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

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RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT DIVISION

B-218991

JUNE 6, 1985

The Honorable Edward J. Markey
Chairman, Subcommittee on Energy
Conservation and Power
Committee on Energy and Commerce
House of Representatives

Dear Mr. Chairman:

Subject: Overview of the Department of Defense's Progress in Achieving Energy Conservation (GAO/RCED-85-122)

In response to the request of the former Chairman of the Subcommittee, and as reaffirmed by your request of March 11, 1985, we obtained information on the efforts of the Department of Defense (DOD) to manage its use of energy. This work is a follow-on to our previous reports to the Subcommittee on the status of the Federal Energy Management Program (FEMP) and on the efforts of selected civilian agencies to manage their use of energy. (GAO/RCED-84-86, Mar. 7, 1984, and GAO/RCED-84-200, Sept. 21, 1984, respectively.) This report discusses the activities of the Army, Air Force, Navy, and Marine Corps, whose buildings and facilities account for about 70 percent of the energy used in all federal buildings and facilities. Marine Corps energy use is included with that of the Navy.

You asked that we provide you with information on DOD's progress in managing its use of energy, with particular attention to its progress in meeting four federally mandated energy conservation goals. The information we obtained is contained in enclosure I to this report, which discusses our objectives, scope, and methodology and provides a brief background on federal energy use and details on the results of our work.

DOD has made progress in managing its use of energy. In some instances, all three services have met energy conservation goals. In other instances, none of the services will meet goals or the degree of goal attainment varies. For example, from the information we obtained, we found that all three services have met the goal for a 30-percent reduction in petroleum use in buildings and were meeting the goal of making new buildings 45 percent more

energy efficient than existing buildings were in 1975. None of the services will meet the 1990 goal for energy conservation retrofits which involves improving energy use efficiency by modifying equipment or structures in existing buildings. Only the Army has met the goal of reducing energy use by 20 percent in existing buildings. In addition, DOD's purchases of new vehicles are generally meeting or exceeding fuel efficiency standards. Although all three services maintained the same level of staffing in their energy offices for the period 1981-84, funding for energy conservation projects declined over the same period.

The views of directly responsible officials were sought during the course of our work and are incorporated in the report where appropriate. We did not request DOD to review and comment officially on a draft of this report.

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As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time we will send copies to the Secretary of Defense; the Director, Office of Management and Budget; and the Chairmen of energy-related congressional committees. We will also make copies available to others upon request.

Sincerely yours,

J. Dexter Peach
Director

Enclosure

Contents

ILLUSTRATIONS

ABBREVIATIONS

Btu	British thermal unit
DEIS	Defense Energy Information System
DOD	Department of Defense
DOE	Department of Energy
ECIP	Energy Conservation Investment Program
FEMP	Federal Energy Management Program
GAO	General Accounting Office
MPG	miles per gallon

OVERVIEW OF THE DEPARTMENT OF DEFENSE'S PROGRESS IN ACHIEVING ENERGY CONSERVATION

INTRODUCTION

The federal government is the nation's largest consumer of energy, accounting for approximately 2.4 percent of the country's total energy use. Although total federal energy use was 1.6 percent less in 1984 than 1975, it increased 3.7 percent over fiscal year 1983, reaching 1.9 quadrillion British thermal units[1] (Btu's) at a cost of $11.7 billion. This was approximately $.9 billion less than in fiscal year 1983 and resulted from lower petroleum prices, particularly jet fuel. In fiscal year 1984 the Department of Defense (DOD) used 1,524 trillion Btu's, about one-third of it going to buildings and facilities--at a cost of $2.89 billion. DOD's buildings and facilities account for about 70 percent of all energy used in the federal government's buildings and facilities.

Since 1973 legislation and executive guidance have promoted energy conservation within the federal government. This guidance included requirements to (1) develop and implement an overall 10-year plan to conserve energy in the federal government, as well as individual agency 10-year plans, (2) meet mandated energy conservation goals, and (3) designate high-level departmental or agency personnel as principal conservation officers.

