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STATEMENT OF
J. DEXTER PEACH
DIRECTOR, ENERGY AND MINERALS DIVISION
BEFORE THE
SUBCOMMITTEE ON PUBLIC BUILDINGS AND GROUNDS
OF THE
HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
ON
ENERGY CONSERVATION IN FEDERAL BUILDINGS:
THE DEPARTMENT OF ENERGY'S ROLE

Hse 3104

Mr. Chairman and Members of the Subcommittee:

GAO welcomes the opportunity to be here today to discuss with you the results of our examinations of the Department of Energy's (DOE) efforts to manage Federal energy conservation. During the past two years we have issued numerous reports in this area A synopsis of these reports is included as Attachment I. Our testimony will focus on two aspects--energy conservation in Federal buildings and facilities and the use of solar technology in such buildings and facilities.

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LACK OF A NATIONAL ENERGY CONSERVATION PROGRAM

Before discussing DOE's efforts in these two areas, let me spend a few moments addressing the Nation's continuing reluctance to develop an effective energy conservation strategy. Our reliance on crude oil imports has increased substantially in recent years and could reach 12 or 13 million barrels per day by 1985.

Last winter's Iranian oil cutoff is only one of a series of events which jarred our complacency. More recently, indications of vastly higher prices for, and shortages of, home heating oil for the winter and predictions of gasoline lines next spring underscore the importance of moving forward in the energy conservation area.

The Nation must face up to the reality that we can not continue to rely on short-term crisis management in the energy area and that now is the time to get our energy conservation act together.

We believe a strong, coordinated national energy conservation program can not only mitigate the adverse impacts of future Iranian-type situations, but more importantly it would reduce the likelihood of oil embargoes being used as a weapon against the United States. Further, a strong conservation program is also needed to allow an orderly transition to renewable resources. In a February 13, 1979, letter to the

Chairmen of energy-related Committees and Subcommittees we highlighted the following three overriding problems which, in our opinion, must be solved before the Nation will achieve any significant level of energy conservation:

--A lack of specific planning and direction from the Government in the energy conservation area. We have reported that the Federal Government has not developed an overall energy conservation strategy for the Nation. While DOE generally agreed with our position, no strategy has been forthcoming.

--The failure to develop in a timely manner, and have approved by the Congress, emergency energy conservation gasoline rationing plans.

--The absence of an aggressive, coordinated effort by the Government to conserve energy in its own operations and facilities.

In view of the importance of energy conservation as part of the Nation's energy policy, let me discuss briefly the need for Federal conservation efforts.

THE NEED FOR FEDERAL ENERGY CONSERVATION

The Federal Government has a unique opportunity not only to conserve vast amounts of energy but to serve the Nation as an example by aggressively pursuing conservation

throughout its many and varied operations. Today, the Government is the Nation's largest single energy user, accounting for over 2 percent of U.S. energy consumption. This represents the equivalent of about 282 million barrels of oil worth almost $4 billion a year. This energy is used within the Federal sector by almost six million people, in more than 400,000 buildings, and in operating more than 650,000 vehicles of all types.

In addition, the Government uses much energy indirectly through other activities. A RAND Corporation study indicates that from 4 to 7 percent of total national energy consumption is in support of the Government's purchase of goods and services. Consequently, the Federal Government can exert influence far beyond its relative size and overall consumption level.

To date, most Federal Government energy savings have been achieved through relatively simple measures such as reducing equipment operating hours, adjusting thermostats, turning off lights, and some actions to retrofit existing buildings to make them more energy efficient. DOE has reported that Federal energy use between 1973 and 1975 was reduced by over 26 percent. Since 1975, however, energy reductions have not been so dramatic. In fact, the most current data reported by DOE shows that between 1976 and 1977 there was an increase

in Federal energy use of over 2 percent. This upward trend in energy use indicates to us that the Federal Government is not doing enough to conserve energy.

