

November 22, 2002



# Environment

DoD Alternative Fuel Vehicle  
(D-2003-025)

Department of Defense  
Office of the Inspector General

*Quality*

*Integrity*

*Accountability*

### **Additional Copies**

To obtain additional copies of this report, visit the Web site of the Inspector General of the Department of Defense at [www.dodig.osd.mil/audit/reports](http://www.dodig.osd.mil/audit/reports) or contact the Secondary Reports Distribution Unit of the Audit Followup and Technical Support Directorate at (703) 604-8937 (DSN 664-8937) or fax (703) 604-8932.

### **Suggestions for Future Audits**

To suggest ideas for or to request future audits, contact the Audit Followup and Technical Support Directorate at (703) 604-8940 (DSN 664-8940) or fax (703) 604-8932. Ideas and requests can also be mailed to:

OAIG-AUD (ATTN: AFTS Audit Suggestions)  
Inspector General of the Department of Defense  
400 Army Navy Drive (Room 801)  
Arlington, VA 22202-4704

### **Defense Hotline**

To report fraud, waste, or abuse, contact the Defense Hotline by calling (800) 424-9098; by sending an electronic message to [Hotline@dodig.osd.mil](mailto:Hotline@dodig.osd.mil); or by writing to the Defense Hotline, The Pentagon, Washington, DC 20301-1900. The identity of each writer and caller is fully protected.

### **Acronyms**

AFV	Alternative Fuel Vehicle
GSA	General Services Administration



INSPECTOR GENERAL  
DEPARTMENT OF DEFENSE  
400 ARMY NAVY DRIVE  
ARLINGTON, VIRGINIA 22202-4704

November 22, 2002

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION,  
TECHNOLOGY, AND LOGISTICS  
UNDER SECRETARY OF DEFENSE  
(COMPTROLLER)/CHIEF FINANCIAL OFFICER

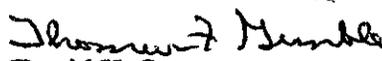
SUBJECT: Report on DoD Alternative Fuel Vehicle Program (Report No. D-2003-025)

We are providing this report for review and comment. We considered management comments on a draft of this report when preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. As a result of management comments, we deleted draft report Recommendation 1.c., and revised Recommendations 1.a., 1.b., and 2. to clarify our intent. The combined comments from the Deputy Under Secretary of Defense (Installations and Environment) and the Assistant Deputy Under Secretary of Defense (Supply Chain Integration) were partially responsive. Therefore, we request that the Under Secretary of Defense for Acquisition, Technology, and Logistics provide additional comments on Recommendation 1. by January 21, 2003.

If possible, please provide management comments in electronic format (Adobe Acrobat file only). Copies of the management comments must contain the actual signature of the authorizing official. We cannot accept the / Signed / symbol in place of the actual signature. If you arrange to send classified comments electronically, they must be sent over the classified SECRET Internet Protocol Router Network (SIPRNET).

Questions should be directed to Mr. William C. Gallagher at (703) 604-9270 (DSN 664-9270) or Mr. George P. Marquardt at (703) 604-9275 (DSN 664-9275). See Appendix D for the report distribution. The team members are listed inside the back cover.

  
For David K. Steensma  
Deputy Assistant Inspector General  
for Auditing

## Office of the Inspector General of the Department of Defense

Report No. D-2003-025

November 22, 2002

(Project No. D2001CK-0132)

### DoD Alternative Fuel Vehicle Program

#### Executive Summary

**Who Should Read This Report and Why?** This report concerns those managers who are specifically involved with the DoD alternative fuel vehicle program. It discusses impediments to program compliance and explains current Department actions.

**Background.** Public Law 102-486, "Energy Policy Act of 1992," directed Federal agencies to establish a program to promote the development of domestic replacement fuels, to include alternative fuel vehicle acquisition, operation, and fueling requirements. Executive Order No. 13149, "Greening the Government Through Federal Fleet and Transportation Efficiency," April 21, 2000, endorsed the alternative fuel vehicle acquisition requirements established by the Energy Policy Act of 1992 and directed Federal agencies to exercise leadership in the reduction of petroleum consumption through improvements in fleet fuel efficiency, and the use of alternative fuel vehicles and alternative fuels. DoD Components had about 12,500 alternative fuel vehicles in their fleets.

**Results.** DoD has made limited progress in implementing an effective alternative fuel vehicle program. DoD did not meet the 75 percent alternative fuel vehicle acquisition goals for FYs 2000 and 2001, acquiring 47 and 62 percent, respectively, and is not likely to meet the goal in FY 2002. DoD had alternative fuels refueling capabilities on or near only 76 of about 5,300 operating sites nationwide and commercial alternative fuel facilities are insufficient to support the national alternative fuel vehicle program. Systems for tracking fuels usage for the DoD alternative fuel vehicle program were also inadequate. Furthermore, DoD did not include alternative fuels within the total energy management of petroleum fuels and until FY 2000 did not finance alternative fuels through the Defense Working Capital Fund. DoD has not met the Energy Policy Act of 1992 goals of increasing fleet fuel efficiency and reducing petroleum consumption through the use of alternative fuel vehicles and alternative fuels. Development and implementation of a comprehensive strategy will improve program compliance. Under Secretary of Defense for Acquisition, Technology, and Logistics and Under Secretary of Defense (Comptroller)/Chief Financial Officer support for the inclusion of alternative fuels within the Defense Working Capital Fund will increase program efficiency. For details of the audit results, see the Finding section of the report. See Appendix A for details on the management control program.

**Management Comments and Audit Response.** Management partially concurred with the recommendations. The Deputy Under Secretary of Defense (Installations and Environment) and the Assistant Deputy Under Secretary of Defense (Supply Chain Integration) in a combined response stated that the capitalization of either alternative fuels or alternative fuels infrastructure would not increase demand for alternative fuels. They stated that the Defense Energy Support Center should continue to provide accounting and reporting on alternative fuels that it has capitalized for, biodiesel and ethanol (E85), which are consumed by the Services. They also stated that the Defense Energy Support Center does not manage alternative fuels infrastructure, but does fund infrastructure maintenance, repair, and environmental compliance projects related to capitalized products. They agreed to continue the identification and conversion of existing infrastructure for alternative fuel use. They stated that the Defense Energy Support Center continues to work with the General Services Administration to capture off base fuel purchases through commercial credit card systems. The Director, Logistics Operations, Defense Logistics Agency stated that the Defense Energy Support Center should be involved in acquisition and supply of alternative fuels, but not the building of new infrastructure that has no commercial or private sector counterpart. The Under Secretary of Defense (Comptroller)/Chief Financial Officer stated two alternative fuels are included under Defense Working Capital Fund financing, and inclusion of additional fuels requires making a business case for economic feasibility. He stated his office would review alternative fuels on a regular basis to ensure appropriate financing. See the Finding section of the report for a discussion of management comments and the Management Comments section of the report for the complete text.

The comments provided by the Deputy Under Secretary of Defense (Installations and Environment) and the Under Secretary of Defense (Comptroller)/Chief Financial Officer were partially responsive. We consider actions taken to date by the Deputy Under Secretary of Defense (Installations and Environment) on this program, including publication of the Executive Order 13149 Compliance Strategy in July 2002, to be positive steps. However, the acquisition of vehicles capable of operating on alternative fuels and then operating them using petroleum-based fuels fails to maximize the Government's investment in those vehicles and slows DoD progress in achieving its goals for alternative fuels use. The lack of alternative fuels infrastructure, such as readily available refueling stations, contributes to the problem. We believe program success in near term is questionable unless those problems are addressed and Component program and fleet managers are held accountable for meeting the goals of alternative fuels use. The Under Secretary of Defense for Acquisition, Technology, and Logistics must closely monitor Component programs and implementation to achieve compliance goals. New strategies may be needed to achieve program success, including certain legislative initiatives to resolve infrastructure impediments.

# Table of Contents

---

<b>Executive Summary</b>	i
<b>Background</b>	1
<b>Objectives</b>	3
<b>Finding</b>	
Program Implementation	4
<b>Appendixes</b>	
A. Scope and Methodology	14
Management Control Program Review	14
Prior Coverage	15
B. Glossary	16
C. DoD Alternative Fuel Vehicle Program Statistics	18
D. Report Distribution	19
<b>Management Comments</b>	
Under Secretary of Defense for Acquisition, Technology, and Logistics	21
Under Secretary of Defense (Comptroller)/Chief Financial Officer	28
Defense Logistics Agency	30

---

## Background

The United States uses more petroleum each year than the next five largest consuming nations combined. The Federal Government is the largest single consumer of energy in the United States, with DoD consuming about 80 percent of the Federal Government total. Over 40 percent of the energy use is for buildings and non-tactical vehicles. In FY 2000, DoD consumed 4.5 billion gallons of aviation, marine, and ground fuels, including 200 million gallons of gasoline and diesel fuels. In May 2001, the President's National Energy Policy Development Group released the report titled "National Energy Policy," which identified the ability to use energy more wisely through conservation as one of three energy challenges to our prosperity and way of life.

