DOE/IG-0553

AUDIT REPORT

ALTERNATIVE FUELS USE AT THE DEPARTMENT OF ENERGY

MAY 2002

U.S. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL
OFFICE OF AUDIT SERVICES

U. S. DEPARTMENT OF ENERGY
Washington, DC 20585

May 2, 2002

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman (Signed)
Inspector General

SUBJECT: INFORMATION: Audit Report on "Alternative Fuels Use at the Department of Energy"

BACKGROUND

Since the 1970s, various strategies have been pursued to address concerns relating to U.S. dependence on foreign petroleum. The Department of Energy, by virtue of its mission, has been designated as a leader in this endeavor. As one element of its effort, the Department has set goals, based on statutory requirements, for replacing its own use of petroleum-based motor fuels with alternative fuels, such as compressed natural gas, propane, ethanol, bio-diesel, and electricity. These goals include:

- Reducing its petroleum consumption by 20 percent by the year 2005; and,
- Acquiring and using light-duty vehicles that operate on alternative fuels.

Clearly, the success of the Department's internal effort has significant implications for the national strategy in this arena. The objective of our audit was to determine whether actions taken by the Department will contribute to reaching its own alternative fuels goals.

RESULTS OF AUDIT

We found that the Department had essentially satisfied its objective of acquiring vehicles capable of operating on alternative fuels. The audit disclosed, however, that many of these vehicles were, in fact, still being operated using petroleum-based motor fuels. Thus, the Department had not made satisfactory progress in reaching its goals for alternatives fuels use. Driver resistance and market conditions contributed to these results. The current lack of alternative fuels infrastructure, such as readily available filling stations, contributed to the problem. Under the circumstances, program success in the near term is highly questionable.

We recommended that the Department adopt a series of specific actions to increase the use of alternative fuels in Department vehicles. To the extent that current goals are unrealistic, impractical, or economically inefficient, we recommended that the Department develop new strategies for achieving program success. In our view, this might require certain legislative initiatives.

In making these recommendations, we were mindful of the analysis which led to your January 2002 announcement regarding a new partnership between the Department and auto manufacturers to promote the development of hydrogen fuel cell technology through the Freedom CAR program, and the corresponding announcement that the Department was ending its participation in the Partnership for a New Generation of Vehicles (PNGV). The Office of Inspector General and others had previously concluded that the PNGV program was not making sufficient progress toward producing an economically competitive automobile. In our view, a similar critical evaluation should be made of the Department's alternative fuels program.

MANAGEMENT REACTION

Management stated that it had already taken actions to meet petroleum replacement goals, but recognized that there was room for improvement. To that end, management concurred with our recommendations and proposed corrective actions to implement them. While we consider the actions taken to date and planned corrective actions to be positive steps, the Department must closely monitor implementation activities if it is to meet the Presidential and Congressional goals for reducing petroleum dependence. Detailed management and auditor comments are discussed in the body of the report.

Attachment

cc: Chief of Staff
Under Secretary for Energy, Science and Environment
Administrator, National Nuclear Security Administration
Assistant Secretary, Energy Efficiency and Renewable Energy

ALTERNATIVE FUELS USE AT THE DEPARTMENT OF ENERGY

TABLE OF CONTENTS

OVERVIEW

INTRODUCTION AND OBJECTIVE

The United States (U.S.) transportation industry is almost completely dependent on petroleum for its energy supply. Today, about 95 percent of our nation's transportation energy needs are met by petroleum products – primarily gasoline and diesel fuel – and the transportation sector accounts for two-thirds of all the petroleum used in the U.S. One significant strategy aimed at reducing petroleum use in the transportation industry is to increase the use of alternative fuels, defined as fuels that are substantially non-petroleum and yield energy security and environmental benefits. Such products include compressed natural gas, propane, ethanol, bio-diesel, and electricity, all of which are available from domestic suppliers.

Over the past several years, statutes, Executive Orders, and Department guidance documents have provided specific goals for displacing a portion of petroleum based motor fuels with alternative fuels. These goals include (1) reducing the Department's petroleum consumption by 20 percent by the year 2005; (2) assuring that 75 percent of new light-duty vehicles the Department acquires in major metropolitan areas operate on alternative fuels and that such fuels are used in those vehicles at least 75 percent of the time by 2005 and 90 percent of the time by 2010; and, (3) replacing, for the nation as a whole, 10 percent of petroleum motor fuels with alternate fuels by 2000 and 30 percent by 2010.