CONSERVATION IN FEDERAL BUILDINGS AND FACILITIES

We believe the Federal Government's efforts to conserve energy in its buildings and facilities have not achieved their full potential largely because DOE has made an insufficient commitment to the Federal Energy Management Program. This program is the Government's response to its own need to manage and control energy use. DOE has failed to fulfill the planning requirements mandated by legislation and executive orders and has failed to fully embrace its role in Federal energy conservation, as envisioned by the Congress.

The Energy Policy and Conservation Act (Public Law 94-163), dated December 22, 1975, requires the President to develop and implement a 10-year plan to reduce energy use in Federal buildings. This plan is to include mandatory lighting efficiency standards, mandatory thermal efficiency standards and insulation requirements, restrictions on hours of operation, thermostat controls, and other conditions of operation. Executive Order 11912, issued in April 1976, and amended by Executive Orders 12003 in July 1977 and 12038 in February 1978, requires DOE to develop the plan called for by the law. Further, Executive Order 12003 establishes energy reduction goals of

20 percent for existing buildings and 45 percent for new buildings. Each of these legislative and executive actions clearly implies strong management and policy direction with respect to energy conservation in Federal buildings and facilities. As of today, however, almost four years since the law was passed, the Federal Government has no approved 10-year plan for its buildings and facilities.

DOE has declined to take a leadership role in promoting conservation within the Federal Government. The result is a fragmented Federal Government energy conservation approach with needless duplication of effort among agencies. For example, we reported that duplicate testing has occurred because no single agency is responsible for coordinating evaluations of energy conserving devices. We found that one device for increasing the efficiency of some air conditioners has been separately evaluated and found effective by GSA, the Air Force, and the Navy. DOE declined to accept responsibility for coordinating evaluations of such energy saving products.

With respect to the selection and funding of energy conservation projects in Federal buildings, our work has shown that some of the most effective conservation projects have not been funded and that energy conservation funds have been used for other purposes. Prior to FY 1979 agencies were

generally permitted to request and use funds as they determined appropriate. We found instances where funds requested by DOD and GSA for energy conservation were used for projects in other areas. For example, DOD has used about 20 percent, or $68 million, of the funds provided for its Energy Conservation Investment Program for other purposes. We have recommended that DOE seek legislation which provides that all such funds be appropriated to DOE or that requires agencies to identify and dedicate within their budgets the specific funds to be used for energy conservation projects.

In November 1978, the Congress enacted the National Energy Conservation Policy Act (Public Law 95-619). This Act, for the first time, requires each agency to conduct energy audits for identifying Federal building retrofit projects and to request budget funds for such projects on a line item basis. While we believe that line item budgeting called for in the new energy legislation is beneficial, it will not guarantee that funds requested for energy conservation projects will be restricted for such use. An agency could request funds in the name of energy conservation and thereafter, in the absence of some legislative restriction, such as a line item in an appropriation act, reprogram the funds for other purposes. We believe that central project approval and funding through DOE would provide more assurance that energy conservation funds are being optimized and effectively used.

Although DOE has not fulfilled its planning responsibilities, individual Federal agencies have implemented energy conservation measures and have reported energy savings. The Department of Defense in 1976 established a multi-year Energy Conservation Investment Program to retrofit its existing facilities to make them more energy efficient. Funding for the entire program is projected to be over $1 billion and DOD expects this effort to reduce energy use in its existing buildings by 12 percent. This is a substantial part of the 20 percent energy reduction goal required by Executive Order 12003.

THE SOLAR IN FEDERAL BUILDINGS DEMONSTRATION PROGRAM

With respect to the use of solar technology, DOE has developed neither a comprehensive plan nor a strategy to guide solar energy efforts in Federal buildings. Further, DOE does not appear to be giving the Federal buildings solar program the support necessary to achieve its ambitious objectives.

The President proposed in his National Energy Plan that the Federal Government demonstrate its confidence in solar technology by undertaking a 3-year program of up to $100 million for the installation of solar equipment in Federal buildings. The purpose of the Solar in Federal Buildings Demonstration Program was to give the Federal Government a leadership role in reducing the consumption of conventional

fuels and demonstrating the feasibility of widespread solar energy use. The National Energy Conservation Policy Act authorized up to $100 million for this program.

