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REPORT BY THE U.S.

General Accounting Office

The Department Of Energy Should Provide Leadership To Assure Near-Term Gasoline Conservation Opportunities Are Realized

Gasoline conservation can play an important role over the next few years in helping reduce the Nation's dependence on foreign oil. Even though gasoline consumption has decreased over the past 2 years, additional gasoline savings are possible by accelerating improvements in vehicle fleet fuel efficiency, applying fuel-efficient driving practices, and reducing the number of vehicle miles driven.

The Department of Energy currently has programs that promote gasoline savings by educating drivers about these conservation opportunities, but the programs need better direction and focus.

GAO believes that the Department needs to systematically assess its role in facilitating and supplementing private sector efforts to assure maximum realization of near-term gasoline conservation opportunities. Such an assessment is especially appropriate now, given gasoline price decontrol, the recent decrease in gasoline consumption, and the administration's plans to substantially cut back funding for gasoline conservation programs. Accordingly, this report recommends that the Secretary of Energy develop a comprehensive strategy to guide the Department's gasoline conservation efforts.

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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

ENERGY AND MINERALS
DIVISION

B-202721

The Honorable James B. Edwards
The Secretary of Energy

Dear Mr. Secretary:

Gasoline conservation can play an important role over the next few years in helping reduce the Nation's dependence on foreign oil. Even though gasoline consumption has decreased over the past 2 years, additional gasoline savings are possible by accelerating improvements in vehicle fleet fuel efficiency, applying fuel-efficient driving practices, and reducing the number of vehicle miles driven.

This report results from our examination of the Department's programs that promote gasoline savings by educating drivers about these conservation opportunities. We found the programs need better direction and focus, and should be part of an overall strategy for gasoline conservation.

At the time we were completing our work, the administration, as you know, announced its intentions to substantially reduce funding for gasoline conservation programs. We recognize that most of the programs we examined may soon cease to exist; however, we believe our report indicates a need for DOE to provide leadership by promoting and supplementing private sector efforts to further the timely achievement of near-term gasoline conservation opportunities. In order for the Department's limited funds for near-term gasoline conservation to have a maximum impact in the future, the Department needs to assess in a more systematic fashion its role in facilitating and supplementing such private sector efforts.

This report contains a recommendation to you on page 25. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We would appreciate being advised of the actions taken on the matters discussed in this report.

We are sending copies of this report to the four committees mentioned above and to the chairmen of energy-related congressional committees.

Sincerely yours,

J. Dexter Peach
Director

GENERAL ACCOUNTING OFFICE
REPORT TO THE SECRETARY
OF ENERGY

THE DEPARTMENT OF ENERGY SHOULD PROVIDE LEADERSHIP TO ASSURE NEAR-TERM GASOLINE CONSERVATION OPPORTUNITIES ARE REALIZED

D I G E S T

In 1979, motor gasoline accounted for about 70 percent of all the petroleum used by the transportation sector and 38 percent of all the petroleum products used in the United States. By curbing gasoline demand, the United States can significantly reduce its dependence on foreign oil.

In the long-term, gasoline demand can be significantly reduced through advances in automotive technology and the development of alternative non-petroleum-based fuels. However, development and extensive commercialization of successful new technologies will require many years, and no major impacts are expected in the near future.

More immediate gasoline demand reductions can occur by improving the efficiency of vehicle operation, reducing vehicle miles traveled, and accelerating the improvement of the average fuel economy of the vehicle fleet. These types of actions can contribute to reducing gasoline demand not only in the near-term, but also in the future, as new technologies emerge.

The Department of Energy (DOE) has been on record as being committed to achieving greater near-term gasoline conservation savings, and administers programs designed to inform and educate drivers about ways to use gasoline more efficiently. (See p. 2.)

DOE has declared, as one of its transportation conservation program objectives, a goal of reducing gasoline consumption 10 percent in the near-term. (See p. 15.)

IMPACT OF PROPOSED BUDGET CUTS

As GAO's review work was being completed, the administration's proposed budget changes for fiscal years 1981 and 1982 were announced, containing substantial cuts in DOE's near-term gasoline conservation programs.

Despite the fact that the programs GAO examined may soon cease to exist, GAO believes this report can contribute to the dialogue over the future direction of DOE's energy conservation programs. (See p. 7.)

DESPITE RECENT DECLINES IN CONSUMPTION, MORE GASOLINE CONSERVATION POTENTIAL EXISTS

Gasoline consumption in the United States has decreased over the past 2 years, following years of almost uninterrupted growth. Consumption has been constrained by supply restrictions for part of the period, and new cars entering the fleet have been more fuel efficient than their predecessors. But the primary reason for the 11-percent decline in consumption between 1978 and 1980 appears to have been conservation actions, especially reductions in travel, taken by drivers in response to the sharp increases in fuel costs which occurred during the period. (See p. 8.)

Continued improvement of new car fuel economy under Federal fuel economy standards, and rising fuel prices should continue to restrain gasoline demand in the near-term. Nevertheless, greater gasoline savings are possible if drivers take additional conservation actions which will enable them to reduce gasoline use (and costs) while maintaining mobility.

The fuel efficiency of the overall vehicle fleet will continue to improve over the near-term without any additional Government actions, but educating buyers to purchase the most efficient vehicle, which suits their transportation needs, can help accelerate the trend. Fleet fuel efficiency can also be improved by an estimated 12 percent through proper vehicle maintenance. (See p. 11.)

Fuel economy can vary significantly due to driver behavior, and estimates of gasoline savings obtainable through improved driving techniques range from 5 percent to as much as 20 percent. (See p. 12.)

Opportunities exist to save gasoline by decreasing vehicle miles of travel, especially for commuting. Increased ridesharing (carpooling and

vanpooling), greater utilization of mass transit, trip consolidation, and trip planning can all contribute to decreased vehicle use without any decrease in mobility. (See p. 12.)

DOE NEEDS TO PROVIDE BETTER PROGRAM DIRECTION

Although DOE's near-term gasoline conservation programs may individually address appropriate conservation opportunities, together they are not part of any overall strategy for gasoline conservation. This lack of direction has resulted in deficiencies in DOE's development, implementation, and evaluation of its programs. (See p. 14.)

Meaningful goals are essential for effective program direction, but DOE's programs do not adequately support its established goals. The Department has changed the goals frequently with no accompanying explanation. By DOE's own estimates, its programs will fall far short of achieving the goals. And the goals raise questions over what the Department's role is in furthering gasoline conservation, since it piled new goals on top of an already existing goal, without explaining the relationship between the goals. (See p. 14.)

DOE's statements on the need for conserving gasoline appear inconsistent with the low priority accorded the area compared to other energy use sectors. Only about 2 percent of the Department's transportation conservation budget goes for near-term gasoline programs. (See p. 17.)

Program evaluation has received low priority. The programs have been continued from year to year with little formal evaluation of their impact. Program officials recognize the importance of evaluating ongoing programs and have stated that they have plans for increasing their efforts in this area. To date, little has been accomplished. (See p. 20.)

CONCLUSIONS

To the extent that desired information is not otherwise available from private sector sources,

DOE should contribute toward educating drivers about potential gasoline savings available. By promoting such conservation measures, DOE can help drivers cope with the apparent inevitability of higher future gasoline prices and help reduce the Nation's dependence on imported oil.

DOE should provide leadership to assure that existing near-term gasoline conservation opportunities are realized to the greatest extent possible. DOE needs to systematically assess its role in facilitating and supplementing private sector near-term gasoline conservation efforts. Such an assessment is needed now, in light of gasoline price decontrol, gasoline consumption decreases of the past 2 years, and the planned cutbacks in DOE's near-term gasoline conservation programs. (See p. 24.)