OBJECTIVES, SCOPE, AND METHODOLOGY

As requested by the Chairman, Subcommittee on Energy Conservation and Power, House Committee on Energy and Commerce, and as modified in discussions with his office, we obtained information on

- --DOD's progress in meeting energy efficiency requirements and achieving energy efficiency goals;
- --the energy conservation initiatives implemented by DOD compared with those described in its energy management plan;
- --the organization and management commitment that DOD is giving to its energy conservation program, including personnel and budget levels;

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[1]A British thermal unit is a unit of heat equal to 252 calories, the quantity of heat required to raise the temperature of 1 pound of water from 62 degrees to 63 degrees Farenheit.

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--the actions taken by DOD to assure the reliability and accuracy of energy conservation data it reports to the Department of Energy (DOE);

--the potential savings estimated by DOD from implementing its energy management plan;

--the procedures used by DOD to identify and obtain funding for energy conservation retrofit projects;

--the extent, if any, to which DOD's Energy Conservation Investment Program (ECIP)[2] is being used to fund nonconservation-related projects; and

--the fuel efficiency ratings of automobiles and general purpose trucks under 8,500 pounds purchased by DOD.

Specifically, we (1) reviewed legislation and executive orders relating to federal energy use, (2) reviewed the overall Defense Energy Management Plan and the plans of the individual military services, (3) interviewed DOD energy management officials, (4) interviewed military service officials responsible for developing, implementing, and monitoring service energy plans and programs, (5) reviewed DOD records and files pertaining to energy programs and energy use, and (6) reviewed DOE's overall reports on federal energy use and trends.

Our review included all four Defense services--the Army, Air Force, Navy, and Marine Corps. In this report, Marine Corps energy use and information is included in the data for the Navy. In order to gather, in a timely manner, comparable energy use information from each of the services, we designed a questionnaire for use in conducting structured interviews with key officials in each of the services.

Our review focused on the services' progress in meeting energy efficiency requirements and achieving energy efficiency goals, from the time the goals were established through fiscal year 1984. With respect to DOD's organization and management commitment to energy conservation, we obtained data on staffing and funding made available for energy conservation. We also obtained information on the

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[2]ECIP was established in fiscal year 1976 to conserve energy at DOD facilities by modifying energy-intensive systems and design deficiencies through retrofit projects.

reliability and accuracy of conservation data and determined the extent to which estimates had been made of potential energy savings. Further, we obtained information on DOD's use of funds appropriated for fiscal years 1981 through 1984 energy conservation projects and the use of funds for energy conservation retrofit projects. We also obtained information on fuel efficiency standards for fiscal years 1977 through 1986 and, as requested, compared DOD's purchases of automobiles and trucks under 8,500 pounds for fiscal years 1981 to 1984 with the standards.

As requested by the Chairman's office, we did not perform an overall evaluation of the services' energy conservation programs; rather, we obtained available information in response to the Chairman's concerns on certain aspects of these programs. We relied on service files and discussions with service officials, particularly energy coordinators, in preparing this report. Also, as agreed with the Chairman's office, we did not independently determine the reliability and accuracy of energy use data reported by DOD or the potential energy savings from implementing DOD plans; instead, we limited our review to obtaining information on the services', DOD's, and DOE's FEMP office actions to validate data and the services' estimates of energy savings that might result from implementing their plans.

Our review work was conducted between January and April 1985 in accordance with generally accepted government auditing standards. The views of directly responsible officials were sought during the course of our work and are incorporated in the report where appropriate. At the Chairman's request, we did not request DOD to review and comment officially on a draft of this report.