In his June 20, 1979, message on solar energy that was sent to the Congress, the President set a national goal of meeting 20 percent of the country's energy use with solar and renewable resources by the end of this century. The Solar in Federal Buildings Program was cited as demonstrating the Federal Government's confidence in solar systems and setting an example for other energy users. Under this program, the President expects that an estimated 350 solar systems will be placed in Federal buildings and facilities by the end of fiscal year 1980.

These legislative and executive actions clearly imply strong leadership responsibilities with respect to energy conservation and the application of solar technology in Federal buildings and facilities. However, based on our review of the many conservation and solar programs for Federal buildings, we believe that DOE is not fully embracing these responsibilities and that the Solar in Federal Buildings Demonstration Program will be implemented in isolation from other conservation and solar efforts for Federal buildings.

Program activities within DOE to promote energy conservation are separate from those to demonstrate the use of solar energy in Federal buildings. Although these programs are located under the Assistant Secretary for Conservation and Solar Applications, no effective coordination exists. The offices responsible for conservation in Federal buildings are not working closely with the offices responsible for the promotion of solar energy.

Further, DOE's March 1979 draft of the 10-year plan for energy conservation in Federal buildings, and its proposed rules for life cycle cost analyses and preliminary energy audits, give limited and somewhat conflicting guidance to agencies on the use of solar technology. DOE's draft 10-year plan does not present the use of solar technology as a viable conservation option. The draft plan indicates that one strategy for achieving energy savings in Federal buildings is the substitution of renewable resources (principally active solar collector retrofit projects) for conventional fuels. However, the draft plan requires that agencies only consider the use of solar devices and seems to unduly emphasize that present solar collector costs and efficiencies make all but hot water heating prohibitive from the life cycle cost criterion for retrofit projects for existing buildings. The draft plan does not recognize

that a special funding mechanism, the Solar in Federal Buildings Demonstration Program, is in existence and could possibly be used to fund the solar costs above the cost effectiveness limitations.

DOE's proposed rules for preliminary energy audits of Federal buildings, issued on April 26, 1979, also appear to contradict the intent of the National Energy Conservation Policy Act to promote retrofit projects which include energy conservation measures and solar technology. Moreover, the rules, as drafted, will not fulfill the President's expectations that these audits will identify the extent to which the Federal Government can use solar equipment beyond applications already underway. The rules provide that only limited data would be collected for the larger Federal buildings (those with 30,000 or more gross square feet), whereas extensive data would be collected for smaller Federal buildings (those with less than 30,000 gross square feet). We believe that the data requirements should be consistent for all buildings, regardless of size, in order to maximize the impact that the use of solar technology can have.

We are concerned that DOE does not appear to be fully committed to the Solar in Federal Buildings Demonstration Program even though it represents a significant commercialization effort. Not only is DOE failing to develop the program

in the context of a larger, more comprehensive Federal buildings efforts, but we believe it is also not giving this program its full support. The Department is relying on external resources, the National Aeronautics and Space Administration (NASA), for basic management and staff support functions, rather than developing an in-house capability and the technical expertise to develop and implement future programs.

Further, DOE has not requested the full funding authorized by the Congress under NECPA, nor an extension of the program to the 3-year period originally proposed by the President.

DOE NEEDS TO FULFILL ITS PROGRAM MANAGEMENT AND LEADERSHIP RESPONSIBILITIES

We are concerned about the lack of direction and overall management effort that DOE is giving to the Federal conservation program. In this regard, DOE is apparently confused over the role it is to play. This role should be clear, since one reason for establishing DOE, as stated in the DOE Organization Act (Public Law 95-91), was to achieve effective management of Federal energy functions including coordinating energy policies and promoting energy conservation measures.