RECOMMENDATION

The Secretary of Energy should systematically assess DOE's role in facilitating and supplementing private sector near-term gasoline conservation efforts. The results of the assessment should then be used to create a strategy to guide program development, implementation, and evaluation. In developing the strategy, the Secretary should consider programs and activities carried out by all DOE components having responsibility for near-term gasoline conservation. The strategy should also consider and build upon near-term gasoline conservation efforts of the private sector and other Federal agencies, most notably the Department of Transportation.

AGENCY COMMENTS

DOE officials stated that the report could be more constructive if more specific recommendations could be made concerning needed program improvements. GAO did not examine in detail the effectiveness of DOE's individual programs, but instead focused on the overall management of the programs concentrating on goals and program development, implementation, and evaluation. On this basis, GAO concluded that DOE should determine where near-term gasoline conservation programs fit as part of its future conservation efforts, and then develop an overall strategy to guide its activities. GAO

believes such an assessment is now more appropriate than ever, given recent (1) actions which increased gasoline prices and (2) decisions to decrease funding for DOE's gasoline conservation-related programs.

Contents

ABBREVIATIONS

DECAT	Driver Energy Conservation Awareness Training
DOE	Department of Energy
DOT	Department of Transportation
EES	Energy Extension Service
EPA	Environmental Protection Agency
GAO	General Accounting Office
mpg	miles per gallon
NEEDS	National Energy Efficient Driving System
NEP	National Energy Plan
NHTSA	National Highway Traffic Safety Administration
SECP	State Energy Conservation Program

CHAPTER 1

INTRODUCTION

The United States can reduce its dependence on foreign sources of oil significantly by curbing motor vehicle gasoline demand. In 1979, the United States consumed motor gasoline at the rate of about 7 million barrels every day--about 70 percent of all the petroleum used by the transportation sector and 38 percent of U.S. petroleum product use. Because gasoline represents such a large share of petroleum consumption, reducing the demand for this product can have a major impact on petroleum import levels.

GASOLINE DEMAND REDUCTION OPPORTUNITIES

In the long-term, gasoline demand can be significantly reduced through advances in automotive technology and the development of alternative non-petroleum-based fuels. Improvements in the fuel efficiency of conventional vehicles are already being made through vehicle downsizing, improved engines and transmissions, improved aerodynamic design, and improved rolling resistance. Technological advances in the areas of electric vehicles, new types of engines, and alternative fuels can eventually lead to greater reductions in the demand for gasoline. However, development and extensive commercialization of successful new technologies will require many years and no major impacts are expected in the near future.

More immediate gasoline demand reductions can occur by improving the efficiency of vehicle operation, reducing vehicle miles traveled, and accelerating the improvement of the average fuel economy of the vehicle fleet. Realization of these near-term 1/ opportunities, however, does not necessitate new technologies so much as (1) actions by millions of individual drivers to change the way they operate and maintain their vehicles and (2) adjustments in the way people have traditionally viewed vehicle ownership and use. These types of actions can contribute to reducing gasoline demand not only in the near-term but also in the future as new technologies emerge.

1/"Near-term" is defined, for purposes of this report, as the period between now and 1985.

DOE NEAR-TERM GASOLINE CONSERVATION PROGRAMS

The Department of Energy (DOE) 1/ has been on record as being committed to achieving greater near-term gasoline conservation savings. DOE has declared, as one of its transportation conservation program objectives, a goal of reducing gasoline consumption 10 percent in the near-term. DOE's ongoing programs which support this goal basically use an educational and informational approach to encourage greater efficiency in vehicle and transportation system use.

DOE near-term gasoline conservation programs are concentrated in the Office of Transportation Programs under the Assistant Secretary for Conservation and Renewable Energy. Within the Office of Transportation Programs, the Transportation Systems Utilization Division has primary responsibility for administering near-term gasoline conservation programs. The Division's overall budget has been at a fairly constant level during the last 3 fiscal years--$6.1 million, $6.7 million, and $6.7 million for 1979, 1980, and 1981, respectively. However, the Division has other transportation conservation responsibilities as well, and a program official informed us that about $2.6 million of the fiscal year 1981 budget can be specifically identified with near-term gasoline conservation programs. The prior administration's fiscal year 1982 budget, submitted to the Congress in January 1981, requested $9.2 million for overall Division programs.

Funds for near-term gasoline conservation activities are also available, to some extent, from other DOE groups that are involved in energy conservation education and outreach activities. Officials of the Office of Transportation Programs stated that they try to utilize any additional resources available from such groups as the Office of State and Local Assistance Programs, Office of Public Affairs, and the Office of Commercialization to help extend the reach of their programs.

1/The Department of Energy Organization Act (P.L. 95-91) transferred the functions of the Federal Energy Administration, Energy Research and Development Administration, Federal Power Commission, and certain energy related activities of other agencies to DOE. This was effective on Oct. 1, 1977. For simplicity, statements made and data published by the former agencies are attributed to DOE.

Following are descriptions of the Office of Transportation Programs' major near-term gasoline conservation programs.

Driver awareness

The driver awareness program is intended to make drivers aware of ways to save gasoline and money. It is aimed at Government energy policy administrators, fleet managers, and individual drivers. The program consists of intensive instructor training, workshop/seminars, moderator packages, and public education materials, covering such areas as the vehicle purchase decision, efficient driving techniques, trip planning and alternatives, and car care and maintenance.

The instructor training segment of the program, referred to as Driver Energy Conservation Awareness Training (DECAT), is DOE's major driver awareness program, and consists of a 2-1/2 day course held at DOE's driver training center in Nevada. The seminar is for individuals who are responsible for Government or commercial fleets or who will provide training to such fleets. Instructors are given training which will enable them to conduct their own driver awareness programs. An important part of the seminar is behind-the-wheel instruction in an instrumented vehicle which demonstrates the effectiveness of energy efficient driving techniques. The ultimate aim of DECAT is to have trained instructors disseminating driver awareness principles nationwide.

New-car fuel economy

DOE's new-car fuel economy information program consists of three segments: printing and distribution of gas mileage guides; evaluation of new-car buyer knowledge, comprehension, and reaction to the guides; and collection and analysis of actual fuel economy data. The ultimate aim of the program is to educate and influence the new-car buyer to buy a more fuel-efficient vehicle.

DOE is required by the Energy Policy and Conservation Act of 1975 (P.L. 94-163) to publish and distribute a booklet containing data prepared by the Environmental Protection Agency (EPA) on the fuel economy of automobiles manufactured in each model year. DOE printed 16 million booklets during fiscal year 1980, and printing costs represent the largest single expenditure by the Office of Transportation Programs for near-term gasoline conservation. DOE has twice conducted evaluations of the effectiveness of the fuel economy information program in order to identify steps which can be taken to improve buyers' awareness of the information.

DOE also collects in-use fuel economy information to quantify the gap between EPA estimated and actual fuel economy. This information is used in improving the fuel economy information program and projecting future fuel consumption levels in the transportation sector.

Truck and bus fuel economy

The Voluntary Truck and Bus Fuel Economy Program is a cooperative effort involving DOE and the Department of Transportation (DOT). It is intended to increase the awareness of gasoline and diesel fuel conservation opportunities in the truck and bus industry. Participants in the program include independent truck owner/operators, manufacturers, suppliers, trade associations, motor carriers, labor unions, fleet operators, and bus operators. DOE is responsible for information dissemination. Program activities include

--participation in trade shows;

--distribution of a quarterly newsletter, Fuel Economy News, and other program literature;

--display of materials and movies at truck stops; and

--encouraging State energy offices to participate in the program (19 States are members).

