

National Aeronautics and Space Administration
Fleet AFV Program Report for Fiscal Year 2002
December 16, 2002

This National Aeronautics and Space Administration (NASA) Fleet Program Report for Fiscal Year (FY) 2002 presents the Agency's data on the number of alternative fuel vehicles (AFV) acquired during FY 2002. This report has been 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 (E.O.) 13149.

During the FY 2001 Federal Automotive Statistical Tool (FAST) session, NASA had originally planned on obtaining a 99 percent AFV acquisitions for FY 2002. This planned percentage was not obtained, since prior to April 2002, NASA's contractor vehicles were not included as part of the NASA's AFV calculation for EPAAct or E.O. 13149. When NASA determined that contractor vehicles were reportable and should be included, NASA's anticipated EPAAct compliance for FY 2002 decreased significantly. NASA compliance for FY 2002 reported in FAST is 49 percent. Attachment A provides detailed information on the number and types of light-duty vehicles leased or purchased by NASA in FY 2002. Although this percentage is less than the EPAAct mandate of 75 percent, it represents a 4 percent increase over 2001. NASA has since mandated compliance with the EPAAct and E.O. 13149 to its contractors.

NASA is aggressively seeking to meet EPAAct and E.O. 13149 requirements during FY 2003. Attachment B provides detailed information as to the number and types of light-duty vehicles NASA is planning to acquire during FY 2003. As depicted in Attachment B, NASA's plan is to acquire 120 percent total AFV acquisitions, including credits for biodiesel usage and acquisition of dedicated compressed natural gas (CNG) light and medium duty vehicles. As NASA continues to get AFV fueling infrastructure in place at the Centers, we are projecting 155 percent total AFV acquisitions, with credits, during FY 2004.

Legislative Requirements

EPAAct 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 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 ECRA 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. The head of each Federal agency must also prepare and submit a report to

Congress outlining the agency's AFV acquisitions and future plans by November 13th each year. 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.

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

To achieve compliance with the legislative mandates of EPAct and E.O. 13149, NASA is planning to acquire 75 percent of new light-duty vehicles as AFVs, during FY 2003, and use alternative fuel in these vehicles a majority of the time. As part of NASA's AFV strategy, consideration is being given to a new surcharge program that will add \$10 monthly to the cost of every vehicle leased through the General Services Administration (GSA) to help cover the higher incremental cost of many AFV models (compared to conventional vehicles). 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 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 2002

Figure 1 is a graphical depiction of AFV acquisitions in fiscal year 2002. NASA acquired 307 covered light-duty vehicles (LDVs), including contractor vehicles, in fiscal year 2002, of which 149 were AFVs (including credits). This represents a 49 percent compliance rate.

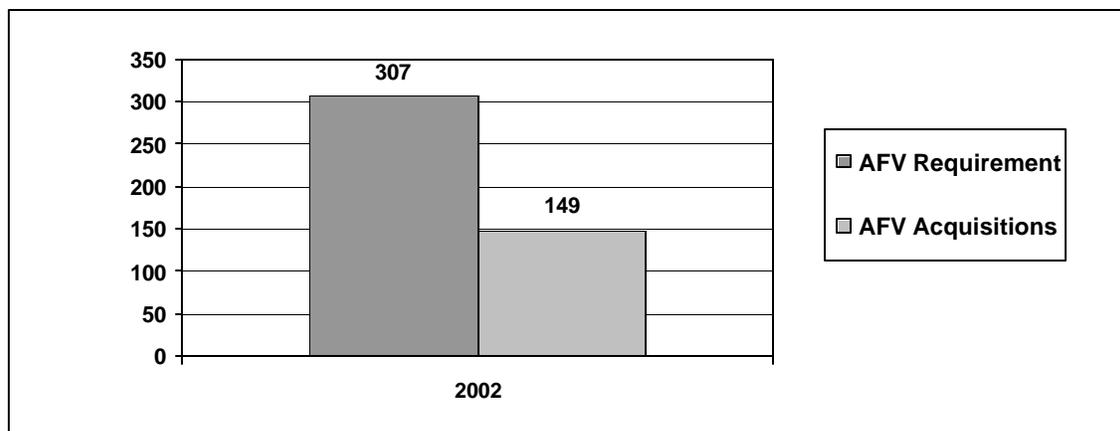


Figure 1. Summary of NASA's FY 2002 AFV Acquisitions

Alternative Fuel Use by NASA Fleets in FY 2002

Table 2 presents alternative fuel use data for NASA's fleets in fiscal year 2002. The majority of vehicles acquired by NASA and other Federal fleets are leased from GSA, and the leasing contract includes maintenance and fuel costs for the vehicles. This is accomplished by the use of a GSA credit card to purchase alternative fuel. However, since product code standards are not uniform among suppliers of alternative fuels (e.g., ethanol or E-85), it is impossible for credit vendors to accurately track the purchase of alternative fuels with this credit card. The exception may be natural gas, which is usually purchased at a local utility refueling site, allowing the fleets to contact the utility for an accurate accounting of purchased fuel.

