

# **FISCAL YEAR 2017 ALTERNATIVE FUEL VEHICLE ACQUISITION REPORT**

**February 2018**

**United States  
Environmental  
Protection Agency**





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## Executive Summary

This is the U.S. Environmental Protection Agency’s (EPA’s) fiscal year (FY) 2017 annual report on the agency’s performance in meeting the environmental stewardship transportation requirements of the Energy Policy Act of 1992 (EPA 1992), the Energy Independence and Security Act of 2007 (EISA 2007), and Executive Order (EO) 13693. This report was developed in accordance with EPA 1992 (42 U.S.C. 13211-13219) as amended by the Energy Conservation Reauthorization Act of 1998.

EPA 1992 requires that in FY 1999 and beyond, 75 percent of all non-exempt vehicle acquisitions by federal agencies must be alternative fuel vehicles (AFVs). EO 13423<sup>1</sup> required federal agencies to increase alternative fuel consumption by 10 percent annually compared to the previous year’s alternative fuel usage requirement. EO 13423 also set a goal for federal agencies to reduce petroleum consumption by 2 percent annually relative to an FY 2005 baseline. However, EO 13423 was superseded by EO 13693, which altered the sustainability metrics from a focus on fuels to a focus on greenhouse gas (GHG) emissions reduction. EO 13693 now mandates a progressive reduction of per-mile GHG emissions totaling at least 30 percent by FY 2025, using an FY 2014 baseline. EO 13693 also requires implementation of vehicle telematics systems and acquisition of plug-in hybrid electric vehicles (PHEVs) and zero emission vehicles (ZEVs). Finally, EISA 2007 prohibits the acquisition of any light-duty vehicle or medium-duty passenger vehicle that is not designated as a low-GHG-emitting vehicle (LGHGV), except where a specific non-LGHGV vehicle configuration is required to fulfill mission requirements. Table 1 summarizes the agency’s performance in meeting these requirements.

**Table 1. The EPA’s FY 2017 Performance in Meeting Federal Fleet Requirements**

Driver	Performance	FY 2017 Goal/Requirement	EPA FY 2017 Performance
EPA 1992	AFV Acquisitions	75% of the 67 non-exempt, light-duty vehicles acquired in FY 2017 (i.e., 51 AFV credits and acquisitions)	Acquired 53 AFVs and AFV credits, or <b>79.1%</b> of non-exempt acquisitions
EISA	LGHGVs Acquisitions	100% of non-exempt light-duty and medium-duty passenger vehicles must be LGHGVs	Achieved <b>100%</b> LGHGV acquisition rate for non-exempt vehicle acquisitions
EO	Per-Mile GHG Emissions	4% reduction from the 2014 baseline of <b>416.89</b> gCO <sub>2</sub> e/mile (i.e., a target of 400.22 gCO <sub>2</sub> e/mile)	Reduced per-mile GHG emissions by <b>9.39%</b> from FY 2014 baseline, achieving <b>377.74</b> gCO <sub>2</sub> e/mile

The EPA has achieved significant progress towards an energy- and cost-efficient fleet, which is a result of the agency’s determined and strategic efforts in vehicle acquisitions, operations and communication. The EPA has met or exceeded all federal fleet requirements and anticipates even greater strides in the near future.

<sup>1</sup> EO 13423 was revoked by EO 13693 effective March 19, 2015, but EO 13423 compliance in FY 2016 is noted in Appendix B.



## Legislative and Executive Order Requirements

Congress and the President have established laws and policies regarding federal fleet sustainability that make GHG emission reductions a priority for federal agencies. Table 2 summarizes federal fleet requirements for vehicle acquisitions, GHG emissions and fuel consumption:

**Table 2. Summary of Federal Fleet Requirements**

<b>EPAct 1992, as amended by the Energy Conservation Reauthorization Act of 1998, and Section 2862 of the National Defense Authorization Act of 2008</b>
<ul style="list-style-type: none"> <li>Acquire 75% of light-duty vehicles as AFVs, unless exempted.</li> </ul>
<b>EPAct of 2005, Section 701</b>
<ul style="list-style-type: none"> <li>Use alternative fuels to operate dual-fueled vehicles unless the vehicles qualify for a waiver.</li> </ul>
<b>Energy Independence and Security Act (EISA) of 2007, Sections 141, 142 and 246</b>
<ul style="list-style-type: none"> <li>Prohibit acquisition of light-duty or medium-duty passenger vehicles that are not LGHGVs.</li> <li>Reduce petroleum consumption by 20% and increase alternative fuel use by 10% by FY 2015 and thereafter.</li> </ul>
<b>EO 13423 Strengthening Federal Environmental, Energy and Transportation Management</b>
<ul style="list-style-type: none"> <li>Reduce annual petroleum consumption by at least 2% each year through FY 2015, compared to FY 2005 consumption levels.</li> <li>Increase annual consumption of alternative fuels by 10% relative to the previous fiscal year alternative fuel target.</li> </ul>
<b>EO 13514 Federal Leadership in Environmental, Energy, and Economic Performance</b>
<ul style="list-style-type: none"> <li>Reduce greenhouse gas emissions through reduced petroleum consumption.</li> <li>Reduce annual petroleum consumption by at least 2% each year through FY 2020, compared to FY 2005 consumption levels.</li> </ul>
<b>Presidential Memorandum on Federal Fleet Performance (May 24, 2011)<sup>2</sup></b>
<ul style="list-style-type: none"> <li>Acquire only AFVs for light-duty vehicle acquisitions starting December 31, 2015.</li> <li>Ensure executive fleet vehicles are midsized sedans or smaller, except where larger sedans are essential to the agency mission.</li> <li>Establish a vehicle allocation methodology (VAM) to determine the appropriate size and number of vehicles.</li> </ul>
<b>EO 13693 Planning for Federal Sustainability in the Next Decade</b>
<ul style="list-style-type: none"> <li>Determine optimal fleet inventory and eliminate unnecessary vehicles.</li> <li>Reduce per-mile GHG emissions by 4% by the end of FY 2017; 15% by the end of FY 2021; and 30% by the end of FY 2025, using an FY 2014 baseline.</li> <li>Deploy telematics in all new light-duty and medium-duty acquisitions by March 19, 2017.</li> <li>Ensure fleet data is reported in agency fleet database, Federal Automotive Statistical Tool, Federal Motor Vehicle Registration System and FleetDASH.</li> <li>Ensure that 20% of new passenger vehicle acquisitions are ZEVs or PHEVs starting CY 2021 and 50% of new passenger vehicle acquisitions are ZEVs or PHEVs starting CY 2026.</li> <li>Plan for installation of ZEV/PHEV refueling infrastructure and opportunities for vehicle-to-grid technology.</li> </ul>

<sup>2</sup> Revoked by EO 13693. However, VAM and AFV acquisition requirements were retained in the EO.