Ridesharing

DOE's responsibilities in this area are somewhat limited since DOT is the lead Federal agency for promoting ridesharing (carpools, vanpools, and mass transit). DOE does conduct some activities which promote vanpools, however. DOE also promotes ridesharing programs through the State Energy Conservation Grant Program and provides technical assistance to, and works with, DOT in its ridesharing activities.

Much of DOE's work involves identifying and working to overcome institutional barriers to ridesharing, such as obtaining insurance and financing for vanpools. DOE has developed and distributed several documents which provide information and guidance on starting both employee-operated and individual driver-operated vanpools.

State and local assistance

The State and local assistance program is intended to promote the development of State and local transportation conservation programs. Activities pursued include (1) providing technical assistance and information to State and local agencies and (2) distributing literature on driver awareness, truck and bus operations, and other related conservation opportunities.

A major activity in this area during fiscal year 1980 was the establishment of State-by-State gasoline conservation goals. In the aftermath of the 1979 gasoline shortages and in anticipation of continued lower crude oil supplies during 1980, DOE, in December 1979, published voluntary State-by-State gasoline conservation targets for 1980. This action was motivated by enactment of the

Emergency Energy Conservation Act of 1979 (P.L. 96-102), which gave the President the authority, in the event of an energy shortage, to set State-by-State energy reduction targets and let the States devise their own measures to meet their targets.

The purpose of establishing reduction targets in the absence of an actual shortage was to test DOE's target-setting mechanism and allow States to get a step ahead in preparing for an actual emergency, and also to encourage gasoline conservation. DOE initially set reduction targets for only the first quarter of 1980, and later set targets for the rest of 1980, amounting in the aggregate to 5.5 percent less consumption than in 1979. DOE expected that the targets could be met through unspecified voluntary State-by-State gasoline conservation efforts.

The Office of Transportation Programs was given responsibility for developing the gasoline targets and also working with the States to help them implement programs to achieve the reduction targets.

OBJECTIVES, SCOPE, AND METHODOLOGY

The principal objectives of our review were to (1) assess DOE's overall efforts to achieve its stated goal of reducing near-term gasoline consumption by 10 percent and (2) determine the appropriateness of DOE's near-term programs in light of recent changes in gasoline demand trends. We limited our review only to those programs which DOE identified as contributing to the achievement of its near-term goal. Consequently, we did not assess DOE's automotive technology research, development, and demonstration programs, as they are expected to have little, if any, impact on near-term gasoline demand. And, we did not assess the federally mandated automobile fuel economy standards program or the impact of deregulation of domestic oil prices on gasoline prices and demand, since DOE's goals exclude demand reductions which may occur from these actions.

In order to assess DOE's overall efforts to achieve its goal of reducing near-term gasoline consumption 10 percent, we addressed

- --how DOE's 10 percent near-term gasoline reduction goal was developed;
- --what programs DOE implemented to support the attainment of the goal;
- --how well the programs are being managed; and
- --what impacts programs have had, or are expected to have, on gasoline demand.

We reviewed DOE transportation conservation budget and program documents, interviewed DOE headquarters officials directly responsible for the development and overall management of

transportation conservation programs and those responsible for the day-to-day operation of the individual near-term programs, and examined statements and testimony of DOE officials dealing with gasoline conservation policy and programs. We also examined reports of contractors responsible for implementing segments of near-term programs and other gasoline conservation reports.

In addressing the impact of DOE's near-term programs, we did not independently determine the extent to which consumers have conserved gasoline as a direct result of DOE programs. Such an effort would have required considerable time and the use of sophisticated marketing research techniques. We judged that this type of evaluation should be a part of DOE's program evaluation activities. Also, we did not examine in detail the effectiveness of the day-to-day administration of individual near-term programs. Instead, we limited our review to the overall management of DOE's near-term gasoline conservation effort, concentrating on goals and program development, implementation, and evaluation. We did not assess the effectiveness of DOE's voluntary truck and bus conservation program, a program which contributes to DOE's near-term goal. That program was recently assessed in a separate GAO report. 1/ While we did assess DOE's ridesharing activities, we did not examine DOT ridesharing programs, which were also the subject of a recent GAO report. 2/

To determine the appropriateness of DOE's near-term gasoline conservation programs, given recent changes in gasoline demand, we addressed

--what changes have occurred in gasoline demand and the most likely cause of those changes;

--what gasoline conservation potential, if any, still exists; and

--whether DOE's programs address remaining near-term gasoline conservation opportunities.

We reviewed and analyzed various statistical reports on gasoline demand trends and data on recent changes in the factors which affect gasoline demand--vehicle miles traveled, vehicle fuel economy, number of vehicles, etc. We also reviewed DOE and other reports on near-term gasoline conservation opportunities, including

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1/"The Federal Government Should More Actively Promote Energy Conservation by Heavy Trucks," EMD-80-40, Mar. 13, 1980.

2/"Increasing Commuting by Transit and Ridesharing: Many Factors Should Be Considered," CED-81-13, Nov. 14, 1980.

various GAO reports, 1/ and interviewed DOE's transportation conservation officials with regard to possible causes of recent drops in gasoline demand and gasoline conservation potential. Quantitative information was limited regarding the impact changes in the various determinants of gasoline demand had on the recent downturn in demand. However, based on the data available from DOE driver surveys, DOE and other statistical reports, and DOE conservation officials themselves, we identified the factors which, in our judgment, contributed most significantly to recent demand decreases. We did not attempt to quantify existing near-term gasoline conservation potential. Instead, we identified areas of conservation opportunity for reducing gasoline demand based on our analysis of what conservation actions are currently being taken. We believe that this identification of potential is sufficient to judge the appropriateness of DOE's near-term gasoline conservation programs.

IMPACT OF PROPOSED BUDGET CUTS

As our review work was being completed, the administration's proposed budget changes for fiscal year 1981 and 1982 were announced, greatly impacting upon DOE's near-term gasoline conservation programs. Fiscal year 1981 funding for DOE's Transportation Systems Utilization Division would drop from $6.7 million to $4.9 million, with a further decrease in fiscal year 1982 to $1.0 million. The only activity which would continue to be funded in fiscal year 1982 is DOE's mandated responsibility to publish and distribute annual new-car mileage guides.

Our review was undertaken to identify ways to improve DOE's programs, given the assumption that DOE would continue to promote near-term gasoline conservation. Obviously, that assumption is no longer entirely valid.

Nonetheless, despite the fact that the conclusions in this report were made based on our examination of programs that may soon cease to exist, we believe this report can contribute to the dialogue over the future direction of DOE's energy conservation programs.

1/See EMD-80-40 (Mar. 13, 1980), CED-81-13 (Nov. 14, 1980); "A Framework for Developing a National Energy Conservation Program," EMD-79-76, July 31, 1979; and "The Federal Government Should Establish and Meet Energy Conservation Goals," EMD-78-38, June 30, 1978.

CHAPTER 2

DESPITE THE RECENT DECLINE IN CONSUMPTION, ADDITIONAL NEAR-TERM GASOLINE SAVINGS ARE POSSIBLE

Gasoline consumption fell sharply during the past 2 years; yet, the potential exists for further near-term reductions in gasoline use. Conservation actions taken by drivers in response to sharp gasoline price increases seem to be the primary cause of an 11-percent drop in gasoline consumption between 1978 and 1980.

