



**National Aeronautics and Space Administration
Fleet Alternative Fuel Vehicle Program Report for Fiscal Year 2005
February 15, 2006**

This National Aeronautics and Space Administration (NASA) Fleet Alternative Fuel Vehicle (AFV) Report for Fiscal Year (FY) 2005 presents the Agency's data on the number of alternative AFV's acquired in FY 2005 and its planned and projected acquisitions for FY 2006 and FY 2007. This report has been developed in accordance with the Energy Policy Act of 1992 (EPAct) (42 U.S.C. 13211-13219) as amended by the Energy Conservation Reauthorization Act of 1998 (Public Law 105-388) (ECRA), and Executive Order (E.O.) 13149. NASA exceeded the 75 percent AFV-acquisition requirement for 243 vehicles by acquiring 429 total credits in FY 2005. Attachment A provides detailed information on the number and types of light-duty vehicles leased or purchased by NASA in FY 2005.

Legislative Requirements

EPAct requires that 75 percent of all covered light-duty vehicles acquired for Federal fleets in FY 1999 and beyond must be AFVs (where the fleets have 20 or more vehicles, are capable of being centrally fueled, and are operated in a metropolitan statistical area with a population of more than 250,000 based on the 1980 census). Certain emergency, law enforcement, and national defense vehicles are exempt from this requirement. The ECRA or 1998 amended EPAct 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 EPAct requirements. E.O. 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 FY2005 (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 acquisition by 1 mpg by FY 2002 and 3 mpg by FY 2005, and using other fleet efficiency measures.

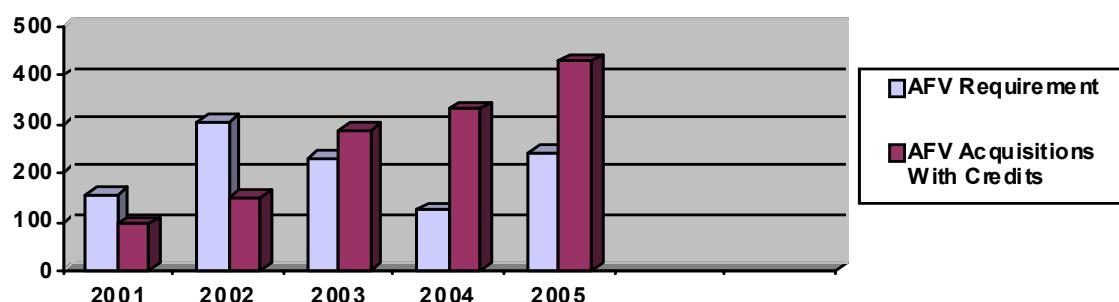
NASA Approach to Compliance with EPAct and E.O. 13149

To achieve compliance with the legislative mandates of EPAct and E.O. 13149, NASA has developed an aggressive compliance strategy including the acquisition of 75 percent of new, covered light-duty vehicles as AFVs, and use alternative fuel in these vehicles a majority of the time. NASA will also continue to acquire light duty vehicles with a higher fuel economy, and further reduce petroleum consumption by using biodiesel fuel in most diesel vehicles.

NASA also recognizes that AFV fueling infrastructure is extremely limited in most areas of the country. As such NASA has or intends to develop AFV fueling infrastructure at those NASA Center's where it is not readily commercially available. Additionally, each NASA Center now reports periodically during NASA's internal institutional review on compliance with EPAct and E.O. 13149.

NASA Fleet Compliance for FY 2005

This is a graphical depiction of AFV acquisitions by NASA's fleet in FY 2001 through 2005. NASA acquired 533 light-duty vehicles (LDV's) during FY 2005 of which 324 were EPAct covered LDV's. Of the total 533 LDV's acquired, 362 were AFVs. NASA also gained 63 credits for biodiesel fuel use and for acquiring dedicated light, medium, and heavy-duty AFVs, for a total of 429 credits, thereby exceeding EPAct requirements of 75% by 132 percentage points.