Table 2. NASA Fuel Use in FY 2002

Fuel Type	Quantity GGE	Unit
CNG	26,890	Gallons @ 2,400 psi, 70°F
E-85	14	Gallons*
Propane	131	Gallons
Biodiesel (B100)**	2,492	Gallons

* Estimate based on incomplete data

**Biodiesel is calculated at 20% of the reported B20 and 100% of the reported B100 fuel used

Petroleum Savings

Since it is difficult to calculate petroleum savings for FY 2003 and FY 2004 based upon the estimated AFV acquisitions, improvements in fuel economy, and fleet efficiency, petroleum savings are reported for only FY 2002. This information is approximated since it is acquired from GSA historical data and NASA's FAST report.

NASA-wide fleet use of gasoline and diesel fuel depicted in Attachment D was determined for fiscal year (FY) 1999, for both covered and non-covered vehicles. The FY 1999 baseline was originally calculated at 1,949,566 GGE's. After reviewing petroleum usage for FY's 2000, 2001 and 2002, it was apparent that the original estimate for FY 1999 was inaccurate. As such, NASA's Manager of Transportation Programs adjusted the FY 1999 baseline to 1,478,081 GGE's. This new estimate more accurately reflects an appropriate baseline based upon subsequent years petroleum usage and reductions, as well as anticipated reductions in future years. Although this new estimated baseline reduces NASA's percentages in attaining the goals, it more clearly reflects actual reductions across the Agency. In FY 1999 NASA's baseline petroleum consumption is now 1,478,081 GGE and FY 2002 petroleum consumption was 1,317,344 GGE. This represents an decrease of 160,737 GGE in FY 2002 compared to the 1999 baseline (10.9 percent reduction).

Summary

NASA will continue to implement its strategy for complying with the requirements of E.O. 13149

Attachment A - AFV Report 2002 - Actuals

Actuals FY 2002 Light-Duty Vehicle Acquisitions				Total Vehicle Inventory
	Leased	Purchased	Total	
Total number of Light-Duty (8,500 GVWR) - Vehicle Acquisitions				2,704
Exemptions	Fleet Size	0	0	0
	Geographic	0	0	0
	Law Enforcement	30	0	30
	Non-MSA Operation (fleet)	85	12	97
	Non-MSA Operation (vehicles)	<i>(n/a)</i>	<i>(n/a)</i>	36
EPACT Covered Acquisitions				1,917
Actual FY 2002 AFV Acquisitions				Total Vehicle Inventory
Vehicle	Leased	Purchased	Total	
Sedan	CNG Bi-Fuel Subcompact	1	0	1
Sedan	CNG Dedicated Subcompact	0	0	0
Sedan	Electric Dedicated Subcompact	0	0	0
Sedan	CNG Bi-Fuel Compact	0	0	0
Sedan	E-85 Flex-Fuel Compact	3	0	3
Sedan	E-85 Flex-Fuel Midsize	29	6	35
Sedan	CNG Dedicated Large (law enf.)	0	0	0
Pickup 4x2	E-85 Flex-Fuel Compact	16	0	16
Pickup 4x2	E-85 Flex-Fuel Compact Ext Cab	2	0	2
Pickup 4x2	E-85 Flex-Fuel Compact Reg Cab	0	0	0
Pickup 4x2	CNG Bi-Fuel Full-size Ext Cab	0	0	0
Pickup 4x2	E-85 Flex-Fuel Full-size Ext Cab	0	0	0
Pickup 4x2	CNG Bi-Fuel Full-size Reg Cab	4	0	4
Pickup 4x2	CNG Dedicated Full-size Reg Cab	0	0	0
Pickup 4x4	E-85 Flex-Fuel Compact Reg Cab	1	0	1
Pickup 4x4	LPG Bi-Fuel Full-size Reg Cab	0	0	0
SUV 4x4 4dr	E-85 Flex-Fuel Compact	1	0	1
SUV 4x4 4dr	E-85 Flex-Fuel Midsize	7	0	7
Van 4x2	E-85 Flex-Fuel Compact	48	5	53
Van 4x2	CNG Dedicated Large	0	0	0
Van 4x2	CNG Dedicated Large	0	0	0
Bus	CNG Bi-Fuel	0	0	0
Bus	CNG Dedicated	0	0	0
MD AFV Other 8,501-16,000 GVWR	CNG Bi-Fuel	0	0	0
Pickup 4x2	CNG Bi-Fuel Full-size Reg Cab	0	0	0
Van 4x2	CNG Bi-Fuel Large	3	0	3
Van 4x2	CNG Dedicated Large	1	0	1
Van 4x2	CNG Dedicated Multistop	0	0	0
Total Number of AFV Acquisitions		132	11	143
Zero Emission Vehicle Credits		0	0	0
Dedicated Light-Duty AFV Credits		0	0	0
Dedicated Medium-Duty AFV Credits		2	0	2
Dedicated Heavy-Duty AFV Credits		0	0	0
Biodiesel Fuel Usage Credits - Actuals				4
Total AFV Acquisitions with Credits		134	11	149
AFV Percentage of Covered Light-Duty Vehicle Acquisition				49%