Despite these reductions, consumers can take additional actions in the near-term to further reduce gasoline consumption while maintaining mobility.

GASOLINE CONSUMPTION FELL AS PRICE INCREASES SPURRED CONSERVATION

Gasoline consumption dropped 11 percent between 1978 and 1980 primarily because of conservation actions, especially reduced travel, taken by drivers in response to the sharp price increases during the period. Fleet fuel efficiency improved, and a short period of supply restrictions occurred in 1979; however, these factors cannot account for the large and sudden decline in consumption.

Gasoline consumption fell to 7 million barrels a day in 1979, down 5.4 percent from a record high of 7.4 million barrels a day in 1978. Preliminary data for 1980 indicate that consumption declined even further to 6.6 million barrels a day, a 5.7-percent decrease.

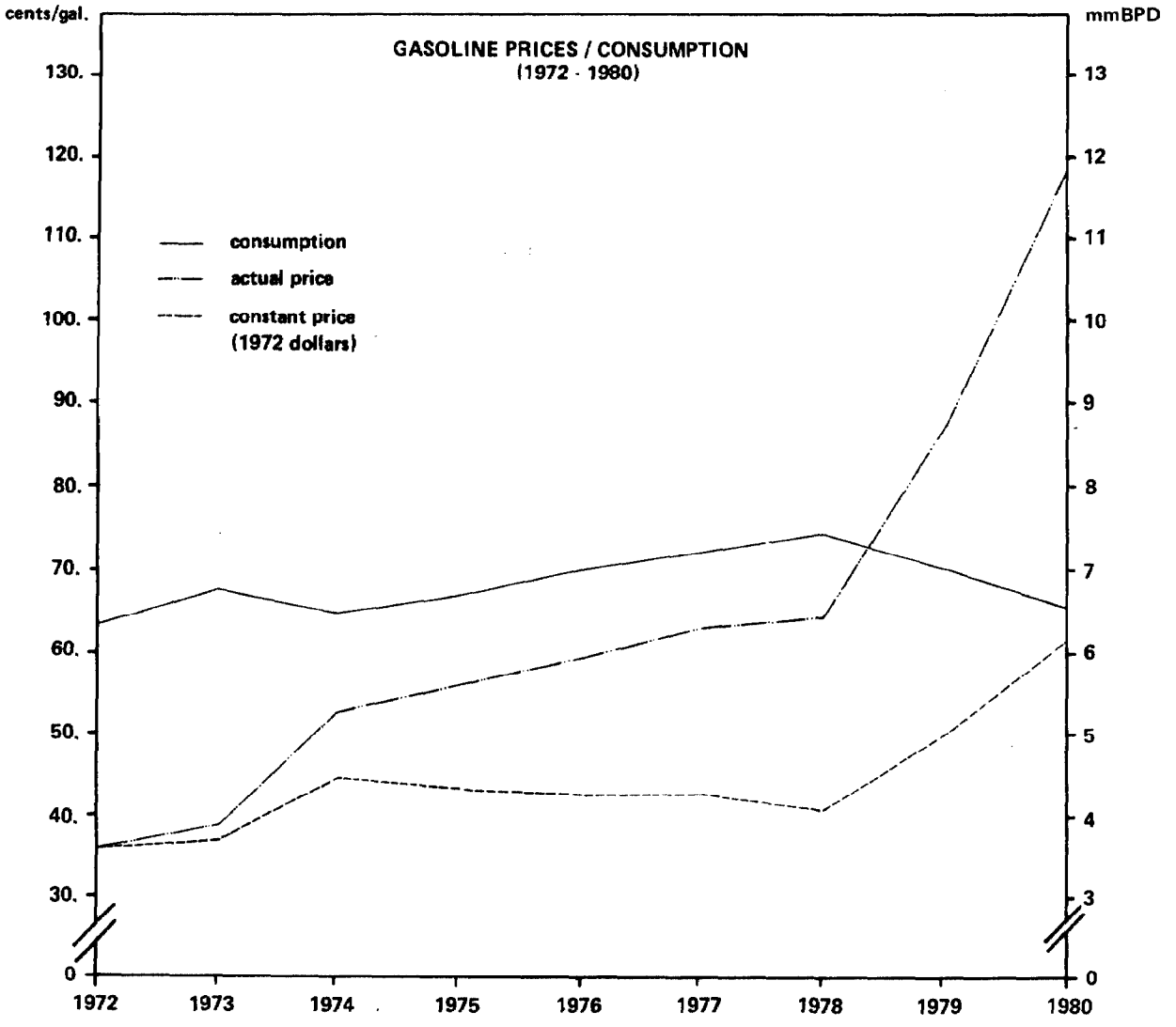
The sharp increase in gasoline prices since 1978 probably contributed most to the decline in gasoline consumption during 1979 and 1980. In January 1979, gasoline sold for an average price 1/ of $0.67 a gallon. By January 1980, it was selling for $1.09 a gallon, and by June 1980 it had climbed to $1.22 a gallon, an increase of over 80 percent. Perhaps more important than the 80-percent increase in actual gasoline price was the fact that, through the 3rd quarter of 1980, the real price 2/ of gasoline was up over 50 percent from 1978.

An examination of past gasoline price and consumption trends (see fig. 2-1) shows that during 1974 and 1979-80, when the real price of gasoline rose, consumption dropped. On the other hand, when real price decreased, consumption increased.

1/All gasoline prices cited are for leaded regular gasoline.

2/Prices expressed in 1972 dollars.

FIG. 2-1



SOURCE: Department of Energy

Results of a survey released by DOE in March 1980 show that 70 percent of the drivers responding reported that they reduced their driving primarily by making fewer trips and combining errands. A small number reported reducing driving by ridesharing or using public transit. These survey findings are supported by DOT information which shows vehicle miles of travel declined in 1979 and 1980. Federal Highway Administration data shows that, while the number of vehicles increased by almost 6 million, 19 billion fewer miles were driven in 1979 than in 1978, a 1.2-percent decrease. In May 1980, DOT reported that highway travel during March 1980 was 6 percent lower than in March 1979, and was "rapidly reverting to 1977 levels."

While improved new-car fuel economy and a period of gasoline supply restriction also helped reduce gasoline consumption, their effects were limited. Although 1979 average new-car fleet fuel economy was about 11 percent better than in 1978, the average automobile fleet fuel economy improved only 1.6 percent. There is a time lag before improvements in new-car fuel economy can significantly raise the fleet average because new vehicles account for only about 10 percent of all registered vehicles each year.

The United States experienced a brief period of restricted gasoline supply during 1979 which contributed to reduced gasoline consumption in that year. The interruption of Iranian exports in the 1978-79 winter created a shortfall in world and United States crude oil supplies. This shortfall contributed to shortages of gasoline during the summer of 1979, long lines at gasoline service stations, and reduced hours of gasoline sales, which naturally constrained consumption.

However, supply constraints do not account for the continued decline in consumption in the latter half of 1979 and throughout 1980. Although supply shortages generally ended during the summer of 1979, consumption remained low for the remainder of the year and throughout 1980. Consumption in June 1980, a peak driving month, was over a million barrels a day less than in June 1978.