Summary of NASA's FY 2005 AFV Acquisitions

A number of vehicles that were leased and purchased by NASA were not "covered" vehicles. Of the total of 533 light-duty vehicles acquired in FY 2005, the following were not counted for compliance:

- 115 were in fleets located outside covered metropolitan statistical areas (MSA's)
- 40 were exempt as law enforcement vehicles
- 54 were exempt due to geographic assignment

NASA's Fleet AFV Acquisitions for FY 2007 and FY 2008

Attachments B and C provide detailed information on planned and projected vehicle acquisitions for NASA in FY 2007 and FY 2008. In FY 2007, NASA is planning to acquire a cumulative total of 349 light-duty vehicles of which 197 will be EPAct covered.

NASA is planning of acquiring 252 total AFVs during FY 2008, exceeding the EPAct requirement of 177 AFV's.

Special Projects of the NASA Fleet Related to AFV and Infrastructure Acquisitions

AFV fueling infrastructure projects are currently underway at several NASA Centers. During FY 2005 NASA brought on line one additional E-85 fueling stations at Johnson Space Center with a 1,000 gallon tank capacity. This station will decrease NASA's petroleum consumption and increase our percentage of AFV fuel used in AFV's.

Petroleum Savings

Since it is difficult to project petroleum savings for FY 2006 and FY 2007 based upon the estimated AFV acquisitions, improvements in fuel economy, and fleet efficiency, petroleum savings are reported for only FY 2005 based on actual data at hand for FY 1999 and FY 2005.

EO 13149 Covered Petroleum Consumption in GGE							
	FY 1999 Baseline	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005
Gasoline	1,248,163	1,211,832	1,112,032	1,122,625	1,135,805	1,115,675	1,048,652
Diesel	273,796	212,025	216,041	188,405	81,364	110,087	126,299
Diesel component from biodiesel	7,396		0	6,315	54,292	62,643	100,880
TOTAL	1,521,959	1,431,253	1,328,073	1,317,345	1,271,461	1,288,405	1,275,831
Reduction*	N/A	6.0 %	12.7 %	13.4 %	16.5 %	15.3 %	16.2 %

Alternative Fuel Use by NASA in FY 2005

The majority of vehicles acquired by NASA and other Federal fleets are leased from GSA, and the leasing contract folds in the maintenance and fuel costs for the vehicles. This is accomplished by the use of GSA credit card that the fleets use to purchase alternative fuel. However since product code standards are not uniform among suppliers of alternative fuels (e.g. E-85, Bio-diesel), it is difficult for credit vendors to accurately track the purchase of alternative fuels with this credit card. The exception is natural gas, which is usually purchased at local utility refueling site, allowing fleets to contact the utility for an accurate accounting of purchased fuel.

	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005
CNG	5,674	21,166	26,890	17,314	24,461	24,260
LNG	0	0	0	0	0	0
LPG	0	908	131	2,576	8,557	8,969
E-85	6,283	59,552	14	860	32,707	83,237
Electric	0	0	0	0	0	0
M-85	8,593	0	0	0	0	0
Biodiesel (B100)*	1,849	0	2,492	29,618	26,214	31,967
Hydrogen	0	0	0	0	0	0
TOTAL	22,399	81,626	29,527	50,368	91,939	148,433
Estimated Total Fuel Used in AFVs	*	*	175,750	220,353	238,192	510,655
% of Alt Fuel Use in AFVs w/o biodiesel¹			15.4 %	9.4 %	27.6 %	22.8 %

*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
Fuel Economy	18.0	0.0	26.5	19.0	21.1	20.6	21.5
Change Compared to Baseline	*	8.5	1.0	3.1	2.6	3.5	

Summary

As detailed in this report and the included charts, NASA exceeded the AFV acquisition requirements of EPAct in FY 2005 and projects to repeat this accomplishment in FYS 2006 and 2007. In addition, NASA fleets were able to meet the goal to reduce the agency's annual fleet petroleum consumption FY 2005. NASA did meet its goal for increase of alternative fuel use over FY 2004.

NASA will continue to implement its strategy for complying with the requirements of Executive Order 13423, which will result in at least a 2% percent reduction in the fleet's annual petroleum consumption and increase alternative fuel use by 10% annually in FY 2006.