Attachment B - Planned - NASA FY 2003 Vehicle Acquisitions

FY 2003 Light-Duty Vehicle Acquisitions - Planned

		Leased	Purchased	Total
Total number of Light-Duty (8,500 GVWR) - Vehicle Acquisitions		305	14	319
Exemptions	Fleet Size	0	0	0
	Geographic	0	0	0
	Law Enforcement	2	0	2
	Non-MSA Operation (fleet)	82	1	83
	Non-MSA Operation (vehicles)	(n/a)	(n/a)	0
EPACT Covered Acquisitions		221	13	234

FY 2003 AFV Acquisitions - Planned

Vehicle		Leased	Purchased	Total
Sedan (SIN 8, 8C)	CNG Bi-Fuel Subcompact	16	0	16
Sedan (SIN 8, 8C)	CNG Dedicated Subcompact	5	0	5
Sedan (SIN 9, 9C)	CNG Bi-Fuel Compact	22	0	22
Sedan (SIN 9, 9C)	E-85 Flex-Fuel Compact	32	0	32
Sedan (SIN 10, 10B)	E-85 Flex-Fuel Midsize	64	6	70
Pickup 4x2 (SIN 61)	E-85 Flex-Fuel Compact Reg Cab	1	5	6
Pickup 4x2 (SIN 42C)	CNG Bi-Fuel Full-size Ext Cab	1	0	1
Pickup 4x2 (SIN 41, 42)	CNG Bi-Fuel Full-size Reg Cab	18	0	18
Pickup 4x2 (SIN 41)	E-85 Flex-Fuel Full-size Reg Cab	11	0	11
Pickup 4x2 (SIN 41, 42)	LPG Bi-Fuel Full-size Reg Cab	6	0	6
Pickup 4x4 (SIN 46, 47)	CNG Bi-Fuel Full-size Reg Cab	2	0	2
SUV 4x2 4dr (SIN 100)	E-85 Flex-Fuel Compact	1	0	1
SUV 4x4 4dr (SIN 105B)	E-85 Flex-Fuel Midsize	2	0	2
Van 4x2 (SIN 20, 30)	E-85 Flex-Fuel Compact	23	2	25
Van 4x2 (SIN 21, 31)	CNG Dedicated Large	1	0	1
Emergency & Special Purpose MD 8,501-16,000 GVWR (SIN)	CNG Bi-Fuel	1	0	1
MD AFV Other 8,501-16,000 GVWR (SIN)	CNG Bi-Fuel	2	0	2
Van 4x2 (SIN 131, 134, 134B)	CNG Bi-Fuel	2	0	2
Van 4x2 (SIN 22, 24, 32, 34)	CNG Bi-Fuel Large	6	0	6
Van 4x2 (SIN 22, 24, 32, 34)	CNG Dedicated Large	3	0	3
Total Number of AFV Acquisitions		219	13	232
Zero Emission Vehicle Credits		0	0	0
Dedicated Light-Duty AFV Credits		6	0	6
Dedicated Medium-Duty AFV Credits		6	0	6
Dedicated Heavy-Duty AFV Credits		0	0	0
Biodiesel Fuel Usage Credits - Planned				37
Total AFV Acquisitions with Credits		231	13	281
AFV Percentage of Covered Light-Duty Vehicle Acquisition				120%

Attachment C - Projected - NASA FY 2004 AFV Acquisitions

Projected FY 2004 Light-Duty Vehicle Acquisitions

	Leased	Purchased	Total
Total number of Light-Duty (8,500 GVWR) - Vehicle Acquisitions	259	27	286
Exemptions	Fleet Size	0	0
	Geographic	0	0
	Law Enforcement	1	0
	Non-MSA Operation (fleet)	81	6
	Non-MSA Operation (vehicles)	(n/a)	(n/a)
EPACT Covered Acquisitions	177	21	198