SIGNIFICANT NEAR-TERM GASOLINE CONSERVATION POTENTIAL STILL EXISTS

There are significant opportunities to reduce gasoline demand in the near-term by (1) accelerating the improvement of the fuel efficiency of the vehicle fleet, (2) increasing the application of fuel-efficient driving practices, and (3) reducing vehicle miles traveled. Compliance with the federally mandated fuel economy standards for new automobiles through 1985 will bring about the gradual improvement of the vehicle fleet. This improvement can be accelerated, however, if consumers are induced to purchase the most efficient vehicles available and maintain their vehicles, both existing and new, for maximum fuel economy. Irrespective of built-in vehicle fuel efficiency, drivers can reduce their gasoline consumption by driving more efficiently (e.g., by maintaining efficient speeds and reducing the need for acceleration

and deceleration) and by reducing the number of miles they drive (e.g., by sharing rides and consolidating trips).

Improve the vehicle fleet fuel efficiency

The fuel efficiency of the overall vehicle fleet will continue to improve over the near-term without additional Government actions, but individual consumer action can accelerate the trend.

The federally mandated fuel economy standards ensure that average new-car fuel economy will continue to improve through 1985. New-car fuel economy improved from 14.4 miles per gallon (mpg) in 1974 to about 23 mpg in 1980, a 60-percent increase, and the standards require automobiles to average 27.5 mpg by the 1985 model year. But, because only about 10 percent of the vehicle fleet is replaced each year, the full benefits of the 1985 standard will not be realized until about 1995, when most pre-1985 vehicles will be removed from the fleet.

Vehicle purchasers can help accelerate fleet fuel efficiency improvements if they make well-informed decisions and purchase the most efficient vehicle which suits their transportation needs. Because the Federal fuel-economy standards apply to sales-weighted averages, cars can be produced and sold which are less efficient than the standard as long as the average efficiency of all the cars sold by the manufacturer meets the standard. For example, the efficiency ratings of models produced by one major manufacturer currently range from 15 mpg to 30 mpg. Even within a particular class, models with a wide range of fuel economy can be produced. For example, in the subcompact class of cars listed in the 1981 Gas Mileage Guide, the EPA mileage estimates range from 15 to 42 mpg. If vehicle purchasers concentrate their purchases toward those near the upper end of the fuel economy range, both the new car fleet and the overall vehicle fleet fuel economy would be greater than the standards alone require.

The opportunity also exists to improve the fleet fuel efficiency by maximizing the fuel economy of the vehicle stock through various maintenance practices. Proper vehicle maintenance can reduce gasoline consumption by an estimated 12 percent. As previously stated, DOE's own survey data indicate that some drivers are using vehicle maintenance practices, such as more frequent tune-ups and proper tire inflation, in an effort to reduce gasoline use. There is no evidence, however, that this is occurring on a large scale. Fuel-efficient vehicle maintenance practices include

--keeping engines properly tuned,

--using radial tires,

--keeping tires properly inflated,

--using low-friction oil and changing oil and oil filters at recommended intervals, and

--keeping wheels properly aligned and brakes properly adjusted.

These maintenance practices not only improve the fuel economy of older cars, but also help maintain the fuel efficiency of newer, more efficient models.

Increase fuel-efficient driving practices

Gasoline consumption can be quickly and significantly reduced through the use of fuel-efficient driving techniques. All other factors and conditions being equal, fuel economy can vary by 30 to 50 percent among drivers due to differences in driver behavior. Immediate realization of gasoline savings from the application of these practices is possible irrespective of the fuel economy of the vehicle itself. Although the extent to which the techniques are already being applied is not known, limited research by DOE and others indicates that drivers who receive training in fuel-efficient driving techniques are able to improve their fuel economy by 5 to 20 percent.

Recommended fuel-efficient driving practices primarily involve driving in a way that allows a vehicle to be operated at its most efficient speed for as much of the trip as possible. Commonly recommended fuel-efficient driving tips are

--minimize idling warm-up time (30 seconds is considered sufficient for a properly tuned vehicle),

--accelerate briskly and steadily to get to cruising speed as quickly as safety and traffic allow (but avoid "jack rabbit" starts),

--drive at a smooth and steady pace and anticipate traffic flow to avoid unnecessary deceleration and acceleration,

--drive at moderate speeds (most cars operate most efficiently in the 35-45 mph range) and obey the 55 mph speed limit on highways, and

--reduce air resistance by keeping windows closed whenever possible at highway speeds (40 mph or more).

Reduce vehicle miles traveled

Opportunities exist to decrease vehicle miles of travel, especially for commuting. Increased ridesharing (carpooling and vanpooling), greater utilization of mass transit, trip consolidation, and trip planning can all contribute to decreased vehicle use without any decrease in mobility.

The greatest potential for reducing vehicle miles traveled may be through the increased use of ridesharing for commuting to work. According to DOE, about one-third of all private automobile mileage is accumulated in the trip to and from the workplace. A 1977 Federal Highway Administration report shows that, at that time, about 71 percent of commuters drove alone, and only about 16 percent carpooled. Even considering that some commuters need to drive alone for various reasons--DOT estimated that number to be about 27 percent of commuters in 1975--a considerable amount of unutilized passenger capacity currently exists. Even if only partially used, this unutilized capacity represents significant gasoline savings potential. DOE has estimated that increasing the average occupancy for commuter trips from 1.4 to 2.0 persons would save about 400,000 barrels of petroleum a day.

Increased use of existing mass transit systems can also contribute to reducing vehicle miles of travel for commuting. Potential gasoline savings are limited, however, because existing systems do not serve the majority of commuters. According to a report we recently issued on commuting by transit and ridesharing, 1/ mass transit has traditionally served central city areas and high-density corridors between central cities and suburbs. Suburban sprawl and the relocation of businesses outside of central city areas have resulted in fewer persons working in central city areas. Census information shows that in 1975, only 36 percent of U.S. workers were employed in central city areas, whereas 31 percent worked in suburban areas and 33 percent worked in non-metropolitan areas. According to our previous report, mass transit has not played a large role in providing service in suburban or non-metropolitan areas because the low population densities make service noncompetitive and uneconomical. The report concludes that ridesharing is the only alternative to driving alone for most commuters who work outside central city areas.

Non-commuting mileage can also be reduced in a number of ways. DOE estimates that combining trips, using the telephone and mail to shop whenever possible, and sharing rides can reduce driving for family errands and social and recreational trips and cut individual gasoline use by up to 5 or 6 percent.

1/"Increasing Commuting by Transit and Ridesharing: Many Factors Should Be Considered," CED-81-13, Nov. 14, 1980.

CHAPTER 3

BETTER DIRECTION NEEDED TO GUIDE DEVELOPMENT OF DOE'S NEAR-TERM GASOLINE CONSERVATION PROGRAMS

DOE needs to assess how extensive its role should be in educating and informing drivers about gasoline conservation opportunities and then design programs that more effectively address the conservation potential identified in chapter 2. Although DOE has established goals for reducing near-term gasoline consumption, the programs it is implementing are not part of any overall strategy for achieving the goals. Its programs are fragmented, and the emphasis the programs have received has generally been inconsistent with the importance DOE has attached to gasoline conservation. Further, DOE has continued these programs from year to year with little evaluation of their impact.

Without a strategy that includes both program goals and program evaluation, DOE is not in a position to determine whether its near-term gasoline conservation programs are effective. Such a strategy is especially needed now in light of (1) anticipated program cutbacks, (2) expected higher prices resulting from gasoline price decontrol and (3) recent decreases in gasoline consumption.

DOE'S PROGRAMS DO NOT SUPPORT ESTABLISHED GOALS

DOE has established goals for near-term gasoline conservation savings, but the programs it is administering do not adequately support the goals. DOE has changed the goals frequently with no accompanying explanation. By DOE's own estimates, its programs will fall far short of achieving the goals. And DOE's creation of new goals raises questions over what DOE's role is in furthering gasoline conservation.