PROGRESS IN MEETING ENERGY EFFICIENCY GOALS

Federal agencies have four mandated goals for reducing energy use: two for existing buildings, one for new buildings, and one for petroleum use. These goals are to

--reduce energy use by 20 percent per gross square foot in existing buildings by 1985,

--make cost-effective energy conservation retrofits by 1990,

--make new buildings 45 percent more energy efficient than existing buildings were in 1975, and

--reduce petroleum usage in buildings by 30 percent by 1985.

20-percent reduction in energy use in existing buildings

In 1977 the President established, through Executive Order 12003, a goal of reducing energy use by an average of 20 percent in existing federally owned buildings by 1985. The goal is based on the average annual energy use in 1975 per gross square foot of space.

On the basis of a review of energy use data and discussions with service officials, we found that only the Army has met the 1985 goal as of the end of fiscal year 1984. According to information provided by service energy coordinators, the following table shows the progress made by each service toward meeting the 1985 energy-reduction goal.

Status of 20-Percent Energy Reduction Goal for Existing Buildings

Service	Reduction through fiscal year 1984 (percent)
Army	20.0
Navy	9.5
Air Force	14.7

Cost-effective retrofits by 1990

The National Energy Conservation Policy Act (Public Law 95-619), enacted in November 1978, requires federal agencies to perform energy audits of government-occupied buildings and facilities and make all cost-effective energy conservation retrofits by 1990. Cost-effective retrofits are those where the savings derived over the remaining life of the building exceed the cost of undertaking the measure. None of the three services will meet this goal.

On the basis of discussions with individual service energy coordinators and DOD's facilities coordinator, we found that none of the services will meet the 1990 goal because the high cost of making all retrofits made the goal unattainable. In addition, none of the services has attempted to identify all life-cycle cost-effective retrofit measures. However, DOD internal guidance emphasizes retrofit projects where cost recovery (payback) can be achieved in 10 years or less.

Energy coordinators informed us that most projects have pay-back periods considerably under 10 years. According to the Assistant for Facilities Energy in the Defense Energy Programs Office, the average payback since inception of the ECIP program has been less than 5 years.

45-percent reduction for new buildings

Executive Order 12003 established a 45-percent energy reduction goal per gross square foot for all new federally owned buildings. This goal applies to all new buildings for which construction was not completed prior to November 9, 1978, and the design of which could feasibly be modified after November 14, 1979. The percentage reduction goal is based on 1975 building energy use.

Energy coordinators for the three services told us that they were meeting the 45-percent goal, but the Army was unable to provide an energy savings figure or data on the number of new buildings constructed. The Army energy coordinator told us that based on a computer model analysis of its building design standards, the Army was meeting the goal--but he was unable to provide any data on building operations. From 1980 through the end of fiscal year 1984, the Navy built approximately 240 buildings and reported an energy savings level of about 54 percent. The Air Force constructed about 17 million square feet of new space and reported a reduction of 47 percent compared with 1975 levels.

30-percent reduction in petroleum use

DOE, in instructions to agencies for developing 10-year buildings plans, established a goal of reducing petroleum-based fuel consumption in buildings 30 percent by fiscal year 1985, based on fiscal year 1975 petroleum consumption levels. As shown in the following table, according to data provided by the service energy coordinators, each of the services has already met the goal, as of the end of fiscal year 1984.

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Status of Reducing Petroleum-Based Fuel Use by 30 percent

Service	Reduction through fiscal year 1984 (percent)
Army	37.9
Navy	43.0
Air Force	33.1

COMPARISON OF SERVICE PLANS WITH IMPLEMENTATION

The Energy Policy and Conservation Act (Public Law 94-163) requires the development of an overall 10-year plan to conserve energy in federal buildings. DOE has responsibility for developing this overall federal plan, which provides a summary of individual agency 10-year building plans. Agency conservation activities are intended to be carried out in accordance with individual agency building plans, which Executive Order 12003 requires agencies to develop and submit to DOE.