Actual National Aeronautics and Space Administration FY 2005 Vehicle Acquisitions					
Actual FY 2005 Light-Duty Vehicle Acquisitions				Total Vehicle Inventory	
		Leased	Purchased	Total	
Total number of Light-Duty (8,500 GVWR) - Vehicle Acquisitions		525	8	533	2,417
Exemptions	Fleet Size	0	0	0	0
	Geographic	54	0	54	98
	Law Enforcement	39	1	40	116
	Non-MSA Operation (fleet)	109	6	115	502
	Non-MSA Operation (vehicles)	0	0	0	(n/a)
EPACT Covered Acquisitions		323	1	324	1,701
Actual FY 2005 AFV Acquisitions				Total Vehicle Inventory	
Vehicle		Leased	Purchased	Total	
Sedan	CNG Bi-Fuel Subcompact	0	0	0	44
Sedan	CNG Dedicated Subcompact	0	0	0	8
Sedan	E-85 Flex-Fuel Subcompact	0	0	0	1
Sedan	CNG Bi-Fuel Compact	0	0	0	29
Sedan	CNG Dedicated Compact	0	0	0	3
Sedan	E-85 Flex-Fuel Compact	149	0	149	272
Sedan	E-85 Flex-Fuel Midsize	3	0	3	48
Sedan	CNG Dedicated Large	0	0	0	1
Pickup 4x2	CNG Bi-Fuel	1	0	1	70
Pickup 4x2	CNG Dedicated	0	0	0	5
Pickup 4x2	E-85 Flex-Fuel	58	0	58	140
Pickup 4x2	LPG Bi-Fuel	0	0	0	20
Pickup 4x4	CNG Bi-Fuel	0	0	0	15
Pickup 4x4	CNG Dedicated	0	0	0	1
Pickup 4x4	E-85 Flex-Fuel	9	0	9	26
Pickup 4x4	LPG Bi-Fuel	0	0	0	1
SUV 4x2	E-85 Flex-Fuel	19	0	19	22
SUV 4x4	E-85 Flex-Fuel	15	1	16	36
Minivan 4x2 (Passenger)	E-85 Flex-Fuel	72	0	72	288
Minivan 4x2 (Cargo)	E-85 Flex-Fuel	18	0	18	22
Van 4x2 (Passenger)	E-85 Flex-Fuel	8	0	8	1
Van 4x2 (Cargo)	CNG Bi-Fuel	0	0	0	5
Van 4x2 (Cargo)	LPG Bi-Fuel	0	0	0	10
Other 4x2	CNG Bi-Fuel	0	0	0	2
Ambulance	LPG Bi-Fuel	0	0	0	1
Bus	CNG Bi-Fuel	0	0	0	1
Bus	CNG Dedicated	0	1	1	1
Pickup MD	CNG Bi-Fuel	5	0	5	11
Van MD (Passenger)	CNG Bi-Fuel	2	0	2	32
Van MD (Passenger)	CNG Dedicated	1	0	1	5
Van MD (Cargo)	CNG Bi-Fuel	0	0	0	35
Van MD (Cargo)	CNG Dedicated	0	0	0	5
Van MD (Cargo)	LPG Bi-Fuel	0	0	0	5
MD 8,501-16,000 GVWR	CNG Dedicated	0	0	0	2
MD 8,501-16,000 GVWR	LPG Bi-Fuel	0	0	0	1
Total Number of AFV Acquisitions		360	2	362	1,169
Zero Emission Vehicle Credits		0	0	0	
Dedicated Light-Duty AFV Credits		0	0	0	
Dedicated Medium-Duty AFV Credits		2	2	4	
Dedicated Heavy-Duty AFV Credits		0	0	0	

Biodiesel Fuel Usage Credits - Actual			63	
Total AFV Acquisitions with Credits	362	4	429	
AFV Percentage of Covered Light-Duty Vehicle Acquisition			132 %	

Planned National Aeronautics and Space Administration FY 2006 Vehicle Acquisitions

Planned FY 2006 Light-Duty Vehicle Acquisitions

		Leased	Purchased	Total
Total number of Light-Duty (8,500 GVWR) - Vehicle Acquisitions		348	1	349
Exemptions	Fleet Size	0	0	0
	Geographic	18	0	18
	Law Enforcement	34	0	34
	Non-MSA Operation (fleet)	99	1	100
	Non-MSA Operation (vehicles)	0	0	0
EPACT Covered Acquisitions		197	0	197