## FY 2017 Compliance With EAct 1992

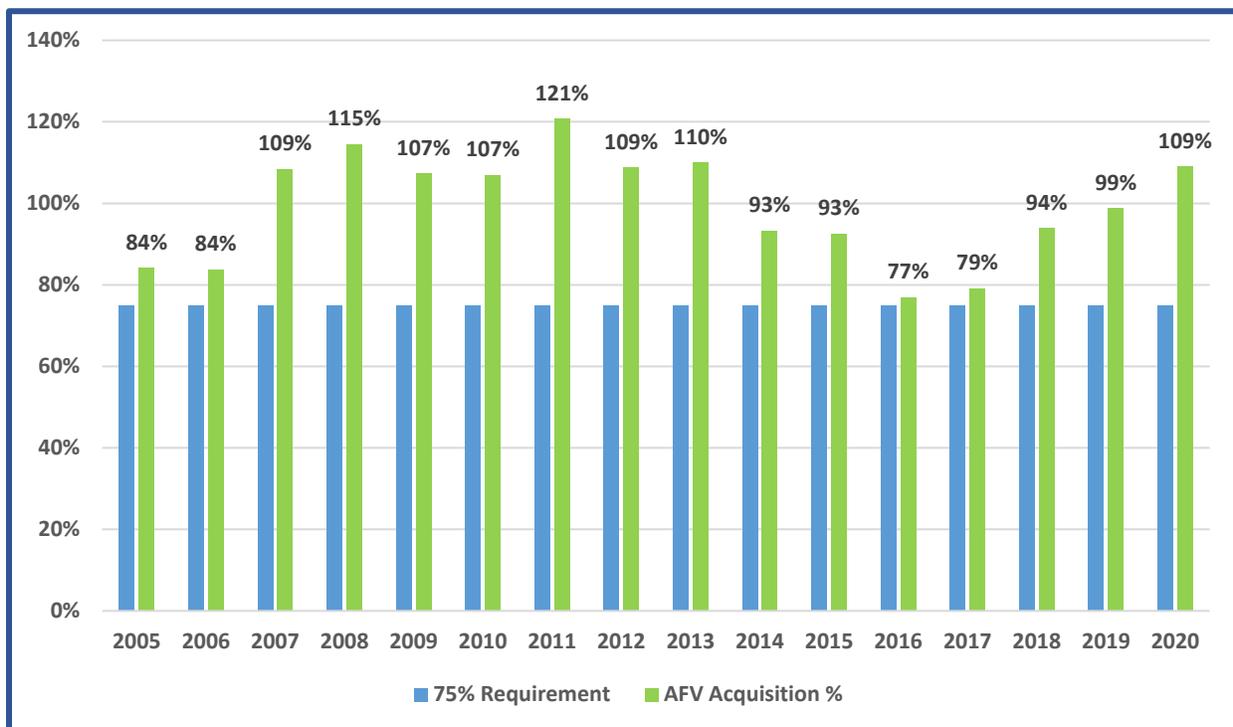
The EPA has exceeded EAct 1992 acquisition requirements each year since FY 1999, and the agency projects this trend to continue. As summarized in Table 3, in FY 2017 the agency acquired 53 AFVs, earning 53 EAct credits to count as a percentage of the 67 subject vehicle acquisitions.

**Table 3. The EPA's FY 2017 Performance in Meeting EAct 1992 Requirements**

EAct-Covered Non-Exempt Vehicle Acquisitions	67
AFVs Acquired	53
Additional Credits Earned	0
<b>Total AFVs and Credits (as % of non-exempt acquisitions)</b>	<b>79.1%</b>

The agency achieved 79.1 percent acquisition of AFVs in FY 2017. This meets and exceeds the EAct 1992 requirement of a 75 percent AFV acquisition rate, and is consistent with past performance in fiscal years 2005 through 2016. The EPA anticipates exceeding EAct 1992 AFV acquisition requirements through FY 2020.

Figure 1 depicts EPA AFV acquisitions from FY 2005 through FY 2017 and forecasts acquisitions for FY 2018 through FY 2020. Appendix A provides information on the number and types of light-duty vehicles acquired by the agency.



**Figure 1. The EPA's EAct 1992 Actual and Projected Compliance, FY 2005-2020<sup>3</sup>**

<sup>3</sup> Includes credits for petroleum-dedicated AFVs (also known as LGHGVs) and biodiesel use. Percentages can exceed 100 percent of covered acquisitions when the EPA receives AFV credits for non-covered acquisitions and other events.



## FY 2017 Compliance With EISA 2007

Federal fleets are prohibited by EISA 2007 Section 141 from acquiring light-duty and medium-duty passenger vehicles that are not designated as LGHGVs. These are vehicles with GHG emissions that fall below specified thresholds based on vehicle and fuel type, as determined by the EPA’s Office of Transportation and Air Quality. An exemption to this mandate can be granted if no LGHGV is available that meets agency mission requirements for a given location (also known as a “functional needs exception”). Table 4 below details the EPA’s performance toward EISA 2007 vehicle acquisition goals.

