPAAct to allow one alternative fuel vehicle acquisition credit for every 450 gallons of pure biodiesel fuel consumed in vehicles over 8,500 pounds gross vehicle weight rating. "Biodiesel credits" may fulfill up to 50 percent of an agency's EPAAct requirements.

Executive Order 13149 directs Federal agencies operating a fleet of 20 or more vehicles within the United States to reduce their annual petroleum consumption by at least 20 percent by the end of FY 2005 (compared to FY 1999 levels) by using alternative fuels in AFVs more than 50 percent of the time, improving the average fuel economy of new light-duty petroleum-fueled vehicle acquisitions by 1 mpg by FY 2002 and 3 mpg by FY 2005, and using other fleet efficiency measures.

Department of the Army Approach to Compliance with EPAAct and E.O. 13149

To achieve compliance with the legislative mandates of EPAAct and E.O. 13149, the Army will continue to lease from the General Services Administration (GSA) as many AFVs as possible, consistent with model availability from vehicle manufacturers and the Army will place its growing fleet of AFV in locations and installations that currently have or plan to have appropriate refueling infrastructure. The Army will continue to work with GSA to

acquire light duty vehicles with a higher fuel economy ratings in FY 2007, and further reduce petroleum consumption by using biodiesel fuel in as many of its diesel, non-tactical vehicles as possible consistent with mission requirements. The Army is continuing to look for opportunities to develop alternative fuel refueling infrastructure on installations.

Department of the Army Fleet Compliance for FY 2006

Figure 1 depicts Army AFV acquisitions both current and proposed. The AFV Requirement illustrates the EPA Act goal for the Fiscal Year. The AFV Acquisitions illustrate the Army effort to meet the EPA Act goal. In FY 2006 the Army acquired 5,906 AFV. The Army's 23,315 AFV make up 52 percent of its light duty vehicle fleet. In FY 06 the Army acquired 137 hybrid electric vehicles.

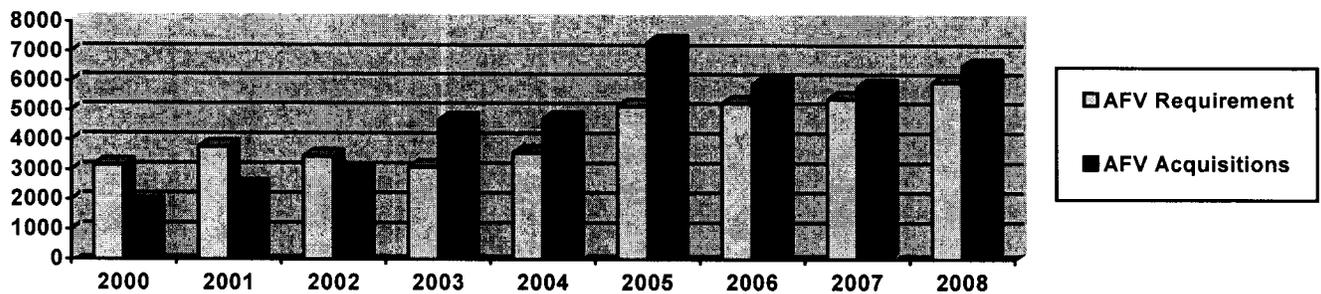


Figure 1. Summary of Army's FY 2000-2006 AFV Acquisitions

Improved Fuel Economy

Executive Order 13149 required that Agencies shall increase the average EPA fuel economy rating of passenger cars and light trucks acquired by at least 1 mile per gallon (mpg) by the end of FY 2002 and at least 3 mpg by the end of FY 2005 compared to FY 1999 acquisitions. Army fuel economy for FY 2006 improved to 23.6 miles per gallon (mpg) from the Baseline of 20.0. This goal was achieved through greater emphasis on acquiring more fuel efficient vehicles in conjunction with the GSA.

Army AFV Acquisitions for FY 2007 and FY 2008

The Army projects to lease from GSA 5,805 AFV in FY 2007 and 6,540 AFV in FY 2008. Because of the lack of available AFV fueling infrastructure, the Army is relying primarily on bi-fuel and flex-fuel vehicles in order to be able to operate these vehicles on petroleum fuel until the alternative fuel becomes available. The Army plans to lease approximately 140 hybrid electric vehicles from GSA in FY 2007.