In spite of such legislation, the Department has consistently refused to undertake the role of leader and manager for Federal energy conservation efforts. DOE stated this

position in commenting on one of our reports. We recommended that DOE coordinate the evaluation of energy saving devices, establish demonstration projects using those devices in Federal buildings, and publicize the results of such projects. While some DOE program staff thought demonstration projects would be good, DOE's official response to our report was that representatives of OMB and certain DOE management officials have taken the position that DOE should have no role in 'coordinating' or 'managing" agency energy conservation efforts. DOE noted that this position was obviously inconsistent with our perception of its role as a strong central manager of federal energy conservation activities and stated that until this issue is settled, it could not positively respond to our recommendations. We believe that if DOE's position is inconsistent with our perception of its role, then its position is also inconsistent with the law.

We believe one reason that the Federal Energy Management Program has lacked overall direction is that DOE has not provided adequate organizational emphasis and funding for the program. Initially, the program was established to manage the Government's overall energy conservation program. Under DOE, however, the program has not been accorded an organizational status which enables it to do much more than collect, compile, and report on Federal energy consumption data.

When we criticized DOE's lack of emphasis of the Federal Energy Management Program, DOE replied that it was meticulously examining its programs and activities and that this would result in the proper organizational structure and staffing levels for accomplishment of assigned responsibilities. We noted that this examination resulted in a 20 percent reduction in the budget request for fiscal year 1980 and the loss of two staff members.

Public laws, executive orders, and presidential memoranda dealing with energy, envision and authorize a strong, structured energy conservation program within the Federal sector. If DOE continues to ignore its responsibility, mandated requirements will never be met. We believe that DOE should effectively serve as the lead agency for energy conservation throughout the Federal Government, and should make this point known to other agencies and departments.

In conclusion, Mr. Chairman, we believe that the Federal Government needs to conserve energy, that its program for doing so is in disarray, and that DOE must accept the responsibility. We have continually reported what we believe to be the major problems, but DOE has not taken corrective action We are concerned that DOE's lack of leadership and its failure

to aggressively pursue energy conservation planning is causing the Government to miss energy conservation opportunities. To put it in perspective, if the Federal Government were to save 20 percent of its total energy use, which we believe is feasible, it could reduce the Nation's energy demand by the equivalent of over 150,000 barrels of oil a day--about 31 percent of the Nation's shortfall resulting from the cutoff of oil imports from Iran.

That concludes my statement, Mr. Chairman. I would be happy to respond to questions.

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Listing and Summary Of GAO Reports On Energy Conservation In The Federal Sector

1. "The Solar In Federal Buildings Demonstration Program" (EMD-79-84, August 10, 1979).

   This program was proposed in the National Energy Plan as a major initiative to demonstrate the Federal Government's leadership in promoting energy conservation and the use of renewable resources in its own buildings. However, because the Department of Energy has not developed a comprehensive strategy or assumed its mandated leadership responsibilities, this new program is being carried out in isolation from other conservation and solar efforts for Federal buildings. Further, DOE does not appear to be giving the program the support necessary to achieve its ambitious objectives.

   This report includes recommendations for DOE to

   --develop a comprehensive strategy and plan for guiding and integrating conservation and solar efforts for Federal buildings and

   --implement a Federal buildings solar program on the scale envisioned by the National Energy Plan and the Congress.

2. "Energy-Saving Strategies For Federal Procurement" (EMD-79-68, June 19, 1979).

   This report discusses what Federal agencies have done to develop and implement procurement techniques which result in reduced energy consumption.

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The Office of Federal Procurement Policy (OFPP) has issued a policy letter calling for the application of energy conservation and efficiency principals in the Federal procurement of goods and services. Federal agencies were to establish specific procedures for implementing this policy. In response, DOD and GSA have added a general policy statement to their procurement regulations. Federal procuring agencies, however, have not developed specific procedures for considering energy in the procurement process.

This report identifies a number of potential procurement practices for reducing energy use and suggests what OFPP could do to ensure that some of these practices are implemented.

3. "Evaluation Of DOE's Activities To Develop Mandatory Lighting And Thermal Efficiency Standards For Federal Buildings" (EMD-79-32, March 8, 1979).

We evaluated the Department of Energy's (DOE's) activities to develop mandatory lighting and thermal efficiency standards for Federal buildings. Such standards are to be developed by DOE as part of the 10-year plan for energy conservation in Federal buildings called for in section 381 of the Energy Policy and Conservation Act (EPCA) (Public Law 94-163).