**Energy Policy Act of 1992.** Public Law 102-486, "Energy Policy Act of 1992" (EPAAct 1992), October 24, 1992, directed Federal agencies to establish a program to promote the development of domestic replacement fuels, and reduce national dependence on traditional petroleum-based fuels, demand for imported oil, and emissions of air pollutants. EPAAct 1992 assigned administrative responsibility to establish and manage the Federal program to the Secretary of Energy, and required the Federal agencies to submit an annual report to Congress summarizing compliance with mandated Alternative Fuel Vehicle (AFV) acquisitions by fleets (see Appendix B for AFV program definitions). EPAAct 1992 mandated that at least 75 percent of total light-duty vehicles acquired by a Federal fleet shall be AFVs in FY 1999 and thereafter. Agencies could transfer acquisition credits between fleets, and receive up to 50 percent of their total credits through the use of biodiesel fuels. EPAAct 1992 further instructs Federal agencies to arrange for the fueling of AFVs at publicly available fueling facilities to the maximum extent practicable, to measure alternative fuel use, and to operate dual-fueled vehicles on alternative fuels.

**Executive Order No. 13149.** Executive Order No. 13149, "Greening the Government Through Federal Fleet and Transportation Efficiency," April 21, 2000, endorsed the requirements established by EPAAct 1992 and directed Federal agencies to exercise leadership in the reduction of petroleum consumption through improvements in fleet fuel efficiency, and the use of AFVs and alternative fuels. Executive Order No. 13149 directed each agency to:

- develop a performance strategy to meet established petroleum reduction goals;
- reduce the annual petroleum consumption of its vehicle fleet by at least 20 percent by the end of FY 2005, based on 1999 consumption levels; and
- increase the average Environmental Protection Agency fuel economy rating of passenger cars and light trucks acquired by at least 1 mile per gallon by the end of FY 2002, and 3 miles per gallon by the end of FY 2005.

---

Executive Order No. 13149 also cancelled Executive Order No. 13031, “Federal Alternative Fueled Vehicle Leadership,” December 13, 1996.

**DoD Instruction 4715.4.** DoD Instruction 4715.4, “Pollution Prevention,” June 18, 1996, directed the Deputy Under Secretary of Defense (Installations and Environment) to:

- provide guidance, oversight, advocacy, and representation for environmental security pollution prevention programs;
- develop and promulgate environmental security pollution prevention goals and objectives, and approve measurements for attaining those goals and objectives; and
- integrate the DoD pollution prevention programs with other environmental, safety, and health programs.

In addition, it instructed that the Deputy Under Secretary of Defense (Logistics and Materiel Readiness), develop policy and guidance to incorporate pollution prevention into all logistics activities and ensure that all environmental compliance statutory and Executive Order requirements that apply to DoD non-tactical vehicles are properly reflected. Furthermore, DoD Instruction 4715.4 directed DoD Components to establish and execute a strategy to reduce emissions of pollutants by: acquiring AFVs, ensuring sufficient alternative fuels infrastructure, relying on commercial infrastructure when feasible, and planning placement of AFVs to maximize the effects on air quality.

**Defense Energy Support Center.** As a lead center of the Defense Logistics Agency, the Defense Energy Support Center provides energy support to DoD and other Government agencies with effective and comprehensive energy support. The support includes:

- worldwide bulk fuel logistics and maintenance;
- integrated materiel management of fuels; and
- repair and environmental management of nearly all owned fuel facilities worldwide for the U.S. Military Forces, U.S. Coast Guard, designated Federal agencies, and U.S. allies when approved.

**Defense Working Capital Fund.** The Defense Working Capital Fund is a revolving fund divided into business areas managed by DoD Components to provide goods and services to other activities within DoD and to non-DoD activities on a reimbursable basis. Customers pay stabilized prices for goods and services included in the fund, and the price for fuels includes costs for infrastructure maintenance. In general, fuels are managed by the Defense Energy Support Center, and are included within the DoD supply management business area of the Defense Working Capital Fund. The Under Secretary of

---

Defense (Comptroller), as the DoD Chief Financial Officer, authorizes the inclusion and terms of operation of specific activities in the Defense Working Capital Fund.

**AFV Working Group.** The DoD AFV working group coordinates issues regarding the DoD AFV program. The group is chaired by a representative from the Office of the Deputy Under Secretary of Defense (Installations and Environment), and includes representatives from the Services, the Defense Logistics Agency, and the Defense Energy Support Center. The group had primary responsibility for drafting the DoD compliance strategy for Executive Order No. 13149.

**Alternative Fuels.** The EPCA 1992 is a national policy and defines alternative fuels to achieve maximum inclusion (see Appendix B). This report discusses only alternative fuel vehicles. Therefore, for the purpose of this report, we limited the definition of alternative fuels to include only those bulk fuels that are used in vehicle fleets subject to EPCA 1992.

**Pentagon Motor Pool.** The Pentagon motor pool supports the Office of the Secretary of Defense, the Joint Staff, the U.S. Army, and the U.S. Air Force with a fleet of 107 vehicles. The Office of the Administrative Assistant to the Secretary of the Army is responsible for the operation of the Pentagon motor pool.

## Objectives

The overall objective was to determine whether the DoD AFV program, including alternative fuels management and infrastructure, fulfilled the requirements established by the Energy Policy Act of 1992 and Executive Order No. 13149. In addition, we determined whether the Pentagon motor pool reduced petroleum consumption through the use of AFVs and alternative fuels. We reviewed the management control program as it related to the overall objective. See Appendix A for a discussion of the audit scope, methodology, and prior coverage related to the audit objectives.

---

## Program Implementation

DoD has made limited progress in implementing an effective AFV program. DoD:

- did not meet the 75 percent AFV acquisition goals for FYs 2000 and 2001, acquiring 47 and 62 percent, respectively, and is not likely to meet the goal in FY 2002;
- had alternative fuels refueling capabilities on or near only 76 of about 5,300 operating sites nationwide and commercial alternative fuel facilities are insufficient to support the national AFV program;
- did not include alternative fuels within the total energy management of petroleum fuels, and until FY 2000, did not finance alternative fuels through the Defense Working Capital Fund; and
- had inadequate systems for tracking fuels usage for the DoD AFV program.

These conditions occurred because DoD had not developed and implemented a comprehensive program compliance strategy. As a result, DoD has not met the EAct 1992 goals for petroleum consumption reduction, has not realized benefits from pollution prevention initiatives, and compliance and reporting are inconsistent, inaccurate, and inadequate.

## Adequacy of AFV Program Components

The basic components of the DoD AFV program require management attention to achieve AFV and fuel reduction goals. DoD had insufficient AFV acquisitions, inadequate DoD and commercial alternative fuels infrastructure, inefficient means for managing and financing alternative fuels and alternative fuels infrastructure, and inadequate alternative fuels tracking systems.

**DoD Vehicle Acquisitions.** DoD had insufficient AFV acquisitions to meet the 75 percent acquisition goals set by EAct 1992. DoD Components spent over \$124 million for motor vehicle acquisitions during FY 2000, acquiring 18,911 light-duty vehicles for their fleets (8,099 subject to EAct 1992), of which 3,841 were AFVs. During FY 2001, DoD acquired 14,796 light-duty vehicles (7,073 subject to EAct 1992), of which 4,350 were AFVs. Consequently, DoD did not meet the 75 percent AFV acquisition goal for FYs 2000 and 2001, acquiring 47 percent and 62 percent, respectively. Prior Service Audit Agency reports identified this deficiency and recommended remedial actions. Table C-1 in Appendix C shows the AFV acquisitions by DoD Component for FYs 2000 and 2001. DoD projected the acquisition of approximately 5,000 AFVs during FY 2002, which probably will not meet the 75 percent AFV acquisition goal.

---

**DoD Alternative Fuels Infrastructure.** DoD alternative fuels infrastructure was inadequate to effectively support AFVs on installations. DoD had alternative fuels refueling capabilities on or near only 76 of about 5,300 sites nationwide. DoD Components had about 12,500 AFVs in their fleets. Table C-2 in Appendix C provides details on the DoD AFV fleets. Fleet managers reported they operated their AFVs on conventional fuel because there were no alternative fuels refueling stations in the area. The existing alternative fuels infrastructure is inadequate to effectively support the DoD AFV program, and responsible officials expect the problem to get worse.