Army Special Projects Related to AFV and Infrastructure Acquisitions

The Army is continuing to identify installations to support AFV refueling infrastructure. In FY 2006, Fort Campbell, Kentucky opened an E85 refueling site; Fort Jackson, South Carolina opened an E-85 refueling site, the Army, Air Force Exchange Services (AAFES) provided E85 at Fort Benning, GA, and commercial facilities providing E85 opened near Fort Sam Houston, Texas and Fort Hood, Texas. AFV refueling sites in the planning stages include: Aberdeen Proving Ground, Maryland (B20 biodiesel and E85); Fort Belvoir, Virginia (E85); Fort Bragg, North Carolina (E85); Fort Knox, Kentucky (E85); Redstone Arsenal, Alabama (E85); Fort Riley, Kansas (E-85); and Fort Hood, Texas (B20 biodiesel).

Petroleum Savings

Table 1 displays the Army petroleum baseline fuel consumption data for FY 1999 and fuel usage for FY 2000 through 2006. The continuing increase in fuel use is attributed to the ongoing global war on terrorism and the subsequent overall growth of the Army. The Army fuel baseline was difficult to reconstruct and may be unrealistically low. Currently, there is no NTV fuel saving against the FY 1999 baseline. However, as the Army brings additional alternative fuel refueling infrastructure and Hybrid-electric vehicles on line, petroleum use, as a motor transport fuel, should decline.

Table 1. Covered Petroleum Consumption in GGE

EO 13149 Covered Petroleum Consumption in GGE								
	FY 1999 Baseline	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006
Gasoline	26,035,517	29,441,419	30,331,621	33,955,055	30,354,458	30,467,211	36,429,623	33,542,638
Diesel	5,693,149	4,087,066	6,554,579	5,667,358	5,597,381	6,467,477	7,188,388	6,443,982
Diesel component from biodiesel		0	0	0	0	120,760	152,135	99,648
TOTAL	31,728,666	33,528,485	36,886,200	39,622,413	35,951,839	37,055,448	43,770,146	40,086,268
Reduction *	N/A	- 5.7 %	- 16.3 %	- 24.9 %	- 13.3 %	- 16.8 %	- 38.0 %	- 26.3 %

* Reduction is the % reduction compared to the FY 1999 Baseline Total

Alternative Fuel Use by Army Fleets in FY2006

The alternative fuel use data presented in Table 2 is approximated from internal records. The majority of fuel used by Army vehicles is either acquired from on-base fuel facilities or from commercial gas stations using a commercial fleet card. It is not possible at this time to

electronically capture data on the alternative fuel purchased, by type, at the point of sale. A significant number of the Army fleet does rely exclusively on the commercial refueling stations for fuel and the private sector has not yet invested in sufficient alternative fuel refueling infrastructure. The Army will increase refueling infrastructure on key installations and strive to ensure an adequate supply of vehicles to take advantage of that fuel.

Table 2. Alternative Fuel Consumption

Alternative Fuel Consumption (in GGE)							
	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006
CNG	13,034	218,016	219,443	4,732	552	2,004	2,998
LNG	0	0	0	0	0	0	0
LPG	0	23,800	7,863	3,772	12,009	10	16,782
E-85	0	2,300,963	902,914	11,323	52,762	67,303	285,871
Electric	0	0	0	0	2	75	36
M-85	0	1,086	0	0	0	0	0
Biodiesel (B100)*	0	0	0	0	48,334	40,255	39,175
Hydrogen	0	0	0	0	0	0	0
TOTAL	13,034	2,543,865	1,130,220	19,827	113,659	109,647	344,862
Estimated Total Fuel Used in AFVs	20,149,369	26,808,604	5,536,836	9,220,911	8,289,342	14,594,050	22,086,587
% of Alt Fuel Use in AFVs w/o biodiesel¹	0.1 %	9.5 %	20.4 %	0.2 %	0.8 %	0.5 %	1.4 %

*Biodiesel is calculated at 20% of the reported B20 and 100% of the reported B100 fuel used in the Section III Actual Fuel Cost/Consumption by Fuel Type data input screen. Biodiesel is *not* included in the calculation of total fuels used in AFVs because biodiesel itself is not burned in *Alternatively Fueled Vehicles*.