In several previous reports, we have discussed the importance of having meaningful and measurable energy conservation goals and plans to meet the goals, along with DOE's continued failure to establish such goals and plans. Our past work has shown that a lack of consistent specific planning and direction from the Federal Government, including the setting of goals, has limited the success of the Nation's efforts to conserve energy. 1/

1/"The Federal Government Should Establish and Meet Energy Conservation Goals," EMD-78-38, June 30, 1978; "A Framework for Developing a National Energy Conservation Program," EMD-79-76, July 31, 1979; and "Energy Conservation: An Expanding Program Needing More Direction," EMD-80-82, July 24, 1980.

DOE's goal has been changed frequently

A 10-percent goal for near-term gasoline savings has existed since 1977, but underlying assumptions surrounding the goal have since undergone several adjustments. Constantly revising the goal raises questions as to the validity and usefulness of the goal itself.

The President's National Energy Plan (NEP), announced in April 1977, first proposed as a national goal a 10-percent reduction in gasoline consumption, to be achieved by 1985. According to DOE, this reduction would have required a decrease in gasoline consumption of about 700,000 barrels per day as measured against 1976 consumption. The NEP stated that the existing automobile fuel economy standards were "insufficient to ensure the kind of reductions that are needed in the transportation sector," and proposed a number of new legislative initiatives to help achieve the goal. The most significant of these were a (1) "gas guzzler" tax, (2) rebate for the purchase of fuel-efficient cars, and (3) standby gasoline tax. Of the three major initiatives introduced, only the gas-guzzler tax was subsequently enacted into law.

The 10-percent gasoline reduction goal has since appeared in DOE's fiscal year 1979, 1980, 1981, and 1982 budget submissions. However, while the 10-percent figure itself remained unchanged, some underlying conditions and assumptions surrounding the figure changed markedly. In DOE's budget submission for fiscal year 1980, the base against which the reduction is measured was changed from "1976 consumption levels" to "consumption levels currently projected for 1985." As a result, DOE revised its energy savings estimates downward to 500,000 barrels a day. DOE's fiscal year 1981 budget proposal revealed another change in the time frame for achieving the objective from 1985 to "the near-term"--an undefined date beyond 1985.

Further, the actions purposed to achieve the goal also changed. The NEP 10-percent goal included savings from federally mandated fuel economy standards. However, the goal described in DOE's budget submissions excluded savings from these standards.

DOE's programs not expected to achieve goal

By DOE's own estimates, savings from its near-term gasoline conservation programs will fall far short of the stated goal. In a DOE conservation and solar strategy paper, estimates of gasoline savings for 1985 resulting from DOE's gasoline conservation programs total 0.12 quadrillion Btu's of energy, or only about 60,000 barrels per day of gasoline. This savings estimate represents only 12 percent of DOE's goal of 500,000 barrels per day. DOE transportation conservation program officials agreed that their near-term gasoline conservation programs alone would not

reduce projected gasoline consumption by 10 percent. They interpreted the goal as being an overall national target and that other factors, such as higher gasoline prices, would also contribute toward reaching the goal. However, the explanation of the 10-percent goal contained in DOE's last 3 budget requests clearly states that DOE's programs are expected to achieve the 10-percent savings. A program official agreed that such a conclusion could reasonably be drawn from the wording of the budget requests.

New DOE goals raise questions

In addition to the already existing 10-percent goal, DOE established, in late 1979, new State-by-State gasoline conservation goals. This raises questions about what direction DOE is heading since the two goals represented different approaches toward gasoline conservation, and DOE did not explain the relationship between the goals.

As discussed in chapter 1, DOE established State-by-State gasoline conservation goals for 1980, which in the aggregate, amounted to a nationwide gasoline consumption reduction of 5.5 percent from 1979 levels. DOE expected that the goals could be met through unspecified voluntary State-by-State gasoline conservation efforts.

There are important distinctions between the Federal gasoline conservation policy implications of pursuing the 10-percent goal and the State-by-State goals, which DOE did not adequately reconcile. DOE presented the 10-percent goal as the goal for its near-term gasoline conservation programs, so DOE's strategy in achieving the goal could be expected to be one of creating and implementing a number of nationwide DOE-administered programs designed to save gasoline. On the other hand, the State-by-State goals were presented as being achievable through individual State initiatives, so DOE's strategy in this instance might be one of providing technical assistance to States, monitoring their performance, and disseminating information on successful efforts to other interested States.

While achieving the State-by-State goals will obviously help in achieving the 10-percent goal, DOE's gasoline conservation role will differ depending on which of the two goals it is pursuing. However, when DOE introduced the new goals, it did not explain the implications that addressing one or both of the goals will have on the direction of its programs. DOE did not relate the new goals to the already existing 10-percent goal, or explain how its existing conservation programs could contribute to reaching the new goals.

DOE transportation conservation program officials believed there were no contradictions in pursuing the two different goals simultaneously, since furnishing technical assistance and encouraging States to develop conservation plans is a DOE function common to the pursuit of both goals. Also, the officials said that

the State-by-State gasoline conservation targets helped focus attention on gasoline conservation and thus resulted in increased interest in DOE's ongoing gasoline conservation programs.

We recognize that some of DOE's existing gasoline conservation programs could be used to help achieve both goals. Still, the setting of State-by-State goals was a significant departure from past DOE near-term gasoline conservation policies, and, as such, warranted a fuller explanation of its implications for DOE's existing goal and programs.

PROGRAM DEVELOPMENT AND IMPLEMENTATION DEFICIENCIES

DOE's failure to develop an overall strategy and to set meaningful goals to guide its near-term gasoline conservation programs has resulted in problems in the way DOE has developed and implemented its programs. Specifically, the need for DOE to provide more consistent and coordinated direction is evident by the piecemeal manner in which DOE has developed and implemented its near-term gasoline conservation programs, along with DOE's inconsistent emphasis of these programs.

Fragmented program development and implementation

DOE's fragmented approach toward development and implementation of its near-term gasoline conservation responsibilities has resulted in the Office of Transportation Programs' efforts being narrowly focused. In addition, new program responsibilities were undertaken without proper coordination with, and at the expense of, ongoing programs.

The Office of Transportation Programs' present array of near-term gasoline conservation activities does not provide comprehensive coverage of the range of near-term conservation opportunities. The Office's main programs are aimed primarily at providing information concerning conservation opportunities to (1) managers of automobile fleets through the DECAT program, (2) prospective purchasers of new cars through the new car mileage guides, and (3) persons interested in vanpools. These may all be worthwhile target groups to address, but together they represent only a small portion of the over 140 million licensed drivers in the United States.

In the past year, the Office of Transportation Programs was given some additional near-term gasoline conservation duties, but these new responsibilities were added without being properly coordinated with, and at the expense of, the ongoing programs. As discussed earlier in this chapter, DOE published State-by-State gasoline conservation reduction goals for 1980 but did not relate these goals to the already existing nationwide 10-percent gasoline reduction goal or explain how existing conservation programs could contribute to reaching the new State-by-State goals. In addition, the Office of Transportation Programs was assigned responsibility

for developing the State-by-State goals but was not given additional resources for this task, so funds had to be reprogrammed from other Office of Transportation Programs activities. Funds also had to be reprogrammed from other activities when the Office of Transportation Programs was given responsibility for conducting a series of driver efficiency teach-ins as part of the administration's National Energy Conservation Program, announced in April 1980. 1/

DOE transportation conservation program officials told us they are willing to shift resources to take advantage of new opportunities to promote their conservation messages, such as the two instances discussed in the previous paragraph. Given their limited funding, they choose to emphasize those areas that they believe are the most cost-effective. The officials also stated that most reprogrammed funds came from non-gasoline transportation conservation programs.

