

National Aeronautics and Space Administration

Fleet Alternative Fuel Vehicle Program Fleet Report for Fiscal Year 2010

February 15, 2011

This National Aeronautics and Space Administration (NASA) Fleet Alternative Fuel Vehicle (AFV) Report for Fiscal Year (FY) 2010 presents the Agency's data on the number of AFVs acquired in FY 2010 and its planned and projected acquisitions for FY 2011 and FY 2012. This report has been developed in accordance with the Energy Policy Act of 1992 (EPAct 1992) (42 U.S.C. 13211-13219) as amended by the Energy Conservation Reauthorization Act of 1998 (Public Law 105-388) (ECRA), Energy Policy Act of 2005 (EPAct 2005), and Executive Order (E.O.) 13423 (signed by the President in January 2007) and E.O. 13514 (signed by the President in October 2009). NASA exceeded the 75 percent AFV acquisition requirement for 125 vehicles, by acquiring 210 total credits in FY 2010.

Legislative Requirements

The EPAct requires that 75 percent of all covered light duty vehicles (LDVs) 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 (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 this requirement. In January 2007, President Bush signed E.O. 13423, which strengthened the mandate and requires agencies with 20 or more vehicles in the United States to decrease petroleum consumption by 2 percent per year relative to their FY 2005 baseline through FY 2015. E.O. 13423 also requires agencies to increase alternative fuel use by 10 percent per year relative to the previous year. In October 2009, President Obama signed E.O. 13514, which extends the requirement for reduction of petroleum use by 2 percent annually through FY 2020.

NASA Approach to Compliance with EPActs, E.O. 13423, and E.O. 13514

To achieve compliance with the legislative mandates of EPActs, E.O. 13423, and E.O. 13514, NASA has developed an aggressive compliance strategy including the acquisition of 75 percent of new, covered LDVs as AFVs and use of alternative fuel in these vehicles a majority of the time. NASA also will continue to acquire LDVs with higher fuel efficiency and further reduce petroleum consumption by using biodiesel fuel in most diesel vehicles where available. NASA 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 Centers where such infrastructure is not readily commercially available. Additionally, each NASA Center now reports on its institutional compliance with the EPAct, E.O. 13423, and E.O. 13514.

NASA Fleet Compliance for FY 2010

NASA acquired 245 LDVs during FY 2010, of which 125 were considered EPAAct-covered acquisitions. Of the total 245 LDVs acquired, 168 were AFVs. NASA also gained 42 credits for biodiesel fuel use and for acquiring dedicated light, medium, and heavy duty AFVs, for a total of 210 credits, thereby exceeding EPAAct requirements of 75 percent by 93 percentage points.

Summary of NASA's FY 2010 AFV Acquisitions

A number of vehicles that were leased and purchased by NASA were not "covered" vehicles. Of the total of 245 LDVs acquired in FY 2010, the following were not counted for compliance:

- 63 were in fleets located outside covered MSAs
- 39 were exempt as "non-covered" vehicles
- 11 were exempt as Law Enforcement vehicles
- 7 were exempt due to geographic assignment

NASA's Fleet AFV Acquisitions for FY 2011, FY 2012, and FY 2013

Below is the detailed information on planned and projected vehicle acquisitions for NASA in FY 2011, 2012, and 2013.

2010 AFV Report: Planned Data (FY2011)

	1. Planned Light Duty Vehicle Acquisitions and Exemptions		
	Acquisitions		
	Leased	Purchased	Total
Total Light Duty Vehicle Acquisitions	352	2	354
Fleet Exemptions: Fleet Size	0	0	0
Fleet Exemptions: Foreign	0	2	2
Fleet Exemptions: Geographic	0	0	0
Fleet Exemptions: Non-MSA Operation	133	0	133
Vehicle Exemptions: LE Vehicle	3	0	3
Vehicle Exemptions: Non-covered Vehicle	0	0	0
Vehicle Exemptions: Non-MSA Operation	14	0	14
Total EPAAct-Covered Vehicles	202	0	202