**Commercial Alternative Fuels Infrastructure.** EPCRA 1992 encouraged agencies to arrange for the use of commercial alternative fueling facilities. However, the commercial infrastructure is insufficient to support a national AFV program. According to General Accounting Office Report No. RCED-00-59, "Energy Policy Act of 1992, Limited Progress in Acquiring Alternative Fuel Vehicles and Reaching Fuel Goals," February 2000, the number of alternative fuel refueling stations in the United States was drastically below the level necessary to support the EPCRA 1992 goals for fuel replacement. The report included a Department of Energy estimate that 60,000 to 69,300 alternative fuel stations were necessary to meet the EPCRA 1992 goals. However, the Department of Energy reported only 5,376 available commercial alternative fuel facilities, or less than 10 percent of the recommended requirement.

**Alternative Fuels and Alternative Fuels Infrastructure Management.** The Defense Energy Support Center provides DoD with total energy management of petroleum products, defined as:

- oversight of the entire fuel storage and distribution system from supplier to the ultimate consuming military activity; and
- central funding for petroleum facility maintenance, repair, and environmental management.

The Services continue to manage fuel infrastructure and budget for construction. However, alternative fuels were not included within the total energy management of petroleum fuels, and DoD had decentralized management of alternative fuels and alternative fuels infrastructure.

**Alternative Fuels and Alternative Fuels Infrastructure Funding.** DoD budgeting and financing of alternative fuels and alternative fuels infrastructure were inefficient. The Defense Energy Support Center procures alternative fuels for Components, but it does not provide total energy management of alternative fuels and alternative fuels infrastructure. Alternative fuels and alternative fuels infrastructure are not administered like petroleum fuels because they are not included in the Defense Working Capital Fund. Inclusion in the Defense Working Capital Fund requires the approval of the Under Secretary of Defense (Comptroller)/Chief Financial Officer. The Defense Energy Support Center

---

officials stated they could successfully budget for alternative fuels and alternative fuels infrastructure included in the Defense Working Capital Fund given appropriate funding and budget lead-time.

**Alternative Fuels Tracking System.** The DoD methods for determining and estimating alternative fuel consumption were inadequate to accurately track fuel usage. EPLA 1992 states that agencies shall:

- measure alternative fuel use in alternative fuel vehicles, and
- derive at least 50 percent of the alternative fuels used in vehicles acquired under EPLA 1992 from domestic feedstocks.

In addition, Executive Order No. 13149 states that a majority of fuel used in AFVs shall be alternative fuels by the end of FY 2005. The Services and the Defense Energy Support Center could effectively monitor alternative fuel consumption on DoD sites, but they could not accurately track alternative fuels purchased through the General Services Administration (GSA) wet-leases and Fleet Voyager credit cards.

**GSA Wet-Leases.** DoD Components acquired the majority of their alternative fuel vehicles through GSA. Many of these vehicles were leased through GSA wet-leases, which included maintenance and refueling costs within monthly lease payments. Bolling Air Force Base was unable to track alternative fuel consumption because fuel receipts were forwarded to GSA for bill payments.

**GSA Fleet Voyager Credit Card.** GSA generally used the Fleet Voyager credit card to purchase and track vehicle fleet fuel usage. Each vehicle was assigned a unique card, allowing managers to track and review petroleum purchases. However, the system could not differentiate between standard petroleum fuels and alternative fuels because both were listed under the same commercial vendor code. As a result, the Fleet Voyager credit card invoices identified diesel fuel while Pentagon motor pool fuel purchase receipts reported alternative fuel purchases. GSA is working with the commercial vendors to resolve this issue.

## **AFV Program Strategy**

**DoD Compliance Strategy.** In response to DoD Instruction 4715.4, the Services established AFV programs. The programs have been partially successful, most notably the Marine Corps program. The Services' approaches toward meeting the requirements of EPLA 1992 and Executive Order No. 13149 are also disjointed. Executive Order No. 13149 states that agencies shall meet the AFV acquisition requirements and prepare an agency strategy to meet the petroleum reduction goals and increase fuel economy ratings. In September 2000, the Department of Energy issued a guidance document, "The Federal Fleet Strategy Development Supplement," directing submission of detailed agency strategies for compliance with Executive Order No. 13149 by October 18, 2000. This document also

---

included guidance on data collection, results of agency strategy, and recognition and awards. In addition, the DoD strategy needs to address:

- identification of excess capacity in existing Component fuel infrastructure,
- development of an effective means for managing and financing alternative fuels and alternative fuels infrastructure, and
- implementation of a comprehensive alternative fuels tracking system.

On July 16, 2002, the Assistant Deputy Under Secretary of Defense (Environment) issued the “Department of Defense Compliance Strategy for Executive Order 13149: Alternative Fuel / Hybrid Vehicle Requirements.” Along with goals and reporting, the strategy discusses the conversion of duplicative infrastructure capacity and impediments to implementing a comprehensive fuel use tracking system.

**Existing Infrastructure for Conversion.** At the request of the Services, the Defense Energy Supply Center conducted fuel management optimization studies at 8 installations and had an additional 10 studies planned. These studies examined the total fuel requirement of installations and compared alternatives to determine the best method to provide cost savings to DoD, meet installation requirements, and modernize the fuel infrastructure. The studies normally resulted in the consolidation of fuel facilities thereby identifying facilities available for conversion to alternative fuels. The conversion of existing facilities creates alternative fuels infrastructure at a relatively low cost.

**Effective Fuels and Fuels Infrastructure Management and Funding.** DoD lacks integrated and centralized management of alternative fuels and alternative fuels infrastructure and an effective means for financing alternative fuels and alternative fuels infrastructure. The Defense Energy Support Center administered standard petroleum fuels but did not oversee alternative fuels and alternative fuels infrastructure. As a result, the Services had disjointed approaches to the procurement of alternative fuels and commercial alternative fuels infrastructure arrangements. Management of alternative fuels by the Defense Energy Support Center will provide the necessary visibility to perform centralized strategic planning for alternative fuels and alternative fuels infrastructure. In addition, alternative fuels and alternative fuels infrastructure were not included in the Defense Working Capital Fund. As a result, the Services had dissimilar methods for funding their AFV programs. Services funded alternative fuels infrastructure upgrades, conversions, and maintenance from facilities maintenance accounts, which have been under-funded. Treating alternative fuels in a similar manner to petroleum fuels, including use of the Defense Working Capital Fund, would provide an effective means for budgeting and financing alternative fuels and alternative fuels infrastructure maintenance, repair, and environmental compliance projects.

**Comprehensive Tracking System.** The Services had decentralized systems for tracking alternative fuel use, resulting in fragmented data and reporting. Also, installations were using dissimilar methods to track fuel usage in light-duty

vehicles. For example, Marine Corps Base Quantico used an electronic system that automatically downloaded dispensed fuel amounts, while the Pentagon motor pool used manual fuel records.

**Pentagon Motor Pool.** The Pentagon motor pool had a fleet of 107 vehicles, of which 60 were alternative fuel capable: 50 flex-fuel vehicles and 10 dedicated compressed natural gas vehicles. During FY 2000, 82 percent of vehicle acquisitions were AFV, satisfying the EPA's 1992 requirement. An alternative fuel refueling facility was located approximately 1 mile from the Pentagon motor pool. However, our review of the Pentagon motor pool gasoline and alternative fuel records from June 2001 through October 2001 determined that alternative fuel comprised only 16 percent of the fuel consumed in flex-fueled vehicles. Due to the inability to compare total amounts of fuels procured, managers were unaware of the problem. As a result, the Pentagon motor pool was not reducing petroleum consumption through the use of AFVs and alternative fuels. The following table summarizes Pentagon motor pool fuel usage in flex-fuel vehicles from June 2001 through October 2001.

<b>Pentagon Motor Pool Fuel Consumption in Flex-Fuel Vehicles From June Through October 2001</b> (in gallons)				
<u>Month</u>	<u>Gasoline Usage</u>	<u>Ethanol Usage</u>	<u>Total Fuel Usage</u>	<u>Alternative Fuel Usage</u>
June	2031.7	701.8	2733.5	26%
July	2130.6	570.0	2700.6	21%
August	2274.0	558.7	2832.7	20%
September*	1985.5	155.1	2140.6	7%
October	2691.0	184.7	2875.7	6%
<b>TOTAL</b>	<b>11112.8</b>	<b>2170.3</b>	<b>13283.1</b>	<b>16%</b>

\*During September, the ethanol refueling facility was inaccessible for part of the month.