**Table 4. The EPA’s FY 2017 Performance in Meeting EISA 2007 Requirements**

<b>Total FY 2017 Subject Acquisitions</b>	116
<b>Total EISA Exempt FY 2017 Acquisitions</b>	83 (out of 116)
<b>Total EISA Non-Exempt FY 2017 Acquisitions</b>	33 (out of 116)
<b>EISA 141 Compliant Acquisitions</b>	33 (out of 33)
<b>FY 2017 Compliance Target</b>	100%
<b>FY 2017 Actual Performance</b>	100%

In FY 2017, the EPA acquired 33 vehicles subject to EISA 2007 requirements, and all 33 vehicles were LGHGVs, resulting in an LGHGV acquisition rate of 100 percent and full compliance with EISA 2007. The EPA will continue to monitor all vehicle acquisitions to ensure that EISA and EPAct acquisition requirements are met.



## FY 2017 Compliance With EO 13693

EO 13693 mandates that federal fleets progressively reduce GHG emissions on a per-mile basis for a total reduction of 30 percent by FY 2025. Though experiencing a slight increase in per-mile GHG emissions in FY 2016 over the previous fiscal year, the EPA resumed a downward emissions trend in FY 2017, exceeding the year’s reduction target of 4 percent from the FY 2014 baseline with a total 9.39 percent reduction. The EPA is on track to achieve more than the 6.75 percent target reduction in FY 2018. Figure 2 provides the EPA’s current performance and projected targets through FY 2025.

The EPA reduced emissions from the FY 2014 baseline of 416.89 grams of carbon dioxide equivalent per mile (CO<sub>2e</sub> g/mile) to 377.74 CO<sub>2e</sub> g/mile in FY 2017. The EPA will continue to develop and implement strategies to reduce GHG emissions by acquiring and utilizing fuel-efficient vehicles and alternative fuels.

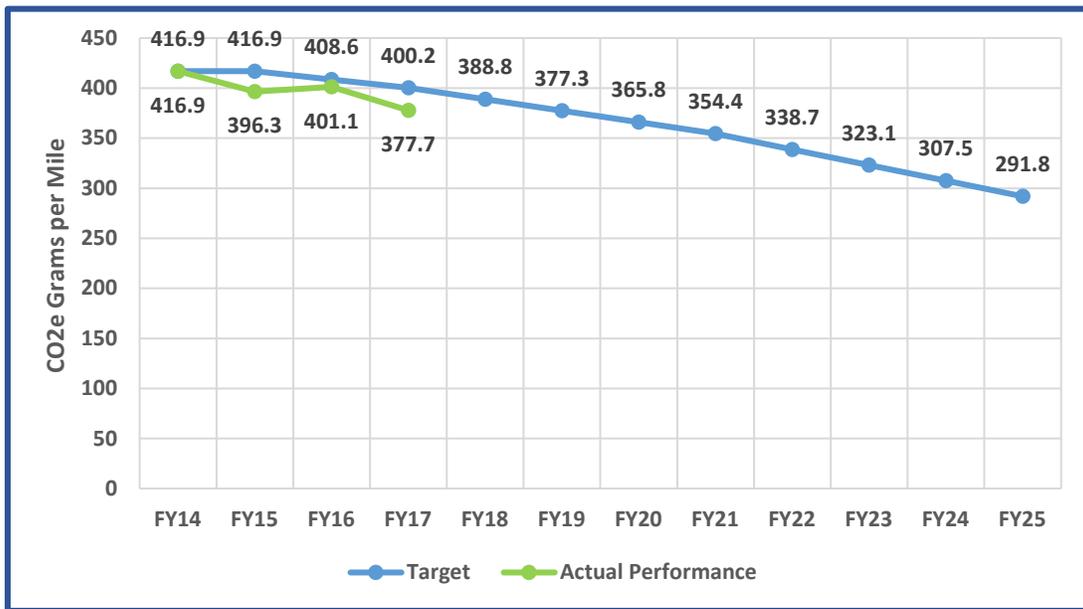


Figure 2. The EPA’s FY 2017 Performance in Meeting EO 13693 Requirements

## Success Stories

In FY 2017, the EPA was successful in meeting the 75 percent AFV acquisition requirement of EPAct 1992. As mentioned above and presented in Table 4 and Figure 2, the EPA achieved a 79.1 percent AFV acquisition rate in FY 2017, exceeding requirements by 5.5 percent. The EPA projects that it will continue to meet and exceed this requirement for the next three fiscal years, based on current fleet estimates.

