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STATEMENT OF FRANK G. ZARB

ADMINISTRATOR

FEDERAL ENERGY ADMINISTRATION

BEFORE THE

COMMITTEE ON GOVERNMENT
OPERATIONS

UNITED STATES SENATE

APRIL 16, 1975



I appreciate this opportunity to appear before you to discuss FEA's energy conservation programs and specifically the two areas identified as being of special interest your Committee: (1) energy conservation within the Federal Government and (2) our assessment of the need to establish a special energy conservation program for companies contracting with the Federal Government.

Before I discuss these subjects in detail, however, I would like to provide a brief overview of the Nation's energy dilemma and a summary of the President's legislative initiatives.

Last winter's oil embargo demonstrated our Nation's vulnerability to foreign supply cutoffs. The embargo was one result of years of energy neglect which left our economy and its relationship with other nations subject to foreign influence, sudden disruption, and devastating price increases.

The problem can be seen by examining several disturbing trends in the Nation's energy situation.

First, and of fundamental concern to us here today, is that the Nation's demand for energy has been growing at a rate of 4.5 percent annually for the past ten years. Demand for petroleum products has increased at an even more alarming rate.



Second, our domestic supplies of petroleum and other fuels have not kept pace with this increasing demand. In fact, domestic production of crude oil peaked prior to 1970 and has been declining ever since.

Third, and perhaps most importantly, the gap between domestic demand for energy and domestic supplies has been filled by an increasing reliance on imported petroleum. In 1960, the United States imported only 15 percent of its petroleum requirements. By 1973 this figure had grown to 35 percent or 6 million barrels per day. And in 1974, even accounting for the reduced consumption caused by the embargo and last year's price increases, our imports grew to 38 percent of our total consumption, or 6.4 million barrels per day. If this trend continues unaltered, our projections indicate that by 1985 we will import up to 12.7 million barrels per day, or more than half our oil needs.

Clearly, our Nation's deteriorating energy situation requires broad, decisive and prompt government action to prevent continued erosion of our economy and national security. Reducing our vulnerability to supply interruption and price manipulation must be given the highest priority.

The President has prescribed tough action to cure our energy ills. He has outlined three, timephased goals.



One: In the short-term, a cut in our oil imports of one million barrels per day by the end of this year and of two million barrels per day by the end of 1977.

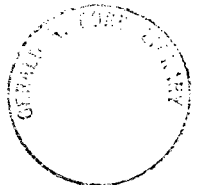
Two: By 1985, imports of no more than three to five million barrels per day -- and the capability of immediately replacing that amount from storage and standby measures in the event of a supply disruption.

Three: Accelerated development of energy technology and resources so that the United States can meet a significant share of the energy needs of the free world by the end of this century.

To meet these goals, the President has proposed several actions that would, if implemented, serve to counter the recent trend of declining domestic energy production.

In the first crucial years, there are only a limited number of actions that can increase domestic supply. We must develop and increase production from the Elk Hills, California, Naval Petroleum Reserve. The President has submitted legislation for this purpose.

The Administration has also submitted a set of comprehensive amendments to the Energy Supply and Environmental Coordination Act of 1974 to increase the number of oil burning facilities that can be converted to coal in the coming years.



In addition, the Administration has proposed a series of tax and decontrol measures. These actions will not only increase incentives to explore for and develop new energy resources but will also encourage greater energy conservation.

For the mid-term, the President has reaffirmed the intent of this Administration to move ahead with an aggressive leasing program in those areas of the Outer Continental Shelf where the environmental risks are judged to be acceptable. He has also asked the Congress to authorize oil production from the largest of the Nation's Naval Petroleum Reserves, NPR4 in Alaska, to provide petroleum for the domestic economy, with at least 20%, or such amounts as may be determined by the President, earmarked for military needs and strategic storage.