Projected FY 2004 AFV Acquisitions

Vehicle	Leased	Purchased	Total
Sedan (SIN 8, 8C) CNG Bi-Fuel Subcompact	19	0	19
Sedan (SIN 8, 8C) CNG Dedicated Subcompact	5	2	7
Sedan (SIN 9, 9C) CNG Bi-Fuel Compact	8	0	8
Sedan (SIN 9, 9C) E-85 Flex-Fuel Compact	14	2	16
Sedan (SIN 10, 10B) E-85 Flex-Fuel Midsize	9	2	11
Pickup 4x2 (SIN 61) E-85 Flex-Fuel Compact Reg Cab	12	9	21
Pickup 4x2 (SIN 41, 42) CNG Bi-Fuel Full-size Reg Cab	8	0	8
Pickup 4x2 (SIN 41) E-85 Flex-Fuel Full-size Reg Cab	33	0	33
Pickup 4x2 (SIN 41, 42) LPG Bi-Fuel Full-size Reg Cab	5	0	5
Pickup 4x4 (SIN 57) CNG Bi-Fuel Full-size Crew Cab	1	0	1
Pickup 4x4 (SIN 46, 47) CNG Bi-Fuel Full-size Reg Cab	2	0	2
SUV 4x2 4dr (SIN 100B) E-85 Flex-Fuel Midsize	1	0	1
SUV 4x4 4dr (SIN 105) E-85 Flex-Fuel Compact	1	0	1
SUV 4x4 4dr (SIN 105B) E-85 Flex-Fuel Midsize	2	0	2
Van 4x2 (SIN 20, 30) E-85 Flex-Fuel Compact	32	6	38
Van 4x2 (SIN 21, 31) CNG Dedicated Large	4	0	4
Van 4x2 (SIN 31A) CNG Dedicated Large	1	0	1
MD AFV Other 8,501-16,000 GVWR (SIN) CNG Bi-Fuel	22	0	22
Van 4x2 (SIN 22, 24, 32, 34) CNG Bi-Fuel Large	11	1	12
Van 4x2 (SIN 22, 24, 32, 34) CNG Dedicated Large	1	0	1
HD 16,001 + GVWR (SIN) CNG Bi-Fuel	6	0	6
Total Number of AFV Acquisitions	197	22	219
Zero Emission Vehicle Credits	0	0	0
Dedicated Light-Duty AFV Credits	10	2	12
Dedicated Medium-Duty AFV Credits	2	0	2
Dedicated Heavy-Duty AFV Credits	0	0	0
Biodiesel Fuel Usage Credits - Projected			74
Total AFV Acquisitions with Credits	209	24	307
AFV Percentage of Covered Light-Duty Vehicle Acquisition			155%

Attachment D - National Aeronautics and Space Administration

EO 13149 Covered Petroleum Consumption in GGE

	FY 1999*						
	Baseline	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005
Gasoline	1,234,888	1,211,832	1,112,032	1,122,625			
Diesel	243,193	212,025	216,041	188,405			
Diesel component from biodiesel		7,396	0	6,315			
TOTAL	1,478,081	1,423,857	1,328,073	1,317,344			
Reduction**	N/A	3.7 %	10.1 %	10.9 %			

*NASA-wide fleet use of gasoline and diesel fuel was determined for fiscal year (FY) 1999, for both covered and non-covered vehicles. The FY 1999 baseline was originally calculated at 1,949,566 GGE's. After reviewing petroleum usage for FY's 2000, 2001 and 2002, it was apparent that the original estimate for FY 1999 was inaccurate. As such, NASA's Manager of Transportation Programs adjusted the FY 1999 baseline to 1,478,081 GGE's. This new estimate more accurately reflects an appropriate baseline based upon subsequent years petroleum usage and reductions, as well as anticipated reductions in future years. Although this new estimated baseline reduces NASA's percentages in attaining the goals, it more clearly reflects actual reductions across the Agency.

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

Alternative Fuel Consumption (in GGE)

	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005
CNG	5,674	21,166	26,890			
LNG	0	0	0			
LPG	0	908	131			
E-85	6,283	59,552	14			
Electric	0	0	0			
M-85	8,593	0	0			
Biodiesel (B100)	1,849	0	2,492			
TOTAL	22,399	81,626	29,527			
Estimated Total Fuel Used in AFVs	*	*	175,750			
% of Alt Fuel Use in AFVs w/o biodiesel			15.382 %			

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	26.5	19			
Change Compared to Baseline		*	8.5	1			