Funding and program emphasis inconsistent with stated importance

DOE officials have frequently emphasized the importance of conservation as part of the Nation's energy program, especially in the near-term. They have also stressed the key role that transportation conservation, especially the automobile, plays in the Nation's overall conservation efforts. Yet, DOE funding for near-term gasoline conservation programs is low in relation to (1) longer term DOE transportation conservation programs, (2) other DOE near-term conservation programs, and (3) private industry gasoline conservation promotional efforts. The contradiction between DOE's statements and its apparent program priorities raises questions about the direction DOE is providing in the gasoline conservation area.

Given DOE's emphasis on the importance of gasoline conservation, there is an apparent imbalance in funding in the transportation conservation area. A transportation conservation program official informed us that funds for near-term gasoline conservation programs have increased from about $1.5 million in fiscal year 1978 to about $2.6 million in fiscal year 1981. Still, $2.6 million represents only 2.3 percent of the overall Office of Transportation Programs' fiscal year 1981 budget of $113 million. Almost 88 percent of the Office of Transportation Programs' budget for fiscal year 1981 is going for vehicle propulsion and electric/hybrid vehicle research, development, and demonstration activities, which are not expected to provide near-term energy savings.

1/In April 1980, the President initiated an energy conservation outreach program, seeking to focus public attention on specific steps to take to save energy. The first phase of the program was directed to transportation conservation measures.

The priorities of two other conservation programs in DOE raise questions about DOE's commitment to near-term gasoline conservation. DOE's State Energy Conservation Program (SECP) and Energy Extension Service (EES) both have broad conservation mandates and are designed to extend DOE's reach by providing conservation grants to States. Specifically, SECP is designed to promote energy conservation by enabling the States to develop their own conservation plans, while EES is a Federal/State partnership to give personalized information and technical assistance to small-scale energy users on conservation and the use of renewable and less scarce resources. As such, both programs would be suitable for promoting gasoline conservation.

In practice, however, neither program has emphasized gasoline conservation. In SECP, most of the energy savings are expected to come from industry and buildings, with only 6 percent expected to come from transportation measures. EES went from a 2-year demonstration program in 10 States to full program status in all States during fiscal year 1980. Thus, there is not yet an extensive track record to judge EES by, but there was little emphasis during the demonstration phase on gasoline conservation measures. EES funding for fiscal year 1981 is $20 million, while SECP funding is almost $48 million. Both these dollar amounts greatly exceed the $2.6 million being spent currently by the Office of Transportation Programs on its near-term gasoline conservation programs.

A number of private firms, particularly oil companies, have recently engaged in gasoline conservation promotional advertising efforts, and we found that one company alone was spending more on such promotional activities than the $2.6 million being spent by DOE. Shell Oil Company has published several "Answer Books" on conservation including a recent one on gasoline conservation, and a Shell representative stated that his company spent about $8.5 million in 1980 on media expenditures related to the "Answer Books."

Near-term gasoline conservation also receives low priority Governmentwide, in terms of funding, when compared with total Federal energy education, extension, and information activities. DOE's third annual report to the Congress entitled "Comprehensive Program and Plan for Federal Energy Education, Extension and Information Activities," stated that for fiscal year 1980, 13 Federal agencies were operating approximately 80 programs with energy conservation outreach components, with total estimated expenditures of about $285 million. Activities addressing vehicle owners and operators, which would include near-term gasoline conservation, totaled only $10.6 million, or less than 4 percent of total conservation outreach expenditures.

LITTLE PROGRAM EVALUATION HAS TAKEN PLACE

In order for DOE to adequately direct its near-term gasoline conservation program, proper program evaluation must occur. DOE's programs have been continued from year to year with little evaluation of their impact. DOE program officials we interviewed recognize the importance of evaluating ongoing programs and stated that they are increasing their efforts in this area. To date, however, little has been accomplished.

Importance of program evaluation

Market research into drivers' awareness of DOE near-term gasoline conservation programs and changes in attitudes and actions toward gasoline use is crucial for evaluating if DOE's conservation programs are reaching their desired target audiences and how well the messages are being received. However, evaluating the impact of these conservation programs is extremely difficult. Many factors influence gasoline consumption, and trying to quantify savings attributable to a specific DOE conservation brochure or advertising campaign will be difficult.

Several DOE documents we reviewed cite the importance of program evaluation of Federal energy conservation outreach activities and the need to further emphasize program evaluation. DOE's "Comprehensive Program and Plan for Federal Energy Education, Extension and Information Activities" concludes that not enough emphasis has been placed on program evaluation. DOE's internal draft policy and fiscal guidance for use in preparing the fiscal year 1982 budget emphasizes the need for market research and evaluation of its conservation programs. Further, the Office of Transportation Programs' fiscal year 1980 operating plan has a section devoted to program evaluation, though the discussion is mainly about evaluating research and development projects, not information and outreach activities.

Some program evaluation occurred, but major improvements were not made

DOE's new car mileage guide program is an example of an area where DOE has done some program evaluation. The evaluation conducted, though, was a one-time study, and did not lead to major program improvements. DOE sponsored a study, published in June 1976, of the effectiveness of the new-car gas mileage label and guide. Significant findings of the study included the revelation that very few new-car buyers were aware of the mileage guide, but that those who were, obtained a significant increase in mileage over their older vehicle. Those new-car buyers unaware of the mileage guide achieved only a very small increase in their gas mileage. The study made recommendations for expanding dissemination of the information in the mileage guides, but DOE did not implement the recommendations. DOE did, however, make some changes to improve comprehension and awareness of the mileage guides.

Currently, DOE has underway another evaluation of the mileage guides, using information obtained from purchasers of 1978 and 1979 model new cars and light trucks. However, this will only be the second evaluation conducted since DOE started publishing the mileage guides in 1975. Such evaluations should be built into the program on a continuing basis rather than just occasionally.

The DECAT program is one of DOE's major near-term gasoline conservation programs, but DOE has done little to assess the impact of the program. DOE program officials were proud of the DECAT program and cited favorable comments from DECAT participants as evidence that the program was being well received. However, they do not formally follow up with DECAT graduates to learn if subsequent gasoline savings are achieved, nor do they even keep a file of correspondence containing any type of feedback from program participants. Program officials stated that currently they do have underway a limited evaluation involving two case studies of organizations that participated in the DECAT program.

Program officials recognize the need to do more follow-up, and stated that they have planned or ongoing several additional evaluation efforts. Given limited funding and staffing, their policy has been to emphasize disseminating as much information as possible.

Office of Transportation Programs intends to do more program evaluation

The director of the Office of Transportation Programs recognizes the need for more program evaluation and intends to do more in the future. The director has been in his present position for less than a year, and thus inherited the present array of programs. He informed us that he sees the need for his office, as well as the other conservation offices under the Assistant Secretary for Conservation and Renewable Energy, to develop a greater capability for program evaluation. Currently, he stated he has little basis for allocating resources among his programs other than past funding. He believes a more systematic approach is needed to enable him to prioritize his own programs, and also to enable the Assistant Secretary to choose the best programs from among all the conservation programs.