Planned FY 2006 AFV Acquisitions

Vehicle		Leased	Purchased	Total
Sedan	E-85 Flex-Fuel Subcompact	3	0	3
Sedan	E-85 Flex-Fuel Compact	81	0	81
Sedan	E-85 Flex-Fuel Midsize	19	0	19
Pickup 4x2	CNG Bi-Fuel	4	0	4
Pickup 4x2	E-85 Flex-Fuel	84	0	84
Pickup 4x4	E-85 Flex-Fuel	9	0	9
SUV 4x2	E-85 Flex-Fuel	8	0	8
SUV 4x4	E-85 Flex-Fuel	10	0	10
Minivan 4x2 (Passenger)	E-85 Flex-Fuel	53	0	53
Minivan 4x2 (Cargo)	E-85 Flex-Fuel	26	0	26
Van 4x2 (Passenger)	E-85 Flex-Fuel	8	0	8
Van 4x2 (Cargo)	CNG Bi-Fuel	1	0	1
Bus	CNG Bi-Fuel	5	0	5
Pickup MD	CNG Bi-Fuel	19	0	19
Pickup MD	LPG Bi-Fuel	0	3	3
Van MD (Passenger)	CNG Bi-Fuel	2	0	2
Van MD (Cargo)	CNG Bi-Fuel	15	0	15
Van MD (Cargo)	LPG Bi-Fuel	0	3	3
MD 8,501-16,000 GVWR	CNG Bi-Fuel	7	0	7
Total Number of AFV Acquisitions		354	6	360
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 - Planned				44
Total AFV Acquisitions with Credits		354	6	404
AFV Percentage of Covered Light-Duty Vehicle Acquisition				205 %

Projected National Aeronautics and Space Administration FY 2007 Vehicle Acquisitions

Projected FY 2007 Light-Duty Vehicle Acquisitions				
		Leased	Purchased	Total
Total number of Light-Duty (8,500 GVWR) - Vehicle Acquisitions		249	3	252
Exemptions	Fleet Size	0	0	0
	Geographic	9	0	9
	Law Enforcement	20	0	20
	Non-MSA Operation (fleet)	46	0	46
	Non-MSA Operation (vehicles)	0	0	0
EPACT Covered Acquisitions		174	3	177
Projected FY 2007 AFV Acquisitions				
Vehicle		Leased	Purchased	Total
Sedan	E-85 Flex-Fuel Subcompact	7	0	7
Sedan	CNG Bi-Fuel Compact	1	0	1
Sedan	E-85 Flex-Fuel Compact	42	0	42
Sedan	E-85 Flex-Fuel Midsize	6	0	6
Pickup 4x2	CNG Bi-Fuel	7	0	7
Pickup 4x2	E-85 Flex-Fuel	30	0	30
Pickup 4x2	LPG Bi-Fuel	0	3	3
Pickup 4x4	CNG Bi-Fuel	9	0	9
Pickup 4x4	E-85 Flex-Fuel	21	0	21
SUV 4x2	E-85 Flex-Fuel	2	0	2
SUV 4x4	E-85 Flex-Fuel	13	0	13
Minivan 4x2 (Passenger)	CNG Bi-Fuel	1	0	1
Minivan 4x2 (Passenger)	E-85 Flex-Fuel	45	0	45
Minivan 4x2 (Cargo)	E-85 Flex-Fuel	15	0	15
Van 4x2 (Passenger)	E-85 Flex-Fuel	16	0	16
Van 4x2 (Cargo)	CNG Bi-Fuel	14	0	14
Pickup MD	CNG Bi-Fuel	12	0	12
Van MD (Passenger)	CNG Bi-Fuel	1	0	1
Van MD (Passenger)	CNG Dedicated	1	0	1
Van MD (Cargo)	CNG Bi-Fuel	10	0	10
Van MD (Cargo)	CNG Dedicated	2	0	2
Van MD (Cargo)	LPG Bi-Fuel	0	2	2
MD 8,501-16,000 GVWR	CNG Bi-Fuel	7	0	7
Total Number of AFV Acquisitions		262	5	267
Zero Emission Vehicle Credits		0	0	0
Dedicated Light-Duty AFV Credits		0	0	0
Dedicated Medium-Duty AFV Credits		6	0	6
Dedicated Heavy-Duty AFV Credits		0	0	0
Biodiesel Fuel Usage Credits - Projected				44
Total AFV Acquisitions with Credits		268	5	317
AFV Percentage of Covered Light-Duty Vehicle Acquisition				179 %