The Office of Energy Efficiency and Renewable Energy has overall responsibility for establishing programs and guidelines that will encourage and enable the use of alternative fuels. The objective of our audit was to determine whether actions taken by the Department, a designated leader in promoting the use of alternative fuels, will contribute to reaching its own mandated alternative fuels goals.

CONCLUSIONS AND OBSERVATIONS

Despite some successes, the Department is not making significant progress in its efforts to increase the use of alternative fuels. Current usage rates do not approach intended displacement goals and significant infrastructure and economic impediments make the achievement of these goals in the foreseeable future doubtful. We found that the Department had not established a comprehensive plan to address and overcome obstacles to more widespread use of alternative fuels. Without such a plan, the Department's ongoing investments in alternative fuels may not create sufficient momentum to achieve significant petroleum displacement in the nation as a whole.
We recommended that the Assistant Secretary for Energy Efficiency

and Renewable Energy, working with the Department's other program offices, adopt a series of specific actions aimed at enhancing its strategy for petroleum reduction at Department sites. We also recommended that the Department work with the legislative branch and other interested parties to formulate more realistic and achievable programmatic outcomes.

During the audit, we noted a number of positive initial steps toward greater use of alternative fuels. For instance, Lawrence Berkeley National Laboratory was regularly using 22 electric vehicles, and the National Energy Technology Laboratory (NETL) in Pittsburgh, PA, had an aggressive program to ensure that its compressed natural gas cars were frequently filled with that fuel. Additionally, the Department projected that the "Clean Cities" program, where the Department partners with cities to develop local alternative fuel markets, would lead to the purchase of 186,000 alternative fuel vehicles and the displacement of 18 million barrels of petroleum over an 8-year period. Finally, the Department reported that nationally, the number of alternative fuel vehicles has increased from 250,000 to 450,000 since 1992.

As we noted in our report on *Management Challenges at the Department of Energy* (DOE/IG-0538, December 2001), maintaining an adequate energy supply for economic and national security is of paramount importance. In that report, we designated energy supply issues as among the most important challenges the Department faces.

This audit identified issues that management should consider when preparing its year-end assurance memorandum on internal controls.

(Signed)
Office of Inspector General

THE DEPARTMENT'S ALTERNATIVE FUELS PROGRAM

Petroleum Displacement

Since 1992, the Department has undertaken a number of initiatives aimed at increasing the use of alternative fuels within its own vehicle fleets. As of September 30, 2000, for example, the Department had acquired 1,777 alternative fuel vehicles at 37 different locations, representing 11 percent of its fleet. Furthermore, the Department's current vehicle acquisition strategy was consistent with the requirement that at least 75 percent of new vehicles have the capability to use alternative fuels. At the time of our audit, however, alternative fuels displaced only a small fraction of the petroleum used Department-wide. In Fiscal Year (FY) 2000, the Department used about 77,000 gasoline gallon equivalents (GGE) of alternative fuels, representing just 1.4 percent of its total fuel usage of over 5.7 million gallons.

In order to meet its goal of displacing 20 percent of petroleum needs, the Department plans to increase alternative fuel use from 77,000 GGE to over 1.2 million GGE by 2005. To foster the accomplishment of this goal, the Department adopted a strategy focusing on 16 locations with large vehicle fleets. We visited six of those locations, and found that five faced significant impediments to greater alternative fuels usage. Collectively, the six sites used only about 9,000 GGE in 2000 but must increase their usage to over 740,000 GGE over the next few years, as shown on the table below.

Actual and Planned Alternative Fuels Use at Selected Department Sites (in GGE)

Facility	2000 Actual	2005 Planned	Significant Impediments
Nevada Test Site	313	385,875	No CNG infrastructure
Lawrence Livermore National Laboratory (Livermore)	761	165,585	Outdated CNG infrastructure
Los Alamos National Laboratory (Los Alamos)	4,893	72,075	Insufficient ethanol infrastructure for expected demand
Sandia National Laboratory	0*	71,160	Inadequate/ inaccessible CNG infrastructure
Lawrence Berkeley National Laboratory (Berkeley)	476	43,783	No CNG infrastructure
National Energy Technology Laboratory (Pittsburgh)	2,846	4,635	None
TOTAL	**9,289**	**743,113**	

*Although Sandia had some CNG usage in FY 2000, it could not adequately track that usage and did not enter an amount in the Department's fuel consumption database.