An overall Defense Energy Management Plan sets goals and establishes policy for DOD. In terms of the buildings goals discussed on page 3 of this enclosure, guidance and directives are provided for the accomplishment of the goals. Within this overall plan, each service developed an operational energy management plan. However, the individual service plans address building goals in broad terms without identifying specific projects that would contribute to achieving the goals.

In the absence of project-based milestones, an indication of the services' efforts to implement their plans are technical audits. A technical audit is a survey of a building conducted to identify energy conservation measures which can be undertaken and is an initial step in plan implementation. Of the three services two--the Army and the Navy--have completed audits of their buildings and facilities. However, two Army installations which were planned for closure did not receive audits. The Air Force plans to have audits of its buildings and facilities completed by fiscal year 1987. As of February 1985, 67 percent of the audits had been completed.

ORGANIZATION AND MANAGEMENT COMMITMENT

Although responsibility for DOD's conservation program rests with its principal conservation officer, day-to-day operations are under the overall direction of the three military services. We obtained information on the organizational placement of the energy function within the services, staffing available for energy conservation activities, and funding for the ECIP.

Organizational placement of the energy function

The DOE Organization Act (Public Law-95-91) required the heads of certain agencies and departments to designate an assistant secretary or an assistant administrator to be the agency's principal conservation officer. In DOD, the principal conservation officer is the Assistant Secretary for Manpower, Installations, and Logistics who is responsible for planning and implementing DOD's conservation program.

To encourage coordination among the principal conservation officers and support federal agencies' conservation efforts, DOE established the Interagency Federal Energy Policy Committee. We previously reported[3] that the principal conservation officers were typically not attending committee meetings. Instead, lower level staff, such as energy coordinators, were attending in their places. At the committee meeting held on May 8, 1984, the Secretary and Under Secretary of Energy emphasized the need for high-level agency designees to attend these meetings in order to demonstrate an agency's commitment to aid support for its energy program. Concerning DOD's attendance at and support of committee meetings, the principal conservation officer does not attend. Instead, an individual on the staff of the Deputy Assistant Secretary for Logistics and Materiel Management attends. In addition, energy coordinators with various responsibilities (facilities, mobility, transportation, logistics) in the Defense Energy Programs Office also attend in his place. Thus, the individual who usually attends the meeting is two levels removed from the principal conservation officer.

Overall operating responsibility for energy programs in DOD rests with the energy offices of the three military services. Within the Office of the Assistant Secretary of Defense for Manpower Installation and Logistics, the Deputy Assistant Secretary (Logistics and Materiel Management), through the Defense

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[3]Status of the Federal Energy Management Program (GAO/RCED-84-86, Mar. 7, 1984).

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Energy Programs Office, coordinates the development of energy policy and the oversight of energy programs. Various counsels, panels, and working groups at the departmental level provide advice in the development of policy, implementation of these policies, and the flow of energy management information. However, each service develops and carries out its own energy program.

Staffing for conservation programs

We obtained information on the staffing for each of the services' energy offices as of the end of fiscal year 1984. Each of the services' energy offices had responsibilities for areas other than energy conservation, but one person was assigned as a full-time energy coordinator. In addition, each service also had an engineering group responsible for providing technical support for energy conservation. The engineering support is not included in the staffing figures we obtained. The following table shows the total staffing for the energy offices and the number of staff with energy conservation responsibility.

	Staffing as of end of FY 1984	
	Total	Energy conservation
Army	9	1
Navy	6	1
Air Force	8	1

The other persons in the three offices had responsibilities for matters such as fuel storage, fuel accounting, fuel supply, ship and air conservation, budget, and support.

We asked the service energy coordinators about staffing in their offices prior to fiscal year 1984. The only change in energy staffing for the services over the 1981-84 period occurred when the Army transferred two positions from headquarters to a field location. These were both energy positions and are still responsible to the head of the Army energy office.

According to an official of the Defense Energy Programs Office, at the DOD level the number of people in the energy program office has remained constant at a total of five over the 1981-84 period. One of these has specific responsibility for energy conservation in military facilities. For a period of about 1 year this position remained vacant.