But in addition to finding more oil and gas, we must take advantage of our most abundant energy resource, coal. The President has submitted surface mining legislation and an amendment to grant the Environmental Protection Agency authority to suspend emission limitations for power plants until low sulfur coal can be obtained or stack gas scrubbers can be installed.

The Administration is also seeking an amendment to the Clean Air Act to deal with the issue of "significant deterioration" of air quality.



Finally, the President has proposed legislation to assist electric utilities through higher investment tax credits, mandated reforms in State Utility Commission practices, and other measures. And to rejuvenate our drive toward more effective use of nuclear power, we have markedly increased our budget request for nuclear waste disposal and for continued improvements in safeguards.

For the long-term, the President has reaffirmed our commitment to a strong energy research and development program, aimed not only at developing the capability to tap all our major domestic energy resources but also at improving the efficiency of energy utilization in all aspects of our economy.

In conjunction with this R&D program, the President has announced a national synthetic fuels program which will entail a program of Federal incentives designed to reduce price uncertainty, raise capital and overcome unnecessary delays in bringing existing or nearly developed technologies into commercial use.

Although each of these supply actions will contribute to the achievement of energy independence, they are not sufficient to do the job alone. Thus, an essential element of any energy strategy aimed at reducing our dependence on imported petroleum must be policies to reduce our growing demand for energy by energy conservation.



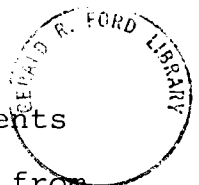
As I noted earlier, the President has proposed several tax and regulatory actions which would increase the price of energy relative to other products in order to achieve major energy savings in the near-term. We believe that this approach poses the least danger to our economy and is more equitable than other proposals that would achieve comparable savings.

While dampening demand through increases in the relative price of petroleum products is the only means to achieve major savings in the near-term -- short of restricting supply -- there are numerous other energy conservation programs that we feel will produce significant savings beyond 1977. For example, our Nation can greatly improve the fuel economy of automobiles, the efficiency of home appliances, the thermal characteristics of buildings and the energy efficiency of industrial processes.

The Administration's energy program incorporates a combination of voluntary and mandatory programs directed at the achievement of major energy savings in each sector of the economy.

The President has recently announced six specific administrative and legislative initiatives. They are:

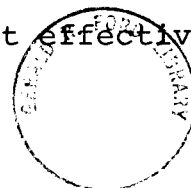
1. A 40 percent improvement in the fuel economy of new automobiles by model year 1980. Commitments to achieve this goal have already been obtained from



auto manufacturers. The President has also announced that he will seek amendments to the Clean Air Act to achieve a better balance between environmental and energy needs (Titles V and VI of S. 594).

2. A tax credit for 15 percent of the cost of installing insulation and making other energy conserving modifications to homes.
3. A winterization assistance program to install insulation, weatherstripping and caulking in homes of low income individuals (Title XI of S. 594).
4. A mandatory program to develop and ensure the adoption of energy conservation standards for all new residential and commercial buildings (Title X of S. 594).
5. Mandatory motor vehicle and appliance energy labeling programs (Title XII of S. 594).
6. A voluntary appliance efficiency improvement program which has a goal of obtaining the commitment of appliance manufacturers to achieving an average 20 percent improvement by 1980.

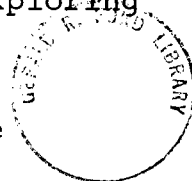
These new initiatives will complement the energy conservation programs already being implemented by FEA. We believe that combining Federal efforts to improve the efficiency of energy use in new buildings, new automobiles, and new appliances with ongoing voluntary programs, supported by selected incentives, to encourage immediate energy conservation will be the most effective



means of achieving major energy savings. To give you a better understanding of our total approach to energy conservation, I would now like to discuss in more detail FEA's conservation programs within the Office of Energy Conservation and Environment.

The Office of Energy Conservation and Environment is divided into several sections -- each focusing on a particular sector of the economy: Transportation, Buildings, Industry and Electric Utilities. I will discuss each sector separately and then return to a more detailed discussion of the areas that you have indicated particular interest in.