Specific examples of problems we found included the following:

- The Nevada Test Site has over 300 compressed natural gas and ethanol vehicles. While a few of these vehicles are operated in Las Vegas where there is access to the alternative fuel required, most are at least 65 miles away at the Test Site where there are no alternative fuel pumps. In addition, responsible fleet managers at Nevada told us they have no plans to build the required refueling infrastructure because to do so in the Test Site's remote location would be too costly. While Nevada plans greater use of bio-diesel, which is more readily available, site officials told us it is unrealistic to assume that the site will displace 385,000 GGE of petroleum with other alternative fuels, as called for in the Department's strategy.

- At Sandia National Laboratories (Sandia), users were instructed to use on-site compressed natural gas pumps only in an emergency. For normal refueling they were advised to use pumps on the co-located U.S. Air Force site, which according to site officials were frequently out-of-service. Additionally, the Department is not planning any additional refueling infrastructure at Sandia.

- The Los Alamos National Laboratory's (Los Alamos) use of alternative fuels is supposed to increase from 4,893 GGE to over 72,000 GGE through the use of ethanol-fueled vehicles. However, Los Alamos officials told us that such an increase was unlikely because there was only one available ethanol pump, at a commercial gas station near the site. Los Alamos had no plans for additional ethanol fueling facilities, and officials were concerned that the ethanol pump would not be sufficient to fuel its planned fleet of 310 vehicles.

At five of the sites, we also interviewed users of a statistically selected sample of alternative fuel vehicles. Based on these interviews, we concluded that driver acceptance is an additional impediment to increased alternative fuel use at most sites. A significant number of users told us, for example, that they preferred not to use the alternatives because refueling was inconvenient or because vehicle range was limited. Several users also expressed uncertainty about how to refuel. We concluded that, given a choice, users would continue to use petroleum in their vehicles and not the alternative fuel.

In some cases, the Department's strategy recognized that infrastructure impediments, as well as driver acceptance issues, existed and must be overcome. For the sites we visited, however, the strategy did not sufficiently detail how impediments and conflicts such as those noted above would be resolved.

The Office of Inspector General recognizes that the Department has additional options for decreasing its use of petroleum fuels, including the acquisition of higher fuel economy vehicles, and fleet efficiency improvements. However, as currently configured, the Department's fuel displacement strategy relies heavily on projected increases in the use of alternative fuels. At best, the attainment of these increases will be problematic given the unresolved infrastructure impediments and user resistance.

Petroleum Displacement Requirements and Goals

Displacement criteria were established in legislation, by Executive Order and by Department policy. The Energy Policy Act (EPAct) of 1992 set goals for displacing 10 percent of the nation's petroleum fuels by 2000 and 30 percent by 2010. To help meet these goals, the EPAct required that certain percentages of new light-duty vehicle acquisitions by Federal agencies (75 percent), State governments (75 percent), and fuel providers (90 percent) be alternative fueled vehicles. Executive Order 13149, established in April 2000, set a goal for reducing the Federal government's petroleum use by 20 percent, as compared to 1999 levels, by 2005 and required each Federal agency to develop a strategy to achieve this reduction goal. Additionally, agencies were required to operate alternative fuel vehicles on alternative fuels a majority of the time. In November 1999, the Secretary required that within the Department, alternative fuels should account for at least 75 percent of total fuel usage in alternative fuel vehicles by 2005 and 90 percent by 2010.

The EPAct also assigned leadership responsibilities to the Department. For example, under certain circumstances indicating that the EPAct is not achieving intended objectives, the Department is to make recommendations to Congress for new requirements or incentives better suited to increasing the nation's use of alternative fuels.

The Government Performance and Results Act of 1993 required agencies to focus their programs on results. As such, agencies were to

prepare annual performance plans that included, for each program activity, performance measures and comparisons to previous program outcomes. This approach was re-emphasized in the President's FY 2002 Management Agenda, which stressed that Federal programs should have well-defined, measurable performance indicators and should, above all, deliver results.