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Energy conservation investment program funding

We obtained funding information on ECIP. ECIP was established in fiscal year 1976 to conserve energy at DOD facilities by modifying energy-intensive systems and design deficiencies through retrofit projects. While some energy conservation activities are also funded through maintenance and operations activities, the amounts are usually small and included in the overall budget for maintenance and operations.[4] During fiscal year 1981 through 1984, ECIP funding in each of the services declined.

The following table shows funds appropriated to each service for ECIP and the amount of funds for projects cancelled.

Energy Conservation Investment Program Funding FY 1981-84

	Army		Navy		Air Force		Total	
FY	Appropriated	Cancelled	Appropriated	Cancelled	Appropriated	Cancelled	Appropriated	Cancelled
	(000 omitted)							
1981	$ 83,436	$13,774	$ 48,000	$ 200	$ 62,160	$17,274	$193,596	$31,248
1982	92,445	9,137	58,400	700	57,185	4,028	208,030	13,865
1983	62,680	6,350	38,900	700	74,270	7,108	175,850	14,158
1984	55,533	1,810	5,500	-	43,618	3,650	104,651	5,460
Total	$294,094	$31,071	$150,800	$1,600	$237,233	$32,060	$682,127	$64,731

As shown above, of the $682.13 million appropriated to the three services for fiscal years 1981-84, projects in the amount of $64.73 million, or about 9.5 percent, were cancelled. For further information on cancellations, see page 11.

[4]These are changes which involve little or no capital investment, such as improved operation and maintenance practices or physical retrofit projects not large enough to qualify for ECIP funding.

RELIABILITY AND ACCURACY OF ENERGY CONSERVATION DATA

DOD reports energy use quarterly to DOE's FEMP office. DOE compiles these data into an annual report that outlines activities, progress, and achievements of federal agencies' energy conservation programs. We obtained information on what DOD, the military services, and DOE do to verify energy conservation data.

Energy data is submitted by the military services to a central DOD system called the Defense Energy Information System (DEIS), a worldwide automated management information system designed to aggregate, process, and report military energy data. DEIS is comprised of two subsystems: one for petroleum products and the other for facilities energy consumption. We focused our study primarily on facilities.

According to the services' energy coordinators, energy use data flows up from military installations and bases to the central DOD system. Each month the services submit data from over 1,400 reporting activities to DEIS. According to the energy coordinators, the Navy and Air Force data is consolidated and a single input is sent directly to DEIS; however, Army data is forwarded through each of the Army's 19 major commands.

Energy use data is checked both by DOD and each of the services. Energy data is checked centrally at DOD by comparing current data with historical data and checking for variations from historical trends or levels. Any discrepancies are flagged and the originator is asked to explain the difference.

We discussed data verification with energy coordinators from each of the services. Each of the services use similar data verification methods consisting primarily of a review of the data to identify inconsistencies and discrepancies with past data. A 1983 Defense Inspector General report[5] concluded that reported data on consumption of energy for facilities were reliable.

In addition, DOE's FEMP office performs limited verification. FEMP officials said that the FEMP staff manually checks the energy use data reported to DOE by DOD and other agencies for inconsistencies and follows up with the agencies when data show questionable variations from previous submissions. As we reported[6]

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[5]Defense Energy Information System, report No. 83-096, April 6, 1983.

[6]Overview of Selected Civilian Agencies' Progress in Achieving Energy Conservation (GAO/RCED-84-200, Sept. 21, 1984).

previously, a FEMP official told us that limited FEMP resources prevent independent verification of agency energy data.

ESTIMATES OF POTENTIAL ENERGY SAVINGS

Your letter asked if estimates had been made of potential savings from implementation of DOD's energy management plans. Neither the individual military service plans nor the overall DOD energy management plan contained an estimate of the total potential energy savings available in DOD buildings and facilities. In addition, the service energy coordinators told us that they had not prepared estimates independent of the plans.