A comprehensive alternative fuels tracking system would enable the Pentagon motor pool to easily determine alternative fuels consumption.

**Army Corrective Action.** Army regulations did not require alternative fuel use in AFVs. However, Army Audit Agency Report AA 01-276, "Alternative Fuel Vehicle Program," May 23, 2001, recommended that the Army revise Army Regulation 58-1 to provide details on requirements for major command and installation programs. The report projected that the revision will include a new facility policy for refueling AFVs. In response to the Army Audit Agency report, the Office of the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) and the Office of the Deputy Chief of Staff agreed to complete action by the first quarter of FY 2002. As of March 2002, the action was incomplete.

---

**Federal Automated Statistical Tool System.** The Federal Automated Statistical Tool system was developed by the Department of Energy to assist Federal agencies with data reporting requirements of EPAct 1992 and Executive Order No. 13149. The system was designed to capture alternative fuels consumption data for each fleet, but the Department of Energy stated that agencies have used estimates to determine fuel use, cost per mile, and actual fuel cost. Direct input into this system by GSA for wet-leased fleets and Fleet Voyager credit card purchases would allow DoD to accurately capture alternative fuel use.

**DoD-Wide Coordination.** As of April 2002, the AFV working group had completed a draft DoD compliance strategy. The Assistant Deputy Under Secretary of Defense (Environment) finalized the compliance strategy on July 16, 2002. The strategy included DoD-wide goals for achieving the vehicle acquisition, petroleum fuel reduction, and reporting requirements of EPAct 1992 and Executive Order No. 13149. The Under Secretary of Defense (Comptroller)/Chief Financial Officer should fully support implementation of the compliance strategy to include the authorization for the capitalization of alternative fuels that meet the inclusion criteria of the Defense Working Capital Fund.

## **Environmental Impact, Potential Benefits, and Compliance and Reporting Requirements**

**Petroleum Consumption Reduction.** DoD is not meeting legislative and administrative goals of reducing oil imports and petroleum consumption. Due to insufficient emphasis and support of the use of alternative fuels in light-duty motor vehicles, DoD has not realized improvements in fleet fuel efficiency and petroleum consumption through the use of AFVs and alternative fuels. In addition, DoD has not exercised leadership in the promotion of markets for alternative fuels and the encouragement of new technologies. The failure to acquire sufficient AFVs and supporting infrastructure has not enhanced national energy self-sufficiency and security.

**Pollution Prevention Benefits.** Pollution prevention initiatives exhibit DoD commitment to the environment. However, the AFV program has not achieved optimum benefits from pollution prevention initiatives. Three of the four installations visited were not operating their dual-fueled vehicles or flex-fueled vehicles on alternative fuels. For example, at Patuxent River Naval Air Station the compressed natural gas refueling facility was inoperative for an extended period of time, and the Air Station did not operate its AFVs on alternative fuel because the refueling facility was located about 60 miles from the installation.

**Compliance Liabilities.** DoD noncompliance with AFV and alternative fuel legislation generated potential compliance liabilities. Environmental activist groups filed a lawsuit in January 2002 against 18 Federal agencies, including DoD, for noncompliance with the provisions of EPAct 1992. The lawsuit concluded on July 26, 2002, with the court declaring that Federal agencies failed

---

to disclose AFV acquisition data to the public. This type of litigation against DoD generates negative publicity and has potential monetary impacts. Formulation and adoption of a comprehensive AFV compliance strategy and a program to increase alternative fuel use will reduce future compliance liabilities.

**Compliance and Reporting.** DoD compliance and reporting for EPC Act 1992 and Executive Order No. 13149 are inconsistent, inaccurate, and inadequate. DoD could not accurately determine if it will meet compliance and reporting requirements. Installations using GSA wet-leases or Fleet Voyager credit cards were forced to estimate alternative fuel use. Managers at the Pentagon motor pool were unaware of decreasing alternative fuel use because their manual fuel tracking process could not easily compare alternative fuel consumption to gasoline fuel consumption. Finally, DoD managers cannot rely on alternative fuel consumption figures to demonstrate program success or to estimate future requirements.

## Management Comments on the Finding and Audit Response

**Management Comments on Program Implementation.** The Director, Logistics Operations, Defense Logistics Agency stated that the Defense Energy Support Center purchases alternative fuels to the extent that alternative fuels are part of the Defense Working Capital Fund. He further stated that the Defense Logistics Agency and the Defense Energy Support Center had not specifically identified the need to invest in alternative fuels infrastructure, and that the national infrastructure for AFVs is not a DoD concern. The Director also stated that compressed natural gas requires a separate infrastructure in which they have no plan to invest.

**Audit Response.** We revised the report to clarify that fuels infrastructure funding provided by fuels capitalization does not include new construction. However, the Director, Logistics Operations should fund maintenance, repair, and environmental compliance infrastructure projects for compressed natural gas if included in the Defense Working Capital Fund.

## Recommendations, Management Comments, and Audit Response

**Revised Recommendations.** As a result of management comments, we revised Recommendation 1.a. to omit the term “infrastructure management,” and Recommendation 1.b. to specifically define the infrastructure funding associated with capitalized products. We deleted draft report Recommendation 1.c. since management actions addressed the issue and renumbered draft report Recommendation 1.d. to 1.c. Finally, we revised Recommendation 2. to reflect the role of the Under Secretary of Defense (Comptroller)/Chief Financial Officer in the AFV program.

---

**1. We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics develop and implement a comprehensive alternative fuel vehicle program compliance strategy that includes:**

**a. Authorization of alternative fuels management by the Defense Energy Support Center.**

**b. Capitalization of alternative fuels within the Defense Working Capital Fund and funding of maintenance, repair, and environmental compliance projects for existing infrastructure.**

**c. Implementation of a comprehensive uniform DoD tracking system for alternative fuel use.**

**Under Secretary of Defense for Acquisition, Technology, and Logistics Comments.** In a combined response, the Deputy Under Secretary of Defense (Installations and Environment) and the Assistant Deputy Under Secretary of Defense (Supply Chain Integration) partially concurred with the recommendations. They stated that the Defense Energy Support Center should continue to provide accounting and reporting on alternative fuels that it has capitalized for, biodiesel and ethanol (E85), which are consumed by the Services. The Defense Energy Support Center provides natural gas as a heating fuel but not compressed natural gas for use as an alternative fuel. They stated that the management of installation infrastructure is a responsibility of the Services, not the Defense Energy Support Center. However, the Defense Energy Support Center funds infrastructure maintenance, repair, and environmental compliance projects related to capitalized products. They also stated that the capitalization of either fuels or fuels infrastructure would not increase demand for alternative fuels. Capitalization of fuels infrastructure should be the last priority, due to the budgetary effects on flying and steaming hour programs. They agreed to continue the identification and conversion of existing infrastructure for alternative fuels use, and stated that the expected completion date for the analysis to identify high demand installations was November 2002. They stated that a new computer server system would allow comprehensive tracking through the military filling system, and that the General Services Administration was working with the Defense Energy Support Center to address the problem of tracking off base fuel purchases through commercial credit card systems.

**Defense Logistics Agency Comments.** Although not required to comment, the Director, Logistics Operations, Defense Logistics Agency nonconcurred, stating that the Defense Energy Support Center should be involved in acquisition and supply of alternative fuels, but not the building of new infrastructure that has no commercial or private sector counterpart. Defense Energy Support Center's first choice in any infrastructure project is to consider private sector contributions or alternatives to organic solutions. To the extent that promotion of alternative fuels is a "national" program, the Department of Energy should sponsor most aspects of

---

infrastructure development. The Director, Logistics Operations also stated that infrastructure capitalization is appropriate only for products that the Defense Energy Support Center is authorized to capitalize.