2. Planned Alternative Fuel Vehicle Acquisition Detail

Vehicle Type	Fuel	LE	Acquisitions		Total	EPAct Credits
			Lease	Purchase		
Light Duty Vehicles						
Sedan/St Wgn Compact	E85 FF	No	109	0	109	109
Sedan/St Wgn Compact	GAS HY ³	No	8	0	8	8
Sedan/St Wgn Compact	GAS HY ³	Yes	1	0	1	0
Sedan/St Wgn Midsize	E85 FF	No	37	0	37	37
Sedan/St Wgn Midsize	E85 FF	Yes	2	0	2	0
Sedan/St Wgn Subcompact	CNG DE	No	6	0	6	6
LD Minivan 4x2 (Cargo)	E85 FF	No	3	0	3	3
LD Minivan 4x2 (Passenger)	E85 FF	No	35	0	35	35
LD Pickup 4x2	CNG BI	No	7	0	7	7
LD Pickup 4x2	CNG DE	No	2	0	2	2
LD Pickup 4x2	E85 FF	No	56	0	56	56
LD Pickup 4x2	LPG BI	No	3	0	3	3
LD SUV 4x2	E85 FF	No	2	0	2	2
LD Van 4x2 (Cargo)	E85 FF	No	7	0	7	7
LD Van 4x2 (Passenger)	E85 FF	No	5	0	5	5
LD Minivan 4x4 (Passenger)	E85 FF	No	3	0	3	3
LD Pickup 4x4	CNG BI	No	1	0	1	1
LD Pickup 4x4	E85 FF	No	2	0	2	2
LD SUV 4x4	E85 FF	No	16	0	16	16
LD SUV 4x4	E85 FF	Yes	2	0	2	0
Medium Duty Vehicles						
MD Other	CNG BI	No	6	0	6	6
MD Pickup	E85 FF	No	3	0	3	3
MD Van (Cargo)	CNG BI	No	9	0	9	9
MD Van (Cargo)	CNG DE	No	1	0	1	1
MD Van (Cargo)	E85 FF	No	4	1	5	5
MD Van (Passenger)	CNG BI	No	1	0	1	1
MD Van (Passenger)	E85 FF	No	6	0	6	6
Totals:			337	1	338	333

3. Planned EPAct Acquisition Credits Summary

Base AFV Acquisition Credits:	333
Zero Emission Vehicle (ZEV) Credits:	0
Dedicated Light Duty AFV Credits:	8
Dedicated Medium Duty AFV Credits:	2
Dedicated Heavy Duty AFV Credits:	0
Biodiesel Fuel Usage Credits: ⁴	12
Total EPAct Credits:	355
Overall EPAct Compliance Percentage:	176 %

2010 AFV Report: Projected Data (FY2012)

1. Projected Light Duty Vehicle Acquisitions and Exemptions

	Acquisitions		
	Leased	Purchased	Total
Total Light Duty Vehicle Acquisitions	254	2	256
Fleet Exemptions: Fleet Size	0	0	0
Fleet Exemptions: Foreign	0	2	2
Fleet Exemptions: Geographic	0	0	0
Fleet Exemptions: Non-MSA Operation	99	0	99
Vehicle Exemptions: LE Vehicle	3	0	3
Vehicle Exemptions: Non-covered Vehicle	0	0	0
Vehicle Exemptions: Non-MSA Operation	23	0	23
Total EAct-Covered Vehicles	129	0	129