Summary

As detailed in this report the Army exceeded the AFV acquisition/lease requirements of EPAAct in FY 2006. The Army now has over 23,000 AFV. The Army demonstrated its commitment to reduced petroleum fuel consumption by adding additional alternative fuel refueling infrastructure in the reportable Fiscal Year, and by increasing the annual miles per gallon rating of the non-AFV fleet by 3.6 miles per gallon from the baseline year of 1999. The Army continues to bring additional refueling infrastructure on line inside the installation and to encourage private sector investment in infrastructure outside the gate. We are an Army at war and that wartime operating tempo combined with expected future growth in the force will significantly impact our future fuel consumption.

ATTACHMENTS:

- A. Actual Department of Army FY 2006 Vehicle Acquisitions
- B. Planned Department of Army FY 2007 Vehicle Acquisitions
- C. Projected Department of Army FY 2008 Vehicle Acquisitions
- D. Department of the Army Petroleum Consumption Report

Actual Department of Army FY 2006 Vehicle Acquisitions

Actual FY 2006 Light-Duty Vehicle Acquisitions				Total Vehicle Inventory	
	Leased	Purchased	Total		
Total number of Light-Duty (8,500 GVWR) - Vehicle Acquisitions	9,226	108	9,334	44,451	
Exemptions	Fleet Size	0	4	4	337
	Geographic	0	15	15	1,146
	Law Enforcement	250	0	250	1,411
	Non-MSA Operation (fleet)	0	0	0	300
	Non-MSA Operation (vehicles)	3,806	0	3,806	(n/a)
EPACT Covered Acquisitions	5,170	89	5,259	41,257	
Actual FY 2006 AFV Acquisitions				Total Vehicle Inventory	
Vehicle	Leased	Purchased	Total		
Sedan	CNG Bi-Fuel Subcompact	0	0	0	63
Sedan	CNG Bi-Fuel Compact	0	0	0	2
Sedan	E-85 Flex-Fuel Compact	3,133	0	3,133	13,294
Sedan	E-85 Flex-Fuel Midsize	111	0	111	379
Pickup 4x2	CNG Bi-Fuel	2	0	2	186
Pickup 4x2	CNG Dedicated	0	0	0	30
Pickup 4x2	E-85 Flex-Fuel	614	0	614	2,175
Pickup 4x2	Electric Dedicated	0	0	0	2
Pickup 4x2	LPG Bi-Fuel	0	0	0	23
Pickup 4x4	CNG Bi-Fuel	1	0	1	78
Pickup 4x4	E-85 Flex-Fuel	406	0	406	921
Pickup 4x4	LPG Bi-Fuel	0	0	0	16
SUV 4x2	E-85 Flex-Fuel	26	0	26	120
SUV 4x4	E-85 Flex-Fuel	280	0	280	1,226
Minivan 4x2 (Passenger)	CNG Dedicated	0	0	0	1
Minivan 4x2 (Passenger)	E-85 Flex-Fuel	1,177	0	1,177	4,287
Minivan 4x2 (Cargo)	E-85 Flex-Fuel	75	0	75	123
Van 4x2 (Passenger)	CNG Dedicated	0	0	0	1
Van 4x2 (Cargo)	CNG Bi-Fuel	0	0	0	2
Ambulance	CNG Bi-Fuel	2	0	2	0
Bus	CNG Bi-Fuel	1	0	1	0
Pickup MD	CNG Bi-Fuel	0	0	0	21
Pickup MD	E-85 Flex-Fuel	0	0	0	1
SUV MD	E-85 Flex-Fuel	0	0	0	9
Van MD (Passenger)	CNG Bi-Fuel	0	0	0	260
Van MD (Passenger)	CNG Dedicated	0	0	0	1
Van MD (Passenger)	E-85 Flex-Fuel	0	0	0	1
Van MD (Cargo)	CNG Bi-Fuel	1	0	1	66
Van MD (Cargo)	CNG Dedicated	0	0	0	3
Van MD (Cargo)	LPG Bi-Fuel	0	0	0	3
MD 8,501-16,000 GVWR	E-85 Flex-Fuel	0	0	0	16