Petroleum Displacement Approach

The Office of Energy Efficiency and Renewable Energy prepared the Department's compliance strategy for Executive Order 13149 in June 2001. While the strategy generally outlines a multi-faceted approach to displacing petroleum within the Department's vehicle fleets, it is not sufficiently specific or complete to ensure programmatic success. Problems included the following:

- Lack of specificity. The strategy includes a "basic assumption" that activities will be undertaken to ensure alternative fuel vehicles use alternative fuels 75 percent of the time on average. Such activities, however, are not defined, described, or specifically required. As we noted, most sites do not use significant quantities of alternative fuels even though large numbers of vehicles have been acquired.

- Lack of accountability. Department fleet managers, according to the strategy, "will be held responsible for meeting and maintaining the 75 percent alternative fuel use requirement." No indication is given, however, as to how the Department will measure fleet managers' success or hold them accountable for not meeting goals.

- Reliance on unrealistic assumptions. A key success factor noted is "commitment by vehicle operators to using alternative fuels a substantial part of the time." We agree that such commitment is necessary. Our interviews with vehicle operators at five sites led us to conclude, however, that even well-intended Department employees will not generally use alternative fuels unless they receive, at a minimum, better information and training about vehicle operation and refueling. Even with such additional information, it is not clear that operators will use alternative fuels unless required to do so.

- Incomplete resolution of infrastructure impediments. The strategy assumes that total costs for additional refueling infrastructure will be about $2.7 million, covering 11 sites that need such improvements. Of that amount, $500,000 is designated for a compressed natural gas station at the Nevada Test Site. Nevada officials told us, however, that because of additional equipment and logistical concerns required by their site's remoteness, costs would be at least $1 million for 1 CNG station. Further, Nevada has no plans to proceed with the refueling infrastructure and indicated that they may need two rather than the one proposed refueling station to attain 50 percent CNG usage, which is still below the strategy's anticipated 75 percent usage. Without the Test Site's full participation, the Department's replacement strategy is unlikely to succeed.

The May 2001 *Report of the National Energy Policy Development Group* echoes some of the conclusions we reached based on our audit. The Policy Development Group stated that:

> The [alternative fuels program] focused on mandating that certain fleet operators purchase alternative fueled vehicles. The hope was that this vehicle purchase mandate would lead to expanded use of alternative fuels. That expectation has not been realized, since most fleet operators purchase dual-fueled vehicles that operate on petroleum motor fuels.

Given the continuing need for the Department and the nation to implement a comprehensive energy strategy, now is an opportune time, in our judgment, for the Department to re-evaluate its strategies for achieving success in the alternative fuels program. Such an effort should include opportunities to overcome long-standing impediments and, if necessary, to work with the legislative branch and other interested parties to promulgate more realistic and achievable outcomes.

Benefits of a More Effective Program

Resolving impediments to the Department's in-house strategy is important for a number of reasons. Ensuring that alternative fuel vehicles are filled with alternative fuels a majority of the time, for example, maximizes the Department's investment in those vehicles. A Chevrolet Cavalier compressed natural gas sedan, commonly acquired

by the Department, costs $5,400 more than the same model that uses only gasoline. The extra cost obviously provides no benefit if the alternative fuel is not used.

More importantly, by overcoming barriers to its own use of alternative fuels, the Department can exercise a more credible leadership role in creating momentum for significant petroleum displacement in the nation as a whole. Nationally, the use of alternative fuels has lagged far behind congressionally established goals. The EPAct assigned the Department a leadership role in attaining 10 percent petroleum displacement by 2000 and 30 percent by 2010. Actual usage, however, has consistently been just under 3 percent since 1995 and has been primarily attributed to additives blended with petroleum products, rather than alternative fuels. Even relatively successful Department initiatives, such as the Clean Cities program, have done little to change alternative fuel usage as a percentage of total energy consumption.

It is not our intent that the Department force compliance with program goals if market conditions and other institutional impediments made the achievement of those goals unrealistic or inefficient. Rather, the Department should identify and promote certain best practices for achieving current goals, but at the same time not hesitate to identify instances where program implementation will not achieve the desired outcomes.