The director informed us that the capability to prioritize conservation programs is in the process of being developed. He stated also that he is in the process of developing methodologies for evaluating the effectiveness of the transportation conservation programs, although he is further ahead in developing methodologies for the research and development programs than he is with the near-term gasoline programs. Given the leadtime required in the budgeting cycle, it may not be until fiscal year 1983 before more program evaluation can be programmed into the transportation conservation budget. However, the director stated that he hopes to start sooner, using some discretionary funds in the fiscal year 1981 budget for program evaluation.

While the director recognizes the need to build program evaluation into his transportation conservation programs, there is no assurance that needed evaluation will occur. Given the facts that (1) the program evaluation plans are still preliminary at this point and (2) DOE has not accorded very high priority in terms of funding to near-term gasoline conservation activities, we are concerned that some program evaluation proposals may fall victim to higher DOE priorities. Therefore, it is important that the need for, and importance of, program evaluation also be recognized at higher departmental levels.

OVERALL STRATEGY NEEDED TO GUIDE NEAR-TERM EFFORTS

DOE needs to develop a comprehensive and systematic strategy to guide the development, implementation, and evaluation of its near-term gasoline conservation programs. An overall strategy should provide a framework around which to develop and coordinate all the programs, and would enable DOE to (1) systematically assess the range of conservation opportunities and establish appropriate goals, (2) determine how best to marshall DOE's resources to achieve the goals, and then (3) evaluate the effectiveness of the measures undertaken. A properly developed strategy should contain, as integral elements, program goals and program evaluation, thus correcting the deficiencies in these areas we have noted earlier in this chapter.

Some strategy elements already exist

DOE has undertaken studies containing parts of an overall strategy, but these studies do not contain all the elements needed. For example, DOE has prepared a "conservation and solar strategy" designed to (1) identify areas of conservation potential, (2) outline a strategy for exploiting this potential, and (3) examine the key programs that will ensure that the Nation's goals are achieved. This study will be useful in that it describes current transportation conservation programs and discusses some future initiatives that could be undertaken, but it is not detailed enough, in our opinion, to qualify as the comprehensive strategy we believe is needed. The document discusses potential savings from near-term gasoline conservation measures, but does not go into what specific actions DOE would take to bring about these savings. Similarly, the Office of Conservation and Renewable Energy statement of objectives for calendar year 1980, which describes the goals of the Office, gives near-term gasoline conservation goals in terms of numbers of pamphlets published and seminars held, rather than explaining what DOE expects to accomplish through these measures.

Elements of a near-term gasoline conservation strategy that DOE could build upon also exist in a study done in 1979 for the National Highway Traffic Safety Administration (NHTSA) entitled

National Energy Efficient Driving System (NEEDS). The purpose of that study was to devise a system that could

> "* * * reduce individual driver demands for fuel through voluntary changes in driver behavior, transportation patterns, and travel decisions with the minimum inconvenience and with no appreciable loss in mobility."

NEEDS was intended to be a marketing support program for existing public and private fuel-saving activities. It would (1) rely on instructional and mass media programs to educate drivers in fuel demand reduction practices; (2) be voluntary in nature, relying on persuasion rather than imposition of regulations; and (3) have programs targeted at specific audiences developed on the basis of the greatest fuel-saving potential.

The study contractor envisioned that NEEDS would be initiated through a two-phase effort, with phase I covering an analysis of requirements and phase II covering materials development and dissemination. The 1979 study addressed only phase I. NHTSA did not follow up and contract for the phase II study to be done, so NEEDS as originally envisioned remains only half completed.

We discussed the NEEDS study with Office of Transportation Programs officials, who stated that the contractor had first proposed the study to DOE but that DOE had no funds available. The officials were impressed with the NEEDS study and stated that the Office of Transportation Programs has used elements of it in helping plan their work in the transportation conservation area. However, DOE has no plans to fund phase II of the NEEDS study, as its emphasis has been on using its limited funds to disseminate as much information as possible. Neither does NHTSA plan to fund phase II, as such a study would be going beyond NHTSA's area of responsibility.

DOE should undertake an effort, similar to NEEDS, to systematically determine what DOE's direction and role should be for promoting near-term gasoline conservation measures. To avoid duplication, DOE, to the extent possible, should rely on the work done under phase I of the NEEDS study. This work could serve as a starting point for DOE to build from in creating a near-term gasoline conservation strategy.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATION

CONCLUSIONS

Gasoline consumption in the United States has decreased over the past 2 years, following years of almost uninterrupted growth. Factors affecting the decline include the 1979 gasoline shortage, dramatically higher gasoline prices, and continued improvements in automobile fuel efficiency. Federal automobile fuel efficiency standards and further gasoline price increases are expected to continue exerting a dampening effect on gasoline consumption in the future.

Potential for further gasoline savings remains, however. There are a number of additional measures automobile owners and drivers can take, at little or no expense, that can help achieve greater conservation savings and also help them deal with higher gasoline prices. These include accelerating improvements in vehicle fleet efficiency, applying fuel-efficient driving practices, and reducing the number of vehicle miles driven.

Based on the potential savings these measures hold, we believe there is a role for DOE to play in educating drivers about potential gasoline savings achievable, to the extent that desired information is not otherwise available from private sector sources. By promoting such measures, DOE can also help drivers cope with the apparent inevitability of higher future gasoline prices and help reduce the Nation's dependence on imported oil.

DOE's programs designed to encourage near-term gasoline conservation savings lack overall direction and focus, and while they may individually address appropriate conservation opportunities, together they are not part of any overall strategy. This lack of direction and focus is evidenced by (1) DOE's programs not supporting the goals DOE has set for near-term gasoline conservation savings, (2) inconsistency between DOE's statements regarding the importance of such savings and the low priority DOE has assigned to the area, and (3) DOE's failure to perform adequate program evaluations.

DOE should provide leadership to assure that existing near-term gasoline conservation opportunities are realized to the fullest extent possible. However, given gasoline price decontrol, recent gasoline consumption decreases, and particularly the planned cutbacks in funding for near-term gasoline conservation programs, DOE now needs to systematically assess its role in promoting gasoline conservation, and develop a strategy to guide its future efforts. Such a strategy should contain realistic measurable program

goals and provide for program evaluation. This strategy would serve to eliminate the fragmented approach and inconsistent priority treatment noted in this report.

Such a conservation strategy would also contribute to DOE's development of an overall energy conservation plan which we have recommended be undertaken several times, most recently last summer. 1/

RECOMMENDATION

We recommend that the Secretary of Energy systematically assess DOE's role in facilitating and supplementing private sector near-term gasoline conservation efforts. The results of the assessment should then be used to create a strategy to guide program development, implementation, and evaluation. In developing the strategy, the Secretary should consider programs and activities carried out by all DOE components having responsibility for near-term gasoline conservation. The strategy should also consider and build upon near-term gasoline conservation efforts of the private sector and other Federal agencies, most notably DOT.

AGENCY COMMENTS

DOE officials, in commenting on a draft of this report, stated that our report could be more constructive if more specific recommendations could be made concerning needed program improvements. We did not examine in detail the effectiveness of DOE's individual programs, but instead focused on the overall management of the programs concentrating on goals and program development, implementation, and evaluation. On this basis, we concluded that DOE should determine where near-term gasoline conservation programs fit as part of its future conservation efforts, and then develop an overall strategy to guide its activities. We believe such an assessment is now more appropriate than ever, given recent (1) actions which increased gasoline prices and (2) decisions to decrease funding for DOE's gasoline conservation-related programs.

1/Report to the Secretary of Energy, "Energy Conservation: An Expanding Program Needing More Direction," EMD-80-82, July 24, 1980.

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