**Audit Response.** We consider the Deputy Under Secretary of Defense (Installations and Environment) and the Assistant Deputy Under Secretary of Defense (Supply Chain Integration) comments partially responsive. We acknowledge progress by the Deputy Under Secretary of Defense (Installations and Environment) on this program, including publication of the Executive Order 13149 Compliance Strategy in July 2002. Clearly, the success of the Department's internal effort in achieving the goals in the Comprehensive Strategy has significant implications for Federal compliance with the national strategy to reduce petroleum dependence. Acquiring vehicles capable of operating on alternative fuels and then operating them using petroleum-based fuels fails to maximize the Government's investment in those vehicles and slows DoD progress in achieving its goals for alternative fuels use. The lack of alternative fuels infrastructure, such as readily available refueling stations, contributes to the problem. We believe program success in near term is questionable unless these problems are addressed and Component program and fleet managers must be held accountable for meeting the goals on alternative fuels use. The Under Secretary of Defense for Acquisition, Technology, and Logistics must closely monitor Component programs and implementation to achieve compliance goals. New strategies may be needed to achieve program success, including legislative initiatives to resolve infrastructure impediments. We request that the Under Secretary of Defense for Acquisition, Technology, and Logistics provide additional comments on the recommendation. Since the recommendation was not directed to the Defense Logistics Agency, no additional comments are required from the Defense Logistics Agency.

**2. We recommend that the Under Secretary of Defense (Comptroller)/Chief Financial Officer fully support the DoD alternative fuels program and approve the management of alternative fuels within the limits of the Defense Working Capital Fund.**

**Under Secretary of Defense (Comptroller)/Chief Financial Officer Comments.** The Under Secretary of Defense (Comptroller)/Chief Financial Officer partially concurred with the recommendation. Two alternative fuels are included under Defense Working Capital Fund financing, and inclusion of additional fuels requires making a business case for economic feasibility. He stated that his office would review alternative fuels on a regular basis to ensure that those fuel types with a viable customer base are financed appropriately. He did not agree that the financing of alternative fuels through the Defense Working Capital Fund would result in additional infrastructure due to low sales volume.

**Defense Logistics Agency Comments.** Although not required to comment, the Director, Logistics Operations, Defense Logistics Agency stated that alternative fuels infrastructure does not belong in the Defense

---

Working Capital Fund. The alternative fuels program is an experimental program that belongs under the Department of Energy.

**Audit Response.** We consider the Under Secretary of Defense (Comptroller)/Chief Financial Officer comments responsive. We agree that capitalization will not lead to additional infrastructure and deleted the funding of infrastructure from the recommendation. Therefore, additional comments are not required on the revised recommendation.

---

## Appendix A. Scope and Methodology

The audit examined implementation of AFV policies and goals by the Services and the Defense Logistics Agency. We reviewed the alternative fuel vehicle program to determine whether DoD was meeting the requirements of EAct 1992 and Executive Order No. 13149. We interviewed Headquarters personnel from the Services and the Defense Logistics Agency, and reviewed the FY 2000 and FY 2001 acquisition and acquisition process for AFVs and alternative fuels infrastructure. In addition, we interviewed responsible personnel and reviewed the AFV programs at Naval Air Station Patuxent River, Marine Corps Base Quantico, Bolling Air Force Base, and the Pentagon motor pool.

Our original objective was to review the development and implementation of plans to fulfill the AFV acquisition requirement set by EAct 1992 and Executive Order No. 13031. Executive Order No. 13149 replaced Executive Order No. 13031 and endorses the AFV acquisition requirements of EAct 1992. In addition, Executive Order No. 13149 directs improvements in the use of AFV, alternative fuels, and fleet fuel efficiency. Prior audit coverage of Components' acquisition plans determined that DoD would not meet the AFV acquisition rate of 75 percent during FY 2001, and recommended remedial actions. Therefore, we focused the audit on the DoD AFV program, including alternative fuels management and infrastructure.

We performed this audit from June 2001 through April 2002 in accordance with generally accepted government auditing standards.

**Use of Computer-Processed Data.** We relied on computer-processed data from the Federal Automated Statistical Tool system only to identify vehicle acquisition report data. We did not evaluate the controls because the Federal Automated Statistical Tool system is administered by the Department of Energy. Not evaluating the controls did not affect the results of the audit because we did not rely on Federal Automated Statistical Tool data to reach our conclusions.

**General Accounting Office High-Risk Area.** The General Accounting Office has identified several high-risk areas in DoD. This report provides coverage of the DoD Infrastructure Management high-risk area.

### Management Control Program Review

DoD Directive 5010.38, "Management Control (MC) Program," August 26, 1996, and DoD Instruction 5010.40, "Management Control (MC) Program Procedures," August 28, 1996, require DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

**Scope of the Review of the Management Control Program.** We reviewed the adequacy of management controls over the DoD AFV program. Specifically, we

---

reviewed management controls over AFV inventory, AFV acquisitions, alternative fuel use, and compliance with statutory requirements. We reviewed management's self-evaluation applicable to those controls.

**Adequacy of Management Controls.** We identified material management control weaknesses for the DoD AFV program as defined by DoD Instruction 5010.40. DoD AFV management controls were not adequate to ensure compliance with statutory requirements. Our recommendation to the Under Secretary of Defense for Acquisition, Technology, and Logistics, if implemented, will assist DoD compliance with EPAct 1992 and Executive Order No. 13149. Improvements in tracking alternative fuel consumption, vehicle use, and efficient use of resources will enable management to make better decisions in determining compliance with statutory reductions in fuel consumption. A copy of the report will be provided to the senior official responsible for management controls in the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics.

**Adequacy of Management's Self-Evaluation.** DoD officials did not identify the DoD AFV program as an assessable unit and, therefore, did not identify or report the material management control weaknesses identified by the audit.

## **Prior Coverage**

### **General Accounting Office**

General Accounting Office Report No. RCED-00-59, "Energy Policy Act of 1992, Limited Progress in Acquiring Alternative Fuel Vehicles and Reaching Fuel Goals," February 11, 2000

### **Army Audit Agency**

U.S. Army Audit Agency Report No. AA 01-276, "Alternative Fuel Vehicle Program," May 23, 2001

### **Air Force Audit Agency**

Air Force Audit Agency Report No. WN099043, "Alternative Fuel Vehicles 56<sup>th</sup> Fighter Wing Luke AFB, Arizona," August 3, 1999

### **Inspector General, Air Force**

Air Force Inspector General Report No. PN 00-607, "Alternative Fueled Vehicle Program," July 20, 2000

---

## Appendix B. Glossary\*

**Alternative Fuel Vehicles.** Alternative fuel vehicles are dedicated vehicles or a dual-fueled vehicle.

**Alternative Fuels.** Alternative fuels are methanol, denatured ethanol and other alcohols, in mixtures of 85 percent or more (of such other percentage, but not less than 70 percent) by volume of methanol, denatured ethanol, and other alcohols with gasoline, or other fuels; natural gas; liquefied petroleum gas; hydrogen; coal-derived liquid fuels; fuels other than alcohols derived from biological materials; and electricity (including electricity from solar energy).

**Covered Person.** A covered person is a person that owns, operates, leases, or otherwise controls:

- a fleet that contains at least 20 motor vehicles that are centrally fueled or capable of being centrally fueled, and are used primarily within a metropolitan statistical area or a consolidated metropolitan statistical area; and
- at least 50 motor vehicles within the United States.

**Dedicated Vehicles.** Dedicated vehicles are motor vehicles that operate solely on alternative fuels.

**Dual-Fueled Vehicles.** Dual-fueled vehicles are motor vehicles that are capable of operating on alternative fuels and are capable of operating on gasoline or diesel fuel. These vehicles have one tank for gasoline and one tank for the alternative fuel.

**Fleet.** Fleet means a group of 20 or more light-duty motor vehicles used primarily in a metropolitan statistical area or consolidated metropolitan statistical area that are centrally fueled or capable of being centrally fueled and are owned, operated, leased, or otherwise controlled by a governmental entity or other person who owns, operates, leases, or otherwise controls 50 or more such vehicles, by any person who controls such person, by any person controlled by such person, and by any person under common control with such person, except that a fleet does not include:

- motor vehicles held for lease or rental to the general public;
- motor vehicles held for sale by motor vehicle dealers, including demonstration motor vehicles;
- motor vehicles used for motor vehicle manufacturer product evaluations or tests;
- law enforcement motor vehicles;
- emergency motor vehicles;

\*Obtained definition of terms from the EPA Act 1992 except for Dual- and Flex-Fuel Vehicles which were obtained from a U.S. Department of Energy web site.

- 
- motor vehicles acquired and used for military purposes that the Secretary of Defense has certified to the Secretary of Energy must be exempt for national security reasons;
  - nonroad vehicles, including farm and construction motor vehicles; and
  - motor vehicles, which under normal operations are garaged at a personal residence at night.

**Flex-Fueled Vehicles.** Flex-fueled vehicles are motor vehicles that can be fueled with gasoline or, depending on the vehicle, with either methanol or ethanol. These vehicles have one tank and can accept any mixture of gasoline and the alternative fuel.