We found that mandatory lighting and thermal efficiency standards have not been established. We concluded that DOE needs to promptly address certain issues concerning the establishment of such standards before an aggressive energy conservation program for Federal buildings can be pursued.

4. "Transportation Energy Conservation In The Federal Government" (EMD-79-3, January 25, 1979).

This report discusses DOE's efforts through the Federal Energy Management Program to develop and promote a transportation energy conservation program in the Federal Government.

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While significant reductions have been reported in the Federal Government's use of energy since fiscal year 1973, DOE has not provided the leadership necessary for a strong, structured transportation energy conservation program The reported reductions, to a great extent, are the result of operational changes and not the result of conservation activities. This report recommends, and provides some suggestions for a stronger, more structured transportation energy conservation program.

5. "More Use Should Be Made Of Energy-Saving Products In Federal Buildings" (EMD-79-10, January 23, 1979).

Many products are available from commercial sources which, when installed in buildings and facilities, can save significant amounts of energy. While Federal agencies are presently using some of these energy-saving devices, they could expand that use and profit accordingly.

This report identifies factors impeding the use of energy-saving products by Federal agencies and discusses several ways in which DOE could improve its management of the Federal energy conservation effort.

6. "Improvements Needed In Department of Defense Energy Conservation Investment Program" (EMD-78-15, January 18, 1978).

The Energy Conservation Investment Program afforded DOD, the Government's largest energy user, an excellent opportunity to make its existing buildings more energy efficient.

However, the program as conceived and currently structured does not insure that its primary objective of conserving DOD's energy resources will be achieved in the most efficient, effective, and economical manner because:

--The program structure excludes some facilities that are large energy users.

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--The program criteria does not require proper economic analyses for evaluating and selecting projects.

--Program directors have not established adequate guidelines and controls to identify energy saving projects on the basis of consistent and reliable data

7. "Evaluation Of The Plan To Conserve Energy In Federal Buildings Through Retrofit Programs" (EMD-78-2, December 22, 1977 and EMD-78-89, July 20, 1978).

Buildings consume about 39 percent of the total energy used by the Federal Government. Energy conservation in these facilities, therefore, is essential in any program to reduce the Government's energy use.

DOE has developed a comprehensive plan to reduce energy use in existing Federal buildings through retrofit programs. However, several areas should be further developed before it is submitted to the President for final approval, including:

--Better procedures and criteria for evaluating, selecting, and approving retrofit projects.

--Improved funding mechanisms for energy conservation retrofit projects.

--Improved procedures for evaluating Energy Management Systems.

--Better marketing and use of the retrofit handbook.

In the second report cited above, we evaluated the comments DOE provided to the House Committee on Government Operations and the Senate Committee on Governmental Affairs on our earlier report. We concluded that the comments were generally not responsive to the matters discussed in the report. We expressed our concern that the development of the 10-year plan for energy conservation in Federal buildings, as required by the Energy Policy and Conservation Act (P L. 94-163), is not being aggressively pursued.

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8 "Federal Agencies Can Do More To Promote Energy Conservation By Government Contractors" (EMD-77-62, September 30, 1977).

Although the Federal Government has been promoting energy conservation since late 1973 and several agencies have programs that deal with industrial energy conservation, these programs and actions have had little effect at Government contractors' plants

All contractors had taken some conservation actions at the facilities reviewed Very few, however, had viable energy management programs.

Contractors can do more to save energy. The potential for achieving additional reductions in energy use is more than 20 percent in some plants.

Because of possibly high energy savings, the Government must work effectively as a unit to foster and promote energy conservation

9 "Energy Conservation At Government Field Installations--Progress And Problems" (LCD-76-229, August 19, 1976)

GAO visited 77 Government installations to determine how effectively they were undertaking the Federal energy reduction program.

Generally, installations have been active in efforts to reduce energy consumption However, much more can and should be done to save energy through improved program management, more internal reviews, better energy-use information systems, stricter compliance with Federal standards and regulations, and modifications to existing facilities.