For example, both the Department and the Energy Policy Development Group concluded that other approaches to alternative fuels, including expanded incentives for purchasing alternative fuels or vehicles, and for building infrastructure, might increase program effectiveness. During our review officials from the Department, other government agencies, and the private sector opined that the EPAct needed to be reviewed and modified to reflect current technology advancements. As an example, hybrid vehicles, which operate part of the time on petroleum and part of the time on electricity and which have enjoyed some acceptance in the market place, are not recognized under the Act even though they reduce petroleum use. The EPAct allows the Department to submit recommendations to Congress for new requirements or incentives to better achieve petroleum displacement goals.

RECOMMENDATIONS

We recommend that the Assistant Secretary for Energy Efficiency and Renewable Energy:

1. Develop and implement enhancements to the Department's approach to the use of alternative fuels within its own light vehicle fleets. Such enhancements should include:

   a. Specific actions that will be undertaken to ensure that operators use alternative fuels in alternative fuel vehicles 75 percent of the time on average;

   b. Specific measures that will be used to hold fleet managers accountable for alternative fuel use;

   c. Educational and informational programs for alternative fuel vehicle operators;

   d. Complete discussion, and action plans for resolution, of infrastructure impediments to alternative fuel usage goals; and,

   e. Performance measures that will allow the Department to accurately gauge its progress toward achieving displacement goals.

2. Explore, in cooperation with the Congress and other stakeholders, an enhanced approach to a national alternative fuels program that includes greater focus on incentives for purchases and investments in alternative fuels, vehicles, infrastructure, and emerging technologies. Such a program should also include more realistic goals and measures of success.

MANAGEMENT REACTION

In written comments to a draft of this report, the Assistant Secretary for Energy Efficiency and Renewable Energy stated that he believed the Department had taken sufficient actions to meet petroleum replacement goals but recognized that there was room for improvement. Specifically, management believed that its strategy accounted for impediments and conflicts related to meeting the petroleum replacement goals. Management stated that the strategy was concurred on by Headquarters organizations and field elements and that all comments were resolved to the satisfaction of the commenting organizations.

In relation to the recommendation on the national alternative fuels program, management cited many activities taken in relation to EPAct and stated that the recommendation was consistent with actions already taken by the Secretary. However, they concurred that the EPAct needs to be reviewed and modified.

Management's comments on the report and the specific actions taken and planned, including funding shifts, proposals for fleet manager accountability and recognition, a modest driver education program, and EPAct review, are detailed in their entirety in Appendix 3.

AUDITOR COMMENTS

While we consider the actions taken and planned to be positive steps, we do not believe that the Department's strategy has adequately accounted for impediments to meeting petroleum replacement goals. Specifically, the strategy has not fully identified infrastructure requirements for or other impediments to achieving fuel use goals. As stated in our report, sites were either not planning to build the infrastructure or the proposed facilities were insufficient to meet the fuel use goals. While each site we visited was taking some actions to reduce petroleum consumption, only one site was planning to implement the entire plan for its location.

Despite the concurrence process on the strategy, the disconnect between the Departmentwide strategy and the field sites' implementation has not been adequately resolved. Without substantial participation by all identified field sites, the Department cannot meet the petroleum reduction goals. Management's proposed actions will not alleviate these impediments because they involve more than funding issues. We believe impediments must be examined from a site-level perspective and that complete discussion and detailed action plans are necessary to successfully resolve those impediments. In addition, the Department needs to develop specific annual performance measures to evaluate program performance in replacing petroleum.

For the nation as a whole, we agree that the Department has laid the groundwork for assisting in the replacement of petroleum consumption with the use of alternative fuels. However, further actions are necessary to realize the EPAct objectives. In particular, the Department needs to fully analyze incentives and alternatives and provide specific recommendations to Congress that will help implement a comprehensive national petroleum replacement strategy.

APPENDIX 1

SCOPE

We conducted the audit from June 2001, to January 2002, at Department of Energy Headquarters in Washington, DC; the National Energy Technology Laboratory in Pittsburgh, PA; Nevada Test Site, Las Vegas, NV; Sandia National Laboratory, Albuquerque, NM; Los Alamos National Laboratory, Los Alamos, NM; Lawrence Berkeley National Laboratory, Berkeley, CA; and Lawrence Livermore National Laboratory, Livermore, CA. We also interviewed officials from the following organizations:

Federal Government

General Services Administration
National Aeronautics and Space Administration
Environmental Protection Agency
Department of Transportation
Department of Agriculture
Department of Health and Human Services
U.S. Postal Service