**Light-Duty Vehicle.** Light-duty vehicles are light-duty trucks or light-duty vehicles of less than or equal to 8,500 pounds gross vehicle weight.

**Metropolitan Statistical Area.** Metropolitan statistical area is an area established by the Bureau of the Census with a 1980 population of more than 250,000.

## Appendix C. DoD Alternative Fuel Vehicle Program Statistics

Table C-1 shows the vehicle acquisition data for FY 2001 and FY 2000 for the Services and the Defense Logistics Agency. The information was obtained from the Office of the Deputy Under Secretary of Defense (Installations and Environment).

<b>Table C-1. DoD AFV Acquisitions</b>						
	<u>Army</u>	<u>Navy</u>	<u>USAF</u>	<u>USMC</u>	<u>DLA<sup>1</sup></u>	<u>Total</u>
<b>FY 2001</b>						
Light-Duty Acquisitions	8,000	2,647	2,410	1,609	130	14,796
Vehicles Acquired Subject to EPAAct 1992	4,000	1,207	1,311	433	122	7,073
AFV Acquisitions (including credits <sup>2</sup> )	2,455	880	601	341	73	4,350
AFV Percent of Acquisitions	<b>61%</b>	<b>73%</b>	<b>46%</b>	<b>79%</b>	<b>60%</b>	<b>62%</b>
<b>FY 2000</b>						
Light-Duty Acquisitions	9,137	4,924	2,855	1,570	425	18,911
Vehicles Acquired Subject to EPAAct 1992	4,000	1,867	1,408	430	394	8,099
AFV Acquisition (including credits <sup>2</sup> )	1,834	860	329	578	240	3,841
AFV Percent of Acquisitions	<b>46%</b>	<b>46%</b>	<b>23%</b>	<b>134%</b>	<b>61%</b>	<b>47%</b>
<b>Summary Totals</b>						
Light-Duty Acquisitions	18,796	7,571	5,265	3,179	555	35,366
Vehicles Acquired Subject to EPAAct 1992	8,000	3,587	2,719	863	516	15,685
AFV Acquisition (including credits <sup>2</sup> )	4,289	1,720	916	919	313	8,157
AFV Percent of Acquisitions	<b>54%</b>	<b>48%</b>	<b>34%</b>	<b>106%</b>	<b>61%</b>	<b>52%</b>
<sup>1</sup> Defense Logistics Agency						
<sup>2</sup> Agencies obtain additional credits for acquiring zero emission vehicles, or medium- or heavy-duty AFVs and through the use of biodiesel fuels.						

Table C-2 shows the total number of light-duty vehicles and the number of installations with alternative fuel refueling capabilities.

<b>Table C-2. DoD AFV Program Total</b>					
	<u>Army</u>	<u>Navy</u>	<u>USAF<sup>1</sup></u>	<u>USMC<sup>2</sup></u>	<u>DoD Total</u>
Vehicles on Hand					
Total Light-Duty Vehicles	35,799	23,268	32,457	7,575	<b>99,099</b>
Light-Duty Vehicles Subject to EPAAct 1992	N/A	17,814	22,056	2,663	<b>42,533</b>
Total AFV on hand	2,455 <sup>3</sup>	2,868	5,572	1,586	<b>12,481</b>
Installations with AFV Refueling Sites	9	21	30	13	<b>76<sup>4</sup></b>
<sup>1</sup> United States Air Force					
<sup>2</sup> United States Marine Corps					
<sup>3</sup> Includes only FY 2001 procurement					
<sup>4</sup> Service total equals 73, and the Defense Logistics Agency had 3 AFV Refueling Sites.					

---

## **Appendix D. Report Distribution**

### **Office of the Secretary of Defense**

Under Secretary of Defense for Acquisition, Technology, and Logistics  
Deputy Under Secretary of Defense (Installations and Environment)  
Under Secretary of Defense (Comptroller)/Chief Financial Officer  
Deputy Chief Financial Officer  
Deputy Comptroller (Program/Budget)

### **Department of the Army**

Auditor General, Department of the Army

### **Department of the Navy**

Naval Inspector General  
Auditor General, Department of the Navy

### **Department of the Air Force**

Assistant Secretary of the Air Force (Financial Management and Comptroller)  
Auditor General, Department of the Air Force

### **Other Defense Organizations**

Defense Logistics Agency  
Defense Energy Support Center

### **Non-Defense Federal Organizations and Individuals**

Office of Management and Budget  
General Services Administration  
Department of Energy

---

## **Congressional Committees and Subcommittees, Chairman and Ranking Minority Member**

Senate Committee on Appropriations  
Senate Subcommittee on Defense, Committee on Appropriations  
Senate Committee on Armed Services  
Senate Committee on Governmental Affairs  
House Committee on Appropriations  
House Subcommittee on Defense, Committee on Appropriations  
House Committee on Armed Services  
House Committee on Government Reform  
House Subcommittee on Government Efficiency, Financial Management, and Intergovernmental Relations, Committee on Government Reform  
House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform  
House Subcommittee on Technology and Procurement Policy, Committee on Government Reform

# Under Secretary of Defense for Acquisition, Technology, and Logistics Comments



OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3000

AUG 28 2002

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

THROUGH: DIRECTOR, ACQUISITION RESOURCES AND ANALYSIS

SUBJECT: Audit Report on DoD Alternative Fuel Vehicle Program  
(Project No. D2001CK-0132)

This memorandum forwards the combined response from the Deputy Under Secretary of Defense (Installations and Environment) and the Assistant Deputy Under Secretary of Defense (Supply Chain Integration) on the Inspector General's Draft Report on DoD Alternative Fuel Vehicle Program (Project No. D2001CK-0132).

We appreciate the opportunity to comment on this draft report. The report highlights many of the internal and external barriers facing DoD's alternative fuel/alternative fuel vehicle program. Over the last year, we have made significant progress in addressing these barriers. We created the DoD Alternative Fuel Work Group, completed the Executive Order 13149 Compliance Strategy (attached), increased our acquisition rate by 15% in FY01, recently received a favorable decision on the alternative fuel vehicle lawsuit, and continue to work closely with the General Services Administration on vehicle issues.

In most instances, we concur with the findings and believe they will help DoD in its continuing drive towards achieving its alternative fuel goals. Specific comments on your draft report are attached. Please consider these comments as you finalize your report.

Raymond F. DuBois, Jr.  
Deputy Under Secretary of Defense  
(Installations and Environment)

Attachments:  
As stated

**Audit Report on DoD Alternative Fuel Vehicle Program  
(Project No. D2001CK-0132)  
Management Response**

**Findings Comments:**

Pg. 4, Program Implementation—acquisition goal of 57% in 2001

- *Recommendation:* change 57% to 62%
- *Rationale:* Navy accomplished a detail review of the vehicle identification numbers and recalculated their alternative fuel vehicle (AFV) acquisition rate. The resulting increase in their rate raised the DoD rate to 62% in FY01—a 15% increase over FY00. We expect to meet the 75% acquisition rate no later than FY04.

Pg. 4, Program Implementation—alternative fuels (AF) refueling capabilities

- *Recommendation:* Add a reference to the 5,300 sites being located in both MSA and non-MSA areas.
- *Rationale:* The statement of 76 of 5,300 sites having AF infrastructure may be accurate, but is misleading. EPCAct, section 303, limits the its scope to fleets of 20 or more located in metropolitan statistical areas (MSAs). Less than half of DoD's annual non-tactical vehicle requirements fall under a MSA. Our approach is to gain the best results by providing AF to the large installations first, not as a percent of total sites. For non-MSA locations, the best approach is to use hybrid vehicles until commercial infrastructure is available. We've attached the list of MSAs.

Pg. 5, DoD Alternative Fuels Infrastructure

- *Comment:* Same comment concerning the number of AF sites.

Pg 6, DoD Compliance Strategy

- *Recommendation:* Add comment stating the strategy was signed out on Jul 16, 2002.
- *Rationale:* ADUSD(E) signed out the AFV strategy (attached) on Jul 16, 2002. It was loaded onto the Defense Environmental Network and Information Exchange web site and was also announced at the Federal Fleet 2002 meeting in Kansas

Revised

Added  
Page 7

City, July 24, 2002. The strategy encourages the Service to work with DESC to convert excess petroleum capacity to biofuel.

Pg. 7, Existing Infrastructure for Conversions

- *Comment:* Both DESC and the Services are performing an evaluation to identify excess (duplicate) fueling infrastructure. This evaluation will identify candidate locations for conversion to biofuel.