The Transportation sector accounts for 25% of total U. S. energy consumption and about 60% of U. S. petroleum consumption. Motor vehicles consume about 77% of transportation energy or almost one-fifth of all U. S. energy demand. In 1972, passenger cars alone accounted for almost 14 percent of total energy demand and over 28 percent of our total petroleum consumption or 4.7 million barrels per day. Passenger cars consumed even more petroleum in 1974. This represents an increase of almost 50 percent since 1950, and is the result of a 19 percent decrease in automobile fuel economy and a 170 percent increase in the total number of vehicle miles traveled by passenger cars since 1950. As a result, the Administration has focused considerable attention on exploring the available ways to reduce energy consumption by the transportation sector, and more specifically, to reduce automobile fuel consumption.



FEA's transportation energy conservation efforts have as their primary goal an increase in the efficiency of energy utilization in this end-use sector of the economy.

We have given high priority to achieving several important objectives during Fiscal Year 1975. First, working in conjunction with the Department of Transportation and the Environmental Protection Agency, we have addressed the issue of reducing automobile fuel consumption by obtaining voluntary commitments from auto manufacturers to improve the production weighted average of their new cars by 40 percent in 1980, as requested by the President in his State-of-the-Union message. Measured against the 1974 model average of 14.0 mpg, the 40 percent goal translates into an average new car fuel economy of 19.6 mpg in 1980. FEA is currently working with DOT to develop a program to monitor achievement of the 40 percent improvement in fuel economy.


More recently, DOT, FEA and EPA have been developing a voluntary fuel economy improvement program for trucks and buses. This program parallels the automobile fuel economy program already underway. A study prepared by the Department of Transportation last year indicated that there is the potential for an 18 percent improvement in the fuel economy of trucks and



buses produced in 1980 compared to 1974 vehicles. Although these savings can be achieved through technological improvements alone, we are considering not only the technological options for improved fuel economy but also ways of making more efficient use of energy in existing vehicles by installing fuel efficient devices, improving maintenance and driving habits, and by encouraging energy efficient adjustments in Federal regulations.

In another area, we are working with the Environmental Protection Agency to insure effective implementation of the on-going voluntary auto efficiency labeling program and to prepare for implementation of the proposed mandatory labeling program. One area of attention has been assessing the adequacy of current EPA testing procedures and determining how they might be improved.

FEA, in cooperation with the Department of Transportation is also developing policies and programs to shift transportation of freight and people from less to more efficient modes and to make more efficient utilization of all modes. One aspect of this effort is a current effort to examine specific ways in which the Federal Government might encourage greater use of carpools and other low-cost energy conservation measures. Our intent is to recommend not only new programs for



reducing transportation energy consumption but also ways to use existing Federal programs to increase the efficiency of our transportation systems.

In support of these programs, the Office of Energy Conservation and Environment is conducting a variety of program studies.

Finally, to help achieve near-term savings, we are implementing a public education program which emphasizes cost-effective transportation conservation measures. As a part of these efforts, we have distributed several million copies of two pamphlets: Tips for the Motorist and the 1975 Gas Mileage Guide for New Car Buyers.

Let me now turn to the building sector which accounts for about 32 percent of all energy consumed in the United States each year. This sector's energy demand was growing at about 4.0 percent per year before the embargo -- in effect doubling every 19 years. In 1974, there were approximately 72 million occupied housing units and 24 billion square feet of commercial space, including all educational facilities and public buildings. Over one half of U. S. housing stock was built before 1949, before any thermal standards for buildings came into existence.

In the buildings sector, 70 percent of energy consumption is in residences; 30 percent in commercial structures.



Of the total, space heating accounts for the majority of use: 59 percent of residential use, 41 percent of commercial use. And it is in this area where the greatest opportunities for conservation exist.