2. Projected Alternative Fuel Vehicle Acquisition Detail

Vehicle Type	Fuel	LE	Acquisitions			EAct Credits
			Lease	Purchase	Total	
Light Duty Vehicles						
Sedan/St Wgn Compact	E85 FF	No	7	0	7	7
Sedan/St Wgn Compact	GAS HY ³	No	9	0	9	9
Sedan/St Wgn Midsize	E85 FF	No	38	0	38	38
Sedan/St Wgn Midsize	E85 FF	Yes	2	0	2	0
Sedan/St Wgn Subcompact	CNG DE	No	6	0	6	6
LD Minivan 4x2 (Cargo)	E85 FF	No	4	0	4	4
LD Minivan 4x2 (Passenger)	E85 FF	No	54	0	54	54
LD Pickup 4x2	CNG BI	No	10	0	10	10
LD Pickup 4x2	CNG DE	No	2	0	2	2
LD Pickup 4x2	E85 FF	No	48	0	48	48
LD Pickup 4x2	LPG BI	No	3	0	3	3
LD SUV 4x2	E85 FF	No	5	0	5	5
LD SUV 4x2	E85 FF	Yes	3	0	3	0
LD SUV 4x2	GAS HY ³	No	1	0	1	1
LD Van 4x2 (Cargo)	E85 FF	No	5	0	5	5
LD Van 4x2 (Passenger)	E85 FF	No	12	0	12	12
LD Pickup 4x4	CNG BI	No	2	0	2	2
LD Pickup 4x4	E85 FF	No	3	0	3	3
LD SUV 4x4	E85 FF	No	10	0	10	10
Medium Duty Vehicles						
MD Pickup	E85 FF	No	4	0	4	4
MD Van (Cargo)	CNG BI	No	3	0	3	3
MD Van (Cargo)	E85 FF	No	5	0	5	5
MD Van (Passenger)	CNG BI	No	5	0	5	5
Totals:			241	0	241	236

3. Projected EAct Acquisition Credits Summary

Base AFV Acquisition Credits:	236
Zero Emission Vehicle (ZEV) Credits:	0
Dedicated Light Duty AFV Credits:	8
Dedicated Medium Duty AFV Credits:	0
Dedicated Heavy Duty AFV Credits:	0
Biodiesel Fuel Usage Credits: ⁴	12
Total EAct Credits:	256
Overall EAct Compliance Percentage:	198 %

2010 AFV Report: Forecast Data (FY2013)

1. Forecast Light Duty Vehicle Acquisitions and Exemptions

	Acquisitions		
	Leased	Purchased	Total
Total Light Duty Vehicle Acquisitions	207	2	209
Fleet Exemptions: Fleet Size	0	0	0
Fleet Exemptions: Foreign	0	2	2
Fleet Exemptions: Geographic	0	0	0
Fleet Exemptions: Non-MSA Operation	111	0	111
Vehicle Exemptions: LE Vehicle	2	0	2
Vehicle Exemptions: Non-covered Vehicle	0	0	0
Vehicle Exemptions: Non-MSA Operation	20	0	20
Total EAct-Covered Vehicles	74	0	74

2. Forecast Alternative Fuel Vehicle Acquisition Detail

Vehicle Type	Fuel	LE	Acquisitions			EAct Credits
			Lease	Purchase	Total	
Light Duty Vehicles						
Sedan/St Wgn Compact	E85 FF	No	9	0	9	9
Sedan/St Wgn Compact	GAS HY ³	No	2	0	2	2
Sedan/St Wgn Midsize	E85 FF	No	31	0	31	31
Sedan/St Wgn Midsize	E85 FF	Yes	1	0	1	0
Sedan/St Wgn Subcompact	CNG DE	No	6	0	6	6
LD Minivan 4x2 (Cargo)	E85 FF	No	18	0	18	18
LD Minivan 4x2 (Passenger)	E85 FF	No	24	0	24	24
LD Pickup 4x2	CNG BI	No	6	0	6	6
LD Pickup 4x2	E85 FF	No	53	0	53	53
LD SUV 4x2	E85 FF	No	6	0	6	6
LD Van 4x2 (Cargo)	E85 FF	No	2	0	2	2
LD Van 4x2 (Passenger)	E85 FF	No	4	0	4	4
LD Minivan 4x4 (Passenger)	E85 FF	No	3	0	3	3
LD Pickup 4x4	E85 FF	No	5	0	5	5
LD SUV 4x4	E85 FF	No	9	0	9	9
						2
LD SUV 4x4	GAS HY ³	No	2	0	2	