Pg. 9, DoD-Wide Coordination

- *Comment:* As stated earlier, the AFV compliance strategy was signed out to the field on Jul 16,, 2002. See previous strategy comment.

Pg. 9, Compliance Liabilities

- *Recommendation:* State that a favorable decision was reached on Jul 26, 2002.
- *Rationale:* The lawsuit concluded on Jul 26, 2002. It required the agencies to place their reports onto a web site and to identify it's location through a Federal Register announcement.

**Recommendations Comments:**

**Recommendation 1.a.:** Authorization of alternative fuels and alternative fuels infrastructure management by the Defense Energy Support Center (DESC).

- Concur with alternative fuels, given the following revision:

*Comment:* DESC should continue to provide, accounting and reporting on alternative fuels, which DESC has capitalized, that is biodiesel and E85, for and consumed by the Military Services currently.

*Recommendation:* For this audit, limit the definition of alternative fuels to only biodiesel (B20) and ethanol (E85).

*Rationale:* B20 and E85 are the two alternative fuels capitalized by DESC. DESC purchases and provides natural gas as a heating fuel but not Compressed Natural Gas (CNG) for use as an alternative fuel. The facilities engineer manages natural gas and electrical power at the installation level.

- Non-concur with alternative fuel infrastructure.

Added

Added

Added  
Page 3

Revised

---

*Comment:* Since the Military Services manage installation infrastructure, we do not believe that DESC should be required to capitalize Alternative Fuel (AF) infrastructure within the price of fuel because of the burden it places on the Military Services operations and maintenance budgets. DESC works with the Services to arrange commercial contract support for biodiesel and E85 alternative fuels and assists the Services to convert existing excess infrastructure (diesel or gasoline fuel storage tanks) to biodiesel and E85 alternative fuels use when the Services have an AF requirement.

**Recommendation 1.b.:** Capitalization of alternative fuels and alternative fuels infrastructure within the Defense Working Capital Fund (DWCF)

- Partially concur:

*Comment:* Capitalization of fuels authorized for DESC's acquisition and management has been implemented (biodiesel and E85). However, capitalization of these fuels does not drive demand for AF. Service requirements drive the demand. We do not believe the capitalization of either fuel or fuel infrastructure will produce the results desired by the IG.

*Recommendation:* In adopting a viable strategy, we believe that DoD's first priority would be to rely on existing infrastructure that could be converted because it permits facility conversion at a very low cost to DoD and the US taxpayers. The second choice would be use of the MILCON budget. This would require the Military Services to identify their requirements during the annual MILCON review process and identify AF facilities to DESC as a high priority. The last priority would be capitalization of AF facilities through the DWCF because of its affect on the Services' flying hour and steaming hour programs. Also see response to recommendation 1.a.

*Rationale:* Capitalization of mobility fuels is used to promote price stability for purposes of budgeting within the Military Departments. Nothing in the IG report indicates that price stability in alternative fuels is a barrier to procurement of these fuels by the Military Departments.

DESC currently does not manage "fuel infrastructure." It does fund maintenance, repair, and environmental projects related to capitalized products. It also funds modernization of fuels infrastructure, primarily through the DLA Military Construction (MILCON) program and through the minor construction budget. It does so based on priorities established by the Military Services. In the past, it has funded a very small number of fuel service contracts through the DWCF. Under these contracts, commercial investors construct and operate fuel distribution facilities on military installations. Because capitalization of fuels infrastructure places a burden on the Services' fuels budgets, which constrains military training and operations, only six

Revised  
Page 11

installations (seven fuel dispensing stations) have been funded in the last six years. Commercial viability is a necessary requirement before a project qualifies for capitalization within the DWCF for fuel service contracts. Only one new fuel service contract is under active consideration, and it is possible that only four more installations will qualify in the next six years. Therefore, we do not believe that infrastructure capitalization using the DWCF is a viable strategy for increasing the number of Alternative Fuel Vehicles in the DoD fleet. DESC is working with the Services to identify requirements and to also identify existing infrastructure that could be used for AF.

**Recommendation 1.c.:** Identification by the Services of excess capacity infrastructure available for conversion to alternative fuels.

- Concur.

*Comment:* The Services are already converting excess infrastructure to alternative fuels in a number of their installations. The Alternative Fuel Vehicle Working Group (AFVWG) is currently taking a structured approach to determine which installations provide the best results to DoD over the next three years. The AFVWG Service representatives have collected data on the number of non-tactical vehicles, by fuel type and fuel used, for individual CONUS installations. From this data, the AFVWG is selecting the high demand installations to focus their efforts on converting excess infrastructure, if available, or identify it for new infrastructure through DESC/commercial sector. The sorting and analysis process is expected to be completed by end of November 2002.

**Recommendation 1.d.:** Implementation of a comprehensive uniform DoD tracking system for alternative fuel use.

- Concur.

*Comment:* DESC is converting to the Fuels Automated System (FAS) Enterprise Server (FES) which will allow tracking of those items which DESC is authorized to acquire and manage (e.g. biodiesel and E85). However, the FAS system currently only tracks fuel dispensed through the military filling system. The Services lease a majority of their non-tactical fleet from GSA. GSA is addressing the problem of tracking DoD AF consumption through their commercial credit card systems. They are working with DESC to capture off base fuel purchases for GSA leased vehicles. Annual fuel usage is currently reported to the Department of Energy for inclusion in the Federal Automotive Statistical Tool database.

Deleted

Renumbered  
as Recommendation  
1.c.

---

**Recommendation 2:** We recommend that the Under Secretary of Defense (Comptroller) (USD(C)) approve the management and funding of alternative fuels and alternative fuels infrastructure in the Defense Working Capital Fund.

*Comment:* The Office of the Under Secretary of Defense (Acquisition, Logistics and Technology) defers to the USD(C) position.

Audit Report on DoD Alternative Fuel Vehicle Program  
(Project No. D2001CK-0132)  
AT&L Response  
Coordination Sheet

ADUSD, SUPPLY  
CHAIN INTEGRATION:

*Thomas O. Tyngh*  
Name

8/5/02  
Date

# Under Secretary of Defense (Comptroller)/Chief Financial Officer Comments

Final Report  
Reference

Final Report  
Reference



COMPTROLLER

UNDER SECRETARY OF DEFENSE  
1100 DEFENSE PENTAGON  
WASHINGTON, DC 20301-1100

AUG 7 2002

MEMORANDUM FOR INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE

SUBJECT: Audit Report on DoD Alternative Fuel Vehicle Program  
(Project No. D2001CK-0132)

You requested my comments on the subject audit. With regard to recommendation 2 that "USD(C) approve the management and funding of alternative fuels and alternative fuels infrastructure in the DWCF" I partially concur, with the following comments.

Two alternative fuels are already included under DWCF financing. Statements in the audit that DoD did not include alternative fuels within total energy management and did not finance alternative fuels infrastructure through the Defense Working Capital Fund (DWCF) are not correct. However, before additional alternative fuels could be financed through the DWCF, they must make a business case for a sufficient customer base. The DWCF operates as a business with sales to customers recovering all costs. If there is an insufficient business base for alternative fuels, DWCF is not the appropriate financing mechanism. The alternative fuels will be reviewed on a regular basis to ensure that those fuel types with a viable customer base are financed appropriately. However, there is no intention that all alternative fuels would be included in the DWCF unless it is economically feasible to do so.

In addition, the audit implies that financing alternative fuels in the DWCF would increase funding for infrastructure. The infrastructure for fuels provided through the DWCF is financed through the price of fuel sold. Given the low volume of alternative fuels sales, I do not agree that financing alternative fuels through the DWCF will result in additional infrastructure. On the contrary, alternative fuels infrastructure cannot be supported through sales and should be financed through other means. There is no economic basis for financing alternative fuels infrastructure through the DWCF.

Thank you for the opportunity to comment on the draft report. My point of contact is Mr. Tom Lavery, 703-697-4210.

A handwritten signature in black ink, appearing to read "D. Zakheim".

Dov S. Zakheim

Revised  
Page 4

**Technical Comments on Draft DoDIG Audit “DoD Alternative Fuel Vehicle Program**

The statement on page 4 under Program Implementation that “DoD did not include alternative fuels within the total energy management of petroleum fuels and did not finance alternative fuels and alternative fuels infrastructure through the Defense Working Capital Fund” is not correct. Two alternative fuels were added to those products financed through the Defense Working Capital Fund (DWCF) in recent years. Biodiesel was added in February 2000 and E85, an 85 percent mixture of ethanol and gasoline, was added in October 2000.