MD 8,501-16,000 GVWR	LPG Bi-Fuel	0	0	0	4
HD 16,001 + GVWR	LPG Bi-Fuel	0	0	0	1
Total Number of AFV Acquisitions		5,829	0	5,829	23,315
Zero Emission Vehicle Credits		0	0	0	
Dedicated Light-Duty AFV Credits		0	0	0	
Dedicated Medium-Duty AFV Credits		0	0	0	
Dedicated Heavy-Duty AFV Credits		0	0	0	
Biodiesel Fuel Usage Credits - Actual				77	
Total AFV Acquisitions with Credits		5,829	0	5,906	
AFV Percentage of Covered Light-Duty Vehicle Acquisition				112 %	

Planned Department of Army FY 2007 Vehicle Acquisitions

Planned FY 2007 Light-Duty Vehicle Acquisitions

		Leased	Purchased	Total
Total number of Light-Duty (8,500 GVWR) - Vehicle Acquisitions		9,578	33	9,611
Exemptions	Fleet Size	0	1	1
	Geographic	0	11	11
	Law Enforcement	456	0	456
	Non-MSA Operation (fleet)	0	0	0
	Non-MSA Operation (vehicles)	3,721	0	3,721
EPACT Covered Acquisitions		5,401	21	5,422

Planned FY 2007 AFV Acquisitions

Vehicle		Leased	Purchased	Total
Sedan	CNG Bi-Fuel Subcompact	42	0	42
Sedan	CNG Bi-Fuel Compact	1	0	1
Sedan	E-85 Flex-Fuel Compact	4,068	0	4,068
Sedan	E-85 Flex-Fuel Midsize	80	0	80
Pickup 4x2	CNG Bi-Fuel	52	0	52
Pickup 4x2	CNG Dedicated	23	0	23
Pickup 4x2	E-85 Flex-Fuel	272	0	272
Pickup 4x2	LPG Bi-Fuel	13	0	13
Pickup 4x4	CNG Bi-Fuel	14	0	14
Pickup 4x4	E-85 Flex-Fuel	62	0	62
Pickup 4x4	LPG Bi-Fuel	15	0	15
SUV 4x2	E-85 Flex-Fuel	16	0	16
SUV 4x4	E-85 Flex-Fuel	166	0	166
Minivan 4x2 (Passenger)	E-85 Flex-Fuel	924	0	924
Minivan 4x2 (Cargo)	E-85 Flex-Fuel	1	0	1
Pickup MD	CNG Bi-Fuel	8	0	8
Van MD (Passenger)	CNG Bi-Fuel	42	0	42
Van MD (Passenger)	CNG Dedicated	1	0	1
Van MD (Cargo)	CNG Bi-Fuel	2	0	2
Van MD (Cargo)	LPG Bi-Fuel	3	0	3
HD 16,001 + GVWR	CNG Bi-Fuel	0	2	2
Total Number of AFV Acquisitions		5,805	2	5,807
Zero Emission Vehicle Credits		0	0	0
Dedicated Light-Duty AFV Credits		23	0	23
Dedicated Medium-Duty AFV Credits		2	0	2
Dedicated Heavy-Duty AFV Credits		0	0	0
Biodiesel Fuel Usage Credits - Planned				142
Total AFV Acquisitions with Credits		5,830	2	5,974
AFV Percentage of Covered Light-Duty Vehicle Acquisition				110 %

Projected Department of Army FY 2008 Vehicle Acquisitions

Projected FY 2008 Light-Duty Vehicle Acquisitions

		Leased	Purchased	Total
Total number of Light-Duty (8,500 GVWR) - Vehicle Acquisitions		9,950	56	10,006
Exemptions	Fleet Size	0	0	0
	Geographic	0	10	10
	Law Enforcement	289	0	289
	Non-MSA Operation (fleet)	0	0	0
	Non-MSA Operation (vehicles)	3,681	0	3,681
EPACT Covered Acquisitions		5,980	46	6,026