Alternative Fuel Vehicle Organizations and Coalitions

Natural Gas Vehicle Coalition
Electric Vehicle Association of the Americas
Propane Vehicle Council
U.S. Fuel Cell Council
American Public Transportation Association

METHODOLOGY

To accomplish the audit objective, we:

- Reviewed regulations and Department policies and guidance related to petroleum replacement and reduction;
- Interviewed Department of Energy, other Federal government, and alternative fuel organizations and coalitions to determine successes and impediments these organizations have encountered in implementing an effective alternative fuel vehicle program;

- Interviewed end-users of alternative fuel vehicles in the Department to determine what their experiences and attitudes toward using alternative fuel vehicles have been;

- Analyzed the Department's Executive Order 13149 Compliance Strategy, as well as annual petroleum consumption reporting;

- Analyzed methodologies for obtaining and summarizing data in the Department's Federal Automotive Statistical Tool, as well as output from that system;

- Analyzed data to determine the Department's and nation's success in reducing and replacing petroleum consumption, as well as the attributes of alternative fuel vehicles;

- Reviewed Department budgets and performance measures; and,

- Reviewed prior Office of Inspector General and U.S. General Accounting Office Reports (see Appendix 2).

The audit was conducted in accordance with generally accepted Government auditing standards for performance audits, and included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objective. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. We placed limited reliance on computer-processed data and performed tests of that data to the extent necessary to satisfy the audit objective.

An exit conference was held with cognizant DOE Headquarters officials on April 12, 2002.

APPENDIX 2

PRIOR REPORTS

Office of Inspector General Reports

- *The U.S. Department of Energy's Participation in the Partnership for a New Generation of Vehicles Program* (DOE/IG-0422, July 1998). Although research projects being pursued by the Department contributed to the goals of the Partnership for a New Generation of Vehicles (PNGV) Program, it was unlikely that some technologies such as fuel cells and compression-ignition direct ignition engine research would be developed in time to meet the PNGV 2004 timeframe.

General Accounting Office Reports

- *Energy Policy Act of 1992: Limited Progress in Acquiring Alternative Fuel Vehicles and Reaching Fuel Goals* (GAO/RCED-00-59, February 2000). The Energy Policy Act's goals to replace at least 10 percent of petroleum fuel with alternative fuels in 2000 and 30 percent in 2010 will not be achieved under current economic conditions. Widespread acceptance of alternative fuels will be primarily determined by economics, not by provisions in the Act. The general public would shift significantly towards alternative fuels only if there are (1) dramatic and sustained increases in the price of gasoline and/or (2) very large incentives to reduce the cost of alternative fuel vehicles and encourage their use. Both of these measures would involve high costs, making them unlikely to be acceptable.

- *Energy Policy Act: Including Propane as an Alternative Motor Fuel Will Have Little Impact on Propane Market* (GAO/RCED-98-260, September 1998). It is unlikely that the goals of the Energy Policy Act (Act) of 1992 will be achieved. Based on Energy Information Administration (EIA) modeling, alternative fuels will account for less than 1 percent in 2000 and about 3.4 percent in 2010 of the total motor fuel projected to be consumed by light-duty vehicles. The Act's focus on acquisition of alternative fueled vehicles rather than use of alternative fuels, high alternative fuel vehicle costs, low gasoline prices, and an inadequate refueling infrastructure are factors hindering the increased use of alternative fuels for transportation. Further, the effects of the Act on the supply and price of propane will be minimal and the increase in the overall price of propane will be negligible.

- *Energy Security: Evaluating U.S. Vulnerability to Oil Supply Disruptions and Options for Mitigating Their Effects* (GAO/RCED-97-6, December 1996). GAO estimated that the U.S. economy realizes hundreds of billions of dollars in benefits annually by using relatively low cost imported oil rather than relying on more expensive domestic sources of energy. By comparison, oil shocks impose large but infrequent economic costs that, when annualized, are estimated to cost the U.S. economy tens of billions of dollars per year. More importantly, substituting more costly domestic production for oil imports without lowering overall oil consumption would be unlikely to substantially lower the costs of oil

supply disruptions. In essence, the economic costs of oil price shocks depend largely upon the rise in the price of oil coupled with the nation's level of oil consumption, rather than the level of imports. While adopting the National Energy Policy Plan's initiatives may keep the economy's vulnerability to oil supply disruptions below what it otherwise would be, the EIA's forecasts indicate that by most measures the economy will not likely be significantly less vulnerable through 2015, primarily because the demand for oil is projected to increase. Only over a longer period do energy analysts anticipate significant improvement–and that depends on technological advances in such areas as energy efficiency and alternative fuels.