The EPA has adapted rapidly to the new requirements of EO 13693. Starting strong under the new requirement in FY 2015 at a 4.93 percent reduction, the EPA continued its per-mile GHG emissions reductions in FY 2017, achieving a 9.39 percent reduction, far exceeding the year’s target of 4 percent and even outpacing the FY 2018 target of 6.75 percent. From an FY 2014 baseline of 416.89 CO<sub>2e</sub> g/mile, the EPA’s fleet-generated emissions have been reduced to 377.74 CO<sub>2e</sub> g/mile.



The EPA will reposition the agency's fleet sustainability strategy to ensure compliance with EO 13693's shift in focus from absolute petroleum reduction and alternative fuel growth to per-mile GHG efficiency. Efficient and strategic acquisitions, petroleum use reduction, and alternative fuel use will all continue to play vital roles in the EPA's approach moving forward.

Though EO 13423 was superseded by EO 13693, the EPA continued to track the agency's performance under the previous EO 13423 requirement to reduce petroleum consumption by 24 percent compared to 2005 consumption levels. In FY 2017, the EPA reduced its covered petroleum consumption by 38.4 percent, exceeding the requirement by an extra 73.9 percent beyond the would-be FY 2017 target of 24 percent petroleum reduction from the baseline. The EPA had already met both the final 22 percent total reduction goal of EO 13423 in FY 2009 (seven years earlier than would have been required) and the final 30 percent petroleum reduction goal of EO 13514 in FY 2011 (nine years earlier than required). The agency will continue to reduce petroleum use as much as is feasible.

The EPA continued to advance intra-agency communication in FY 2017 between the EPA Headquarters fleet team and satellite fleet locations. As part of these efforts, the EPA continued its fleet site visit program, Fleet Compliance and Operations Review Enterprise (FleetCORE). The EPA reviewed two regional fleet locations and conducted a comprehensive fleet management assessment for both sites. The review team issued FleetCORE reports that highlighted best practices and provided recommendations for improving operations and compliance efforts. Additionally, the Agency Fleet Manager conducted quarterly conference calls with Regional Fleet Managers to discuss agency progress, current issues, conditions in the field and potential strategies to increase alternative fuel consumption and reduce petroleum use. The headquarters fleet team conducted a training session for EPA Fleet Managers via video teleconference on April 19, 2017. The objective of the training session was to share best practices in fleet management and reiterate the agency's goals regarding environmental compliance.

In accordance with the Presidential Memorandum on Federal Fleet Performance and GSA Bulletin B-30, the EPA conducted a vehicle allocation methodology (VAM) study (required at least once every five years) in FY 2016 with the goal of identifying and eliminating under-utilized and unnecessary motor vehicles. One year after the study and detailed research and analysis of the fleet, the EPA reduced its overall fleet inventory by 19 vehicles over the course of FY 2017. Combined with the 170 vehicles the agency eliminated from FY 2012 through FY 2016, the EPA has reduced its fleet by a total of 189 vehicles (16.5 percent of the FY 2011 baseline fleet inventory of 1,145 vehicles) since the issuance of the Presidential Memorandum. The EPA's right-sizing efforts and fleet reductions are projected to provide significant cost savings over the next five years based on lease cost savings alone.

In FY 2017, the EPA worked with the GSA to develop pathways to leasing additional plug-in hybrid electric vehicles (PHEVs) and electric vehicle supply equipment (EVSE, also known as charging stations). PHEVs can help reduce the agency's GHG emissions by using only electricity to power the vehicle for most common vehicle trips. PHEVs are just one of many advanced vehicle types that are making transportation more efficient and environmentally advantageous than ever before. The EPA will continue to partner with the GSA to promote and test clean vehicle technologies and assist in the expansion of next-generation AFVs.



## Appendices

Appendix A provides detailed information on actual acquisitions of light-duty AFVs in FY 2017, as required by EPCRA 1992. As shown in Appendix A, the EPA acquired a total of 115 light-duty vehicles in FY 2017. Of these, 67 were EPCRA-covered acquisitions, thus establishing a 51-percent minimum AFV credit requirement to meet EPCRA's 75 percent requirement. For FY 2017, the agency acquired 53 AFVs, and thus 53 EPCRA credits, resulting in a 79 percent AFV acquisition rate.