Although there are no estimates concerning future potential energy savings, Army and Navy officials believed that a goal of an additional 10-percent reduction in facilities energy use between fiscal years 1985 and 1995 was reasonable.

FUNDING FOR ENERGY CONSERVATION RETROFITS

As discussed on page 4 of this enclosure, although the National Energy Conservation Policy Act requires federal agencies to make all cost-effective retrofits in federal buildings and facilities by 1990, none of the military services has undertaken any retrofit projects with payback periods in excess of 10 years. While the Army and Navy have completed audits of all eligible buildings, and the Air Force plans to complete audits by 1987, none of the services has attempted to identify all life-cycle, cost-effective retrofit measures. In the absence of identifying all measures, the services have not prepared estimates of the total funding required to implement the goal.

ECIP FUNDS AVAILABLE FOR NONCONSERVATION PROJECTS

Your letter also asked that we identify the extent, if any, to which DOD's ECIP is being used to fund nonconservation projects. As specified during discussions with your office, our work on this issue was to be limited to updating two funding summary tables included in a January 1982 GAO report[7] on the ECIP program--to the extent information readily available from DOD permitted us to do so.

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[7]The Department of Defense's Energy Conservation Investment Program Needs Closer Monitoring, (EMD-82-4, Jan. 13, 1982).

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Our previous report was concerned with funds made available for reallocation within the military construction appropriation account to nonconservation or other ECIP projects when projects were cancelled, deferred, reduced in scope, or completed at a final cost under the amount appropriated for the project. The overall concern was that to the extent such funds become available from energy conservation projects for other nonconservation military construction projects, it represents a shift away from conservation objectives. Our earlier report indicated that DOD's use of ECIP funds was not fully consistent with the intent of congressional oversight committees that funds intended for conservation efforts be spent on conservation projects.

The two tables in our prior report summarized (1) funds appropriated to each service for ECIP and (2) ECIP funds made available to other projects (both other ECIP and nonconservation projects) resulting from project cancellation, deferral, reduction-in-scope, or completion at a cost less than the amount appropriated. We updated the prior data by obtaining information on projects cancelled. Information on funds made available for other reasons--deferrals, reductions-in-scope, and cost overruns/underruns--was available only on an aggregate basis.

As discussed on page 9 of this report, about 9.5 percent of ECIP funds for fiscal year 1981-84 projects were cancelled. The following table summarizes ECIP funding from fiscal year 1976 to fiscal year 1985 and shows (1) the number of projects approved, (2) funds appropriated, (3) number of projects cancelled, (4) dollar value of projects cancelled, and (5) the aggregate amounts of deferrals, reductions-in-scope, and underruns/overruns. Cancellations for the entire period amounted to about 8.5 percent of the total appropriation. Deferrals, reductions-in-scope, and underruns/overruns represented about 8.6 percent of the total.

Defense Energy Conservation Investment Program
FY 1976-1985

	Fiscal Year										
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	Total
	($ millions)										
Number of projects approved	396	272	121	186	140	344	334	295	165	138	2,391
Appropriated	$126.377	$160.721	$85.431	$139.130	$123.930	$193.596	$208.030	$175.850	$104.651	$137.231	$1,454.947
Number of projects cancelled	69	23	9	22	12	47	30	35	13	4	264
Amount appropriated for projects cancelled	$16.615	$8.855	$2.996	$19.107	$7.000	$31.248	$13.865	$14.158	$5.460	$4.519	$123.823
Deferrals, reductions-in-scope, underruns/ overruns	(4.679)[a]	$24.925	$10.012	$11.490	$15.087	$13.276	$19.115	$21.997	$11.771	$2.209	$125.203

[a]Negative number means that funds from nonconservation military construction projects were made available to ECIP projects.

Source: Defense Energy Programs Office.