- *Alternative-Fueled Vehicles: Progress Made in Accelerating Federal Purchases, but Benefits and Costs Remain Uncertain* (GAO/RCED-94-161, July 1994). Many believe that alternative fuels have the potential to improve energy security and air quality, while providing economic benefits. However, because of uncertainties, further evaluation is needed to determine the extent to which such benefits can be realized and at what cost. Because alternative-fueled vehicles are often dispersed rather than concentrated, Federal efforts to encourage the development of refueling facilities have met with limited success. Also, the shortage of convenient refueling facilities has contributed to the low use of alternative fuels–operators of Federal dual-fueled vehicles often choose to use gasoline because of its ready availability. Nevertheless, the ultimate success of alternative fuels programs depends on including non-Federal vehicles. GAO made several recommendations including one that the Department implement legislation requiring Federal agencies to use alternative fuels unless the Secretary of Energy determines that operating vehicles on such fuels is not feasible.

APPENDIX 3

Department of Energy
Washington, DC 20585
March 13, 2002

MEMORANDUM FOR WILLIAM S. MAHARAY
ASSISTANT INSPECTOR GENERAL
FOR AUDIT SERVICES
OFFICE OF INSPECTOR GENERAL

FROM: DAVID K. GARMAN
ASSISTANT SECRETARY FOR ENERGY EFFICIENCY
AND RENEWABLE ENERGY

SUBJECT: COMMENTS ON DRAFT REPORT ON ALTERNATIVE FUELS USE AT THE DEPARTMENT OF ENERGY (A01PT009)

Thank you for the opportunity to review the Office of Inspector General (OIG) draft report titled "Alternative Fuels Use at The Department of Energy." We believe the report will help refine actions being taken by the Department of Energy to demonstrate Federal leadership in the use of alternative fuel vehicles and alternative fuels.

We also believe that the Department has done an excellent job in meeting the statutory requirements of the Energy Policy Act of 1992 to acquire alternative fuel vehicles. In the last three years, the Department has exceeded the numerical vehicle acquisition requirements of the Act. However, alternative fuel use in these vehicles, although consistent with the statutory requirements, is less than desirable. Accordingly, the Department has taken important steps to increase alternative fuel use over the next several years. As the report identifies, this will allow the Department to "..exercise a more credible leadership role in creating momentum for significant petroleum displacement in the nation as a whole."

The objective of the audit was to determine whether actions taken by the Department will contribute to reaching its own mandated alternative fuel goals. The report discusses three goals:

1. Reducing the Department's petroleum consumption by 20 percent by the year 2005;
2. Assuring that 75 percent of new light-duty vehicles the Department acquires in major metropolitan areas operate on alternative fuels and that such fuels are used in those vehicles at least 75 percent of the time by 2005 and 90 percent of the time by 2010; and
3. Replacing, for the nation as a whole, 10 percent of petroleum motor fuels with alternate fuels by 2000 and 30 percent by 2010.

The first and second of these goals relate to the Department's fleet operations. The first "goal" is a requirement placed on the Department by Executive Order 13149. The second is an internally developed target designed to exceed the requirements of the Executive Order and the Energy Policy Act, Section 303.

The Department has developed a comprehensive strategy for meeting these goals, as described in the report. While acknowledging the Department's strategy fully addresses the goals, the draft report concludes the strategy did not sufficiently detail how impediments and conflicts would be resolved. We believe the record shows otherwise. As you are aware, on September 4, 2001, Secretary Abraham signed the U.S. Department of Energy Compliance Strategy for Executive Order 13149. This strategy provides specific site goals to reduce petroleum consumption in the Department's motor vehicles through use of alternative fuel vehicles (AFV) and alternative fuels, acquisition of vehicles with higher fuel economy and an overall increase in the efficiency of vehicles operated by Departmental fleets. Prior to approval by the Secretary, this strategy was reviewed by the Field Management Council (FMC) and approved by Deputy Secretary Frank Blake on June 20, 2001. Each of the Program Secretarial Offices (PSOs) and Field Elements concurred on the final version of the strategy document and all comments were resolved to the satisfaction of the commenting organizations.