Projected FY 2008 AFV Acquisitions

Vehicle		Leased	Purchased	Total
Sedan	CNG Bi-Fuel Subcompact	13	0	13
Sedan	E-85 Flex-Fuel Compact	4,958	0	4,958
Sedan	E-85 Flex-Fuel Midsize	111	0	111
Pickup 4x2	CNG Bi-Fuel	23	0	23
Pickup 4x2	E-85 Flex-Fuel	243	0	243
Pickup 4x2	LPG Bi-Fuel	1	0	1
Pickup 4x4	CNG Bi-Fuel	13	0	13
Pickup 4x4	E-85 Flex-Fuel	65	0	65
Pickup 4x4	LPG Bi-Fuel	1	0	1
SUV 4x2	E-85 Flex-Fuel	17	0	17
SUV 4x4	E-85 Flex-Fuel	141	0	141
Minivan 4x2 (Passenger)	E-85 Flex-Fuel	845	0	845
Minivan 4x2 (Cargo)	E-85 Flex-Fuel	4	0	4
Van 4x2 (Cargo)	CNG Bi-Fuel	2	0	2
Pickup MD	CNG Bi-Fuel	3	0	3
Van MD (Passenger)	CNG Bi-Fuel	79	0	79
Van MD (Cargo)	CNG Bi-Fuel	18	0	18
MD 8,501-16,000 GVWR	LPG Bi-Fuel	3	0	3
Total Number of AFV Acquisitions		6,540	0	6,540
Zero Emission Vehicle Credits		0	0	0
Dedicated Light-Duty AFV Credits		0	0	0
Dedicated Medium-Duty AFV Credits		0	0	0
Dedicated Heavy-Duty AFV Credits		0	0	0
Biodiesel Fuel Usage Credits - Projected				160
Total AFV Acquisitions with Credits		6,540	0	6,700
AFV Percentage of Covered Light-Duty Vehicle Acquisition				111 %

Department of Army

Petroleum Consumption Report

Data from this report is comprised of the data submitted through the Fuel Use and Economy and Input Fleet Data screens current through FY 2006.

EO 13149 Covered Petroleum Consumption in GGE

	FY 1999 Baseline	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006
Gasoline	26,035,517	29,441,419	30,331,621	33,955,055	30,354,458	30,467,211	36,429,623	33,542,638
Diesel	5,693,149	4,087,066	6,554,579	5,667,358	5,597,381	6,467,477	7,188,388	6,443,982
Diesel component from biodiesel		0	0	0	0	120,760	152,135	99,648
TOTAL	31,728,666	33,528,485	36,886,200	39,622,413	35,951,839	37,055,448	43,770,146	40,086,268
Reduction*	N/A	- 5.7 %	- 16.3 %	- 24.9 %	- 13.3 %	- 16.8 %	- 38.0 %	- 26.3 %

* Reduction is the % reduction compared to the FY 1999 Baseline Total

Alternative Fuel Consumption (in GGE)

	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006
CNG	13,034	218,016	219,443	4,732	552	2,004	2,998
LNG	0	0	0	0	0	0	0
LPG	0	23,800	7,863	3,772	12,009	10	16,782
E-85	0	2,300,963	902,914	11,323	52,762	67,303	285,871
Electric	0	0	0	0	2	75	36
M-85	0	1,086	0	0	0	0	0
Biodiesel (B100)*	0	0	0	0	48,334	40,255	39,175
Hydrogen	0	0	0	0	0	0	0
TOTAL	13,034	2,543,865	1,130,220	19,827	113,659	109,647	344,862
Estimated Total Fuel Used in AFVs	20,149,369	26,808,604	5,536,836	9,220,911	8,289,342	14,594,050	22,086,587
% of Alt Fuel Use in AFVs w/o biodiesel¹	0.1 %	9.5 %	20.4 %	0.2 %	0.8 %	0.5 %	1.4 %

*Biodiesel is calculated at 20% of the reported B20 and 100% of the reported B100 fuel used in the Section III Actual Fuel Cost/Consumption by Fuel Type data input screen. Biodiesel is *not* included in the calculation of total fuels used in AFVs because biodiesel itself is not burned in *Alternatively Fueled Vehicles*.

Average Fuel Economy of non-AFV Light Duty Vehicle Acquisitions (in mpg)

	FY 1999 Baseline	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006
Fuel Economy	20.0	27.0	27.0	21.0	22.0	22.0	21.1	23.6
Change Compared to Baseline		7.0	7.0	1.0	2.0	2.0	1.1	3.6