			Lease	Purchase	Total	
Medium Duty Vehicles						
MD Pickup	CNG BI	No 2	0	2	2	
MD Pickup	E85 FF	No 1	0	1	1	
MD Van (Cargo)	CNG BI	No 3	0	3	3	
MD Van (Cargo)	CNG DE	No 1	0	1	1	
MD Van (Cargo)	E85 FF	No 2	0	2	2	
MD Van (Passenger)	CNG BI	No 1	0	1	1	
Totals:			191	0	191	190

3. Forecast EAct Acquisition Credits Summary

Base AFV Acquisition Credits:	190
Zero Emission Vehicle (ZEV) Credits:	0
Dedicated Light Duty AFV Credits:	6
Dedicated Medium Duty AFV Credits:	2
Dedicated Heavy Duty AFV Credits:	0
Biodiesel Fuel Usage Credits: ⁴	13
Total EAct Credits:	211
Overall EAct Compliance Percentage:	285 %

Petroleum Savings

Since it is difficult, if not impossible, to project petroleum savings in out years, only actual data is provided for FY 2010. E.O. 13423 established the NASA baseline in FY 2005. NASA, by E.O. 1423 and E.O. 13514, has mandated a 2 percent reduction of petroleum use annually through FY 2020.

Covered Petroleum Consumption in GGE

	Baseline					
	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Gasoline		770,847	833,580	888,044	733,068	731,890
Diesel		301,092	316,588	337,136	285,534	212,177
B20*		99,859	99,207	30,764	63,964	82,885
Total	1,275,831	1,171,798	1,249,375	1,255,944	1,082,566	1,026,952
Target		1,250,314	1,224,797	1,199,281	1,173,764	1,148,247
Compliant		Yes	No	No	Yes	Yes

* B20 is the diesel component from covered biodiesel consumption.

Alternative Fuel Use by NASA in FY 2010.

New alternative fuel use baselines were derived from FY 2005 data. By mandate of E.O. 13423, NASA is required to increase alternative fuel use by 10 percent annually.

The majority of vehicles acquired by NASA and other Federal fleets are leased from GSA. These leases include maintenance and fuel costs for the vehicles. Annual usage for the Agency is determined through 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 E85), it is difficult for credit vendors to determine the specific fuel purchased. The exception may be natural gas, which is usually purchased at local utility refueling sites, thus allowing fleets to contact the utility for an accurate accounting of purchased fuel. Alternative fuel use data is approximated from proportioning GSA data and internal recordkeeping efforts.

Alternative Fuel Consumption in GGE						
	Baseline FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
CNG		15,760	32,047	14,837	11,902	11,893
LNG		0	0	0	0	0
LPG		10,661	10,237	7,263	7,664	5,520
E85		199,227	231,772	234,671	241,260	236,656
Electric		0	0	0	0	0
M85		0	0	0	0	0
B100*		29,015	29,323	21,625	19,101	21,776
Hydrogen		0	0	0	0	0
Total	148,433	254,663	303,379	278,396	279,927	275,845
Target		163,276	179,603	197,564	217,320	239,052
Compliant		Yes	Yes	Yes	Yes	Yes

*B100 is calculated at 20 percent of the reported B20 and 100 percent of the reported B100 fuel used in the Section III Actual fuel Cost/consumption by Fuel Type data input screen.

Summary

As detailed in this report and the attachments, NASA exceeded the AFV acquisition requirements of EPOA in FY 2010 and projects to repeat this accomplishment in FY 2011 and FY 2012. In addition, NASA fleets were able to meet the goal of annual fleet petroleum consumption reduction in FY 2010.

NASA expects a significant drop in fleet size in FY 2011 as the shuttle program is projected to end, which will further reduce petroleum consumption as well as alternative fuel consumption.