Examples of impediments and lack of commitment, attributed in the report to some site fleet managers, are in direct conflict with the "Resolution of Comments from Field Management Council Review of the Executive Order Compliance Strategy" (FMC Action No. 319-EE-01, June 20, 2001). Although there is always room for improvement, we believe these kinds of issues as raised in the draft report have been addressed and resolved.

Nonetheless, we concur with recommendation one in the draft report regarding the Department's fleet operations and propose to take action as follows:

Recommendation 1: "Develop and implement enhancements to the Department's approach through the use of alternative fuels within its own vehicle fleets. Such enhancements should include:"

a. "Specific actions that will be undertaken to ensure that operators use alternative fuels in alternative fuel vehicles 75 percent of the time on average;"

Proposed Action: The Department's strategy identifies the sites and infrastructure requirements needed to meet the 75 percent fuel use goal by 2005. Funding for infrastructure development is identified in the Department's strategy; we will submit the request for de-obligation and re-allotment of these funds to the Chief Financial Officer no later than May 15, 2002. We will continue to work with Department fleet managers and PSOs to ensure steady progress towards this 2005 goal.

b. "Specific measures that will be used to hold fleet managers accountable for alternative fuel use;"

Proposed Action: In coordination with the Department's Office of Management, Budget and Evaluation and other PSOs, we will propose a fleet manager accountability system and seek approval from the FMC. In addition, we will initiate an awards program, in

coordination with the Federal Energy Management Program, to recognize fleet managers that demonstrate excellence in meeting alternative fuel use goals.

c. "Education and informational programs for alternative fuel vehicle operators;"

Proposed Action: A modest driver education and information dissemination program is proposed for FY 2003, subject to the availability of appropriations.

d. "Complete discussion, and action plans for resolution, of infrastructure impediments to alterative fuel usage goals;"

Proposed Action: We believe that these issues were adequately discussed and resolved through the FMC resolution process; any remaining issues will be addressed through the same process consistent with actions taken under recommendations a. and b.

e. "Performance measures that will allow the Department to accurately gauge its progress toward achieving displacement goals."

Proposed Action: The Federal Automotive Statistical Tool (FAST) web-based data collection system, developed by the Department in partnership with the General Services Administration, provides the capability to measure each fleet's performance towards compliance on an annual basis.

The third "goal" identified in the report is not a Departmental goal, as such, but a national petroleum fuel replacement goal established by the Energy Policy Act of 1992. Section 502 of the Act requires the Department to study the technical and economic feasibility of attaining 10 percent petroleum fuel displacement by 2000 and 30 percent by 2010. The Act requires the Department to analyze the progress made towards reaching these goals and the actual and potential role of replacement fuels and alternative fuels vehicles.

The Department has implemented several programs, consistent with the requirements of the Act, and produced several reports analyzing progress towards the goals. In our report "Replacement Fuel and Alternative Fuel Vehicle Technical and Policy Analysis" published in September 2000, we document important barriers to achieving the goals of the Act. Similar barriers and concerns about certain elements of the Energy Policy Act are identified by the President's National Energy Policy. Nevertheless, we agree that further actions are appropriate to address the third goal and concur with the draft report's second recommendation as noted below:

Recommendation 2: "The Assistant Secretary for Energy Efficiency and Renewable Energy explore, in cooperation with the Congress and other stakeholders, an enhanced approach to a national alternative fuels program that includes greater focus on incentives for purchases and investments in alternative fuels, vehicles, infrastructure, and emerging technologies. Such a program should also include more realistic goals and measures of success."

Proposed Action: We believe the recommendation is consistent with actions already taken by the Secretary of Energy to implement the President's National Energy Policy. However, we concur with the sources cited in the report that the Energy Policy Act needs to be reviewed and modified, for example, to emphasize greater use of alternative fuel. Consistent with the Energy Policy Act, we have already begun the formal rulemaking process of determining whether a private and local mandate is necessary, and whether the Energy Policy Act goals are achievable and practical.

Thank you again for the opportunity to comment on the draft report. Should you have any questions regarding this response, please feel free to contact David Rodgers, Director, Office of Technology Utilization (EE-34) at 6-9118.

IG Report No.: DOE/IG-0553

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