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FUEL EFFICIENCY OF VEHICLES PURCHASED FOR THE MILITARY SERVICES

Federal agencies are required to meet certain established miles per gallon (MPG) fuel efficiency standards when purchasing vehicles. The goal has generally increased each year since fiscal year 1977 for passenger vehicles and since 1980 for light trucks. In fiscal years 1982 and 1983, vehicle purchases for each of the services met or exceeded the standards, except for purchases of light trucks for the Air Force in fiscal year 1983.

For automobiles, amendments to the Motor Vehicle Information and Cost Savings Act (Public Law 94-163, enacted on December 22, 1975), require that passenger vehicle acquisitions in a given fiscal year meet the fleet average fuel economy standard[8] or the corporate average fuel economy standard[9] imposed on automobile manufacturers, whichever is greater. In fiscal year 1982, the fleet standard was adjusted to be the same as the corporate average fuel economy standard--which was lower. The following chart shows the applicable standards for automobiles for fiscal years 1977-1986.

Automobile Fuel Efficiency Standards

Fiscal year	Corporate average fuel economy (mpg)	Fleet average fuel economy (mpg)
1977		18.0
1978	18.0	20.0
1979	19.0	22.0
1980	20.0	24.0
1981	22.0	26.0
1982	24.0	24.0
1983	26.0	26.0
1984	27.0	27.0
1985	27.5	27.5
1986	27.5	27.5

For light trucks, the fleet average fuel economy standards were initially established by Executive Order 12003 in 1977 and

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[8]The fleet average fuel economy standard was the performance standard that specified a minimum level of average fuel economy applicable to federal vehicles.

[9]The corporate average fuel economy standard is the performance standard that specifies a minimum level of average fuel economy which is applicable to a manufacturer in a model year.

revised in 1980 when the gross vehicle weight rating for light trucks was raised from 6,000 to 8,500 pounds. The standard for four wheel drive trucks increased from 14 MPG in 1980 to 19.5 MPG in 1986. The standard for two wheel drive trucks also had a general increase for the same period from 16 MPG to 20.5 MPG except for 1985 when the standard was reduced from 20.3 MPG to 19.7 MPG. The following table shows the standards for light trucks for fiscal years 1979-86.

Light Truck Fuel Efficiency Standards

Fiscal year	Two wheel drive (mpg)	Four wheel drive (mpg)
1979	17.2	15.8
1980	16.0	14.0
1981	16.7	15.0
1982	18.0	16.0
1983	19.5	17.5
1984	20.3	18.5
1985	19.7	18.9
1986	20.5	19.5

The General Services Administration purchases automobiles and light trucks for all executive agencies and is responsible for meeting the applicable standards. We obtained the following information for vehicle purchases for DOD in fiscal years 1982 and 1983. General Services, after conducting a thorough search of its files, was unable to locate the data on vehicle purchases for 1981 and, at the time we concluded our work, had not completed compilation of data for 1984. The following table shows, by military service, the applicable standards and actual MPG rating of vehicle purchases for fiscal years 1982 and 1983.

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Comparison of Fuel Efficiency of Military Vehicles Purchased With Standards - FY 1982-83

		Passenger cars			Light trucks					
					Two wheel drive			Four wheel drive		
	Fiscal Year	No. of vehicles	Actual MPG	MPG standards	No. of vehicles	Actual MPG	MPG standards	No. of vehicles	Actual MPG	MPG standards
Army	1982	1,209	28.4	24.0	2,490	25.9	18.0	28	16.3	16.0
	1983	876	29.0	26.0	7,957	22.7	19.5	72	18.0	17.5
Navy	1982	66	28.3	24.0	1,172	24.9	18.0	39	16.0	16.0
	1983	213	27.3	26.0	1,811	23.4	19.5	24	18.7	17.5
Air Force	1982	182	29.0	24.0	1,146	24.8	18.0	0	-	16.0
	1983	393	30.1	26.0	2,831	17.7	19.5	776	15.9	17.5

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