Appendix B details the EPA's performance against metrics of rescinded EO 13423. Though no longer necessary to track, these metrics are still useful in illustrating the progress of the agency's fuel strategies.

Appendix C defines a list of commonly used acronyms for terminology related to alternative fuels and federal fleets.

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## Appendix A: FY 2017 EAct-Reported Vehicle Acquisitions

Light-Duty Vehicle Acquisitions and Exemptions			
	Leased	Purchased	Total
Total Light-Duty Vehicle Acquisitions	115	10	115
Fleet Exemptions: Fleet Size	0	0	0
Fleet Exemptions: Foreign	0	0	0
Fleet Exemptions: Geographic	3	0	3
Vehicle Exemptions: LE Vehicle	43	0	43
Vehicle Exemptions: Non-Covered Vehicle	0	0	0
Vehicle Exemptions: Non-MSA Operation	2	0	2
<b>Total EAct-Covered Vehicles</b>	<b>67</b>	<b>0</b>	<b>67</b>

Alternative Fuel Vehicle Acquisition Detail						
Vehicle Type	Fuel	Law Enforcement	Leased	Purchased	Total	EAct Credits
<i>Light and Medium Duty Vehicles</i>						
Sedan/St Wgn Compact	E85 FF	No	1	0	1	1
Sedan/St Wgn Compact	E85 FF	Yes	1	0	1	0
Sedan/St Wgn Compact	GAS HY	No	2	0	2	2
Sedan/St Wgn Compact	GAS HY	Yes	1	0	1	0
Sedan/St Wgn Compact	GAS PH	No	1	0	1	1
Sedan/St Wgn Midsize	E85 FF	No	5	0	5	0
Sedan/St Wgn Subcompact	E85 FF	No	1	0	1	1
Sedan/St Wgn Subcompact	GAS AF	No	1	0	1	1
LD Minivan 4x2 (Cargo)	E85 FF	No	1	0	1	1
LD Minivan 4x2 (Passenger)	E85 FF	No	7	0	7	7
LD Minivan 4x2 (Passenger)	E85 FF	Yes	2	0	2	0
LD Pickup 4x2	E85 FF	No	1	0	1	1
LD Pickup 4x2	E85 FF	Yes	3	0	3	0
LD SUV 4x2	E85 FF	No	1	0	1	1
LD SUV 4x2	E85 FF	Yes	2	0	2	0
LD SUV 4x2	GAS AF	No	5	0	5	5
LD Van 4x2 (Passenger)	E85 FF	No	1	0	1	1
LD Pickup 4x4	E85 FF	No	2	0	2	2
LD Pickup 4x4	E85 FF	Yes	2	0	2	0
LD SUV 4x4	E85 FF	No	26	0	26	26
LD SUV 4x4	E85 FF	Yes	9	0	9	0
LD SUV 4x4	GAS AF	No	1	0	1	1
MD Pickup	E85 FF	Yes	1	0	1	0
MD Van (Cargo)	E85 FF	No	2	0	2	2
<b>Totals:</b>			<b>79</b>	<b>0</b>	<b>79</b>	<b>53</b>

EAct Acquisition Credits Summary	
Base AFV Acquisition Credits:	53
Zero Emission Vehicle Credits:	0
Dedicated Light Duty AFV Credits:	0
Dedicated Medium Duty AFV Credits:	0
Dedicated Heavy Duty AFV Credits:	0
Biodiesel Fuel Usage Credits:	0
Total EAct Credits:	53
<b>Overall EAct Compliance Percentage:</b>	<b>79 %</b>



## Appendix B: Previous EO Metrics

EO 13693 revoked EOs 13423 and 13514 on March 19, 2015. These previous orders required annual 2 percent reductions in petroleum consumption from an FY 2005 baseline initially through FY 2015 (EO 13423), then extended to FY 2020 (EO 13514). Though revoked nearly two years prior, the 2 percent reduction metric of these two orders is noted in this report, primarily to track the EPA’s continuing strong performance in petroleum reduction efforts. By FY 2017, the EPA would have been required to reduce petroleum consumption by 24 percent relative to an FY 2005 consumption baseline. The EPA’s actual reduction was 41.8 percent below FY 2005 levels. The EPA thus exceeded the cumulative 20 percent petroleum reduction target required by EO 13423 in FY 2009 (two years after the EO was issued and six years earlier than required) and surpassed the cumulative 30 percent reduction requirement goal of EO 13514 in FY 2011 (two years after the EO was issued and nine years earlier than required). The EPA remains diligent in implementing new strategies to reduce the agency’s petroleum use.