Revised

These alternative fuels were moved to financing in the DWCF in response to customer demand. Other alternative fuels are not funded in the DWCF because their demand is too low for efficient management or because there is difficulty in pricing the product. However, the Defense Energy Support Center still purchases other fuels as well, using customer money rather than DWCF financing based on customer demand.

The audit implies that if alternative fuels were to be financed within the DWCF, there would be more infrastructure funding. DWCF funding for DWCF infrastructure is generated through sales of DWCF financed products. The volumes of alternative fuels currently used would not generate significant investment money without intolerably high prices. Additionally, the Energy Policy Act of 1992 instructs federal agencies to arrange for the fueling of alternative fuel vehicles at publicly available fueling facilities to the maximum extent practicable. This direction minimizes federal agency investment in AFV fueling infrastructure.

Page 7 includes the statement that “Including alternative fuels and alternative fuels infrastructure within the DWCF would provide an effective means for budgeting and financing alternative fuels and alternative fuels infrastructure.” Given the number of alternative fuels and given their current usage volumes within Defense, this statement is overly broad and not correct. Two alternative fuels are included within the DWCF, but business assessments, in part based on volume, currently indicate that expansion to other alternative fuels is not appropriate. The DWCF is a business-based financing method.

Revised

The statement on page 9 that “the USD(C) should authorize alternative fuels and alternative fuels infrastructure within the DWCF” is overly broad for the reasons above. OUSD(C) has already authorized two alternative fuels, but not all alternative fuels, for inclusion in the DWCF.

Revised

Comment: First paragraph of page 1 says that DoD consumed 3.6 billion gallons of aviation, marine, and ground fuels in FY 2000. That is equivalent to 85.7 million barrels. Data available to this office indicates the correct number is closer to 107.7 million barrels. Of those numbers, less than 5 million barrels represent gasoline and diesel fuels.

Revised

# Defense Logistics Agency Comments



DEFENSE LOGISTICS AGENCY  
HEADQUARTERS  
8725 JOHN J. KINGMAN ROAD, SUITE 2533  
FORT BELVOIR, VIRGINIA 22060-6221

IN REPLY  
REFER TO J-3

JUL 19 2002

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING  
DEPARTMENT OF DEFENSE

SUBJECT: DoD Alternative Fuel Vehicle Program (Project No. D2001CK-0132)

This is in response to the subject draft report dated May 17, 2002. If you have any questions, please contact Mrs. Peggy Hayes, (703) 767-6262.

  
HAWTHORNE L. PROCTOR  
Major General, USA  
Director, Logistics Operations

Encl

**SUBJECT:** DoD Alternative Fuel Vehicle Program (Project No. D2001CK-0132)

**EDITORIAL COMMENTS:**

**IG Report: Alternative Fuels and Alternative fuels Infrastructure Funding (Last sentence, Pg 5)**

The Defense Energy Support Center officials stated they could successfully budget for alternative fuels and alternative fuels infrastructure given appropriate budget lead-time.

**DLA COMMENT:**

Sentence should read “The Defense Fuel Energy Support Center officials stated they could successfully budget for E-85 and Bio Diesel fuels infrastructure given appropriate funding and budget lead time.”

**IG Report: Existing Infrastructure for Conversion (Pg 7, Next to last sentence in paragraph)**

A secondary result of the studies was the identification of duplicate fueling facilities at the installation available for conversion to alternative fuels.

**DLA COMMENT:**

Recommend deleting this sentence and substituting: “These studies examine the total fuel requirement for installations and determine the most efficient fuel delivery methodology. The Status Quo is compared to alternatives to determine which method of support provides a potential cost savings to DoD, meets war fighter's requirements, and modernizes the installations fuel infrastructure. The studies normally result in the consolidation of several fuel facilities into central distribution points where the requirement can be met at a reduced total cost. Currently, these studies are not universally programmed for all installation fuel facilities and would only provide a limited/localized solution.”

Revised  
Pages 5-6

Revised

**Attachment:**

**Comments on DoD Alternative Fuel Vehicle Program  
(Project No. D2001CK-0132)**

**Finding: Program Implementation (Report Page 4)**

DoD has made limited progress in implementing an effective AFV program. DoD:

- did not meet the 75 percent AFV acquisition goals for FYs 2000 and 2001, acquiring 47 and 57 percent, respectively and is not likely to meet the goal in FY 2002;
- had alternative fuels refueling capabilities on or near only 76 of about 5,300 operating sites nation wide and commercial alternative fuel facilities are insufficient to support the national AFV program;
- did not include alternative fuels within the total energy management of petroleum fuels and did not finance alternative fuels and alternative fuels infrastructure through the Defense Working Capital Fund; and
- had inadequate systems for tracking fuels usage for the DoD AFV program

These conditions occurred because DoD had not developed and implemented a comprehensive program compliance strategy. As a result, DoD has not met the *Energy Policy Act of 1992 (EPA)* goals for petroleum consumption reduction, has not realized benefits from pollution prevention initiatives, and compliance and reporting are inconsistent, inaccurate, and inadequate.

**DLA COMMENTS:**

- DLA purchase/lease of AFVs—[should obtain from DSS]
- DLA/DESC support of alternative fuel.
  - DESC purchases alternative fuels to the extent they are part of the Defense Working Capital Fund (e.g., biodiesel and E85, but not CNG) and customers provide requirements.
  - DLA and DESC have not specifically identified the need to invest in alternative fuel infrastructure. Given the limited mission funds for construction, DESC will continue to rely on the private sector to establish the required alternative fuel infrastructure. Even if DLA were to establish projects to build alternative fuel facilities at facilities we control, there would only be a handful of additional facilities built—barely sufficient to support AFVs in the local driving area, and no practical value in expanding the “5,300 operating sites nation wide.” The national infrastructure for AFVs is not a DoD concern. If any cabinet agency has such a concern, it would be the Department of Energy to whom these issues would better be addressed.
  - CNG requires an entirely separate infrastructure in which DLA has no plans to invest. For CNG to be viable, AFVs that use CNG must be dual-fuel vehicles. Limited numbers of refueling points throughout the U.S. make CNG investments particularly poor ones.

Added  
Page 5

**SUBJECT:** DoD Alternative Fuel Vehicles (Project NO. D2001CK-0132)

**IG Report: Recommendations (Page 10)**

RECOMMENDATION 1: We recommend that the Under Secretary of Defense for Acquisition, Technology, and Logistics develop and implement a comprehensive alternative fuel vehicle program compliance strategy that includes:

- a. Authorization of alternative fuels and alternative fuels infrastructure management by the Defense Energy Support Center.
- b. Capitalization of alternative fuels and alternative fuels infrastructure with the Defense Working Capital Fund.
- c. Identification by the Services of excess capacity infrastructure available for conversion to alternative fuels.
- d. Implementation of a comprehensive uniform DoD tracking system for alternative fuel use.

RECOMMENDATION 2: We recommend that the Under Secretary of Defense (Comptroller) approve the management and funding of alternative fuels and alternative fuels infrastructure in the Defense Working Capital Fund.

**DLA COMMENTS:**

**Recommendation 1:**

- a. **Non-concur.** DESC should be involved in acquisition and supply of alternative fuels, but not the building of new infrastructure that has no commercial and private sector counterpart. DESC's first choice in any infrastructure project is to consider private sector contributions or alternatives to organic solutions. Here we have the reverse and we disagree. To the extent that the promotion of alternative fuels is a "national" program, the Department of Energy should sponsor most aspects of infrastructure development.
- b. **Non-concur.** Capitalization of fuels authorized for DESC's acquisition and management can be implemented. Infrastructure capitalization is appropriate only for those products which DESC is authorized to capitalize (e.g., Biodiesel and E85, but not CNG).
- c. **No comment.** The Services should address this item.
- d. **No comment.** OSD and the Services would need to develop such a system unless and until all the reportable items were DESC-managed.

**Recommendation 2: Non-concur.** We do not believe that alternative fuel infrastructure belongs in the DWCF. By definition the DWCF supports current operations. The use of alternative fuels is an experimental program which—merit aside—belongs (if anywhere) under the Department of Energy as the responsible cabinet agency.

Revised  
Page 11

Revised  
Page 11

Deleted  
Renumbered  
as Recommendation  
1.c.  
Revised  
Page 12

## **Team Members**

The Contract Management Directorate, Office of the Assistant Inspector General for Auditing of the Department of Defense prepared this report. Personnel of the Office of the Inspector General of the Department of Defense who contributed to the report are listed below.

Garold E. Stephenson  
William C. Gallagher  
George P. Marquardt  
Linh Truong  
John Petrucci  
Michael Loos