Table E-1 summarizes the EPA’s performance against the petroleum consumption goals of EO 13423.

**Table B-1. The EPA’s FY 2017 Performance in Meeting EO 13423 Requirements**

Petroleum Consumption	
FY 2005 Baseline	513,346 GGEs
FY 2017 Petroleum Consumption Goal	390,143 GGEs (24% reduction from baseline)
FY 2017 Actual Petroleum Consumption	298,694 GGEs (41.8% reduction from baseline)
EO 13423 Compliant?	Yes

The EPA continues to strive for alternate fuel usage where such fuels are reasonably accessible for AFVs. However, as the now-revoked EO 13423 had stipulated, it has been a struggle to achieve year-over-year increases in such consumption due to an ongoing trend of decreasing accessibility of alternative fuel infrastructure for the EPA’s fleet. Despite this, the agency still managed to utilize 23,008 GGEs of alternative fuel in FY 2017, thereby offsetting a sizable portion of petroleum that would have otherwise been consumed. The EPA is committed to strategies and tools to identify opportunities for increased alternative fuel consumption nationwide.

Table E-2 summarizes the agency’s covered fuel consumption by type of fuel (alternative and conventional) in motor vehicles from FY 2005 through FY 2017.

**Table B-2. The EPA’s Total Covered Fuel Use, FY 2005 through FY 2017 (in GGEs)**

Fuel Type	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
CNG <sup>4</sup>	17,970	10,371	188	250	90	244	143	0	0	0	0	0	0
E85	26,498	8,340	16,563	36,563	48,619	40,020	51,427	50,871	47,521	45,158	32,783	25,725	22,800
Biodiesel	126	519	2,050	2,609	2,381	2,204	2,180	1,722	1,425	866	641	299	98
Hydrogen	0	0	0	18	74	54	0	0	0	0	0	0	0
Electricity	0	0	0	0	0	0	0	70	107	117	240	207	110
Total Alt. Fuel Use	44,594	19,230	18,801	39,440	51,164	42,522	53,750	52,663	49,053	46,141	33,664	26,231	23,008
Total Covered Petroleum	513,346	451,996	469,557	413,130	395,242	385,172	345,602	347,856	313,891	286,281	312,449	316,035	298,694

<sup>4</sup> Compressed Natural Gas.



## Appendix C: Acronyms

Acronym	Phrase
AFV	Alternative fuel vehicle
CNG	Compressed natural gas
CO <sub>2</sub> e g/mile	Carbon dioxide equivalent grams per mile
CY	Calendar year
E85/E85 FF	Ethanol (85% ethanol, 15% petroleum)/E85 flex-fuel
EISA	Energy Independence and Security Act of 2007
ELE DE	Electric dedicated
EO	Executive Order
EPAct	Energy Policy Act
FleetCORE	Fleet Compliance and Operations Review Enterprise
FY	Fiscal year
GAS HY	Gasoline hybrid electric vehicle
GAS PH	Gasoline plug-in hybrid electric vehicle
GGE	Gasoline gallon equivalent
GSA	Government Services Administration
GHG	Greenhouse gas
HEV	Hybrid electric vehicle
LD/MD/HD	Light-, medium-, or heavy-duty (as determined by gross vehicle weight)
LE	Law enforcement
LGHGV	Low greenhouse gas-emitting vehicle
MSA/CMSA	Metropolitan Statistical Area/Consolidated Metropolitan Statistical Area
PHEV	Plug-in hybrid electric vehicle
SUV	Sport utility vehicle
VAM	Vehicle allocation methodology
VTC	Video teleconference
ZEV	Zero emission vehicle