Studies have shown that as much as 40 percent of the energy consumed in buildings is wasted due to energy inefficient design, operating practices, and equipment, and excessive lighting, heating and cooling levels.

Opportunities for energy conservation in buildings fall into essentially two categories: existing buildings and new construction. The greatest long-term potential for energy conservation in buildings clearly lies in improving the design and construction of new buildings. For the short term, however, we must focus on opportunities for conserving energy in existing residential and commercial buildings.

The Federal Energy Administration has studied a wide range of possible Federal actions to encourage or require energy conservation in all buildings. Our analysis has shown that no single approach is adequate and that the Federal Government must pursue a combination of voluntary and mandatory programs.



Where possible under existing authority, FEA has established programs to encourage and assist individuals to conserve. I will briefly describe those existing programs which impact on the buildings sector.

The first of these are programs aimed at existing residential buildings and appliances.

About 13 percent of total U.S. energy demand is consumed in heating or cooling residential buildings. The average U. S. household spends about \$250 annually on space heating. Consequently, reduction of the heat lost through building walls, ceilings and windows would also lower home operating costs. We believe that more than 18 million single family homes are inadequately insulated and would benefit from energy conserving modifications. Ceiling insulation, caulking and weatherstripping, storm windows, and clock thermostats can save as much as 20 to 40 percent of current consumption in an average home.

The Federal Energy Administration already has two pilot programs, Operation Button-Up and Project Conserve, which are directed at encouraging and assisting individuals to conserve energy in their homes. Operation Button-Up provides information to individuals on the benefits of retrofitting their homes and mobilizes local organizations to help achieve



energy conservation. It has already been initiated in four test cities -- Louisville, Indianapolis, Minneapolis, and Kansas City -- and may soon be combined with Project Conserve. Project Conserve helps individuals identify the specific retrofit actions that should be taken within their homes. Questionnaires are distributed and filled out by the homeowner. A computer then analyzes the questionnaire and provides each individual with a list of specific recommendations including an estimate of their costs and savings.

Project Conserve has already been tested in Danbury, Connecticut, and Topeka, Kansas. The computer program is now being revised to accomodate all regions of the country. When this revision has been completed and demonstrated, it will probably be made available to the consumer through State and local governments.

An evaluation of Project Conserve's impact in the two test cities indicated that 21 percent of those who received a questionnaire were concerned enough about energy conservation to fill it out; and, of those who received the computer report, nearly half planned to take at least one of the



energy conserving actions described. We hope that this will be a powerful tool for achieving major energy savings in single family homes.

In addition to these programs, the Federal Energy Administration is sponsoring a broad consumer education campaign to encourage individuals to lower their thermostats, install insulation and take other steps to conserve energy in their homes.

A third effort concerns appliances. The President has proposed mandatory energy efficiency labelling of room air conditioners, water heaters, refrigerators and freezers, ranges, washers, dryers, and televisions. The appliance labelling effort will be supported by a voluntary program that will obtain the commitment of manufacturers to increase the energy efficiency of new appliances by 20 percent in 1980. If the voluntary efficiency improvement program is not successful, the Administration will ask for authority to establish mandatory efficiency standards.

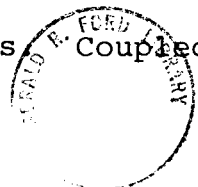
In addition to the programs affecting residential energy use, the Federal Energy Administration has a program aimed at achieving energy savings in the commercial sector - the Lighting and Thermal Operations Program.



During the past year FEA has developed and published guidelines for lighting and thermal operations in existing commercial buildings. These guidelines are being used in a national program to inform owners and managers of commercial buildings of the benefits of saving energy. The program urges businesses to substantially reduce lighting levels and adjust heating, ventilating and air conditioning systems. FEA's regional offices are conducting both group and on-site presentations to managers and owners of commercial buildings to explain the guidelines. The program was established in October 1974 and has thus far shown impressive results. It may well achieve its target of saving 300,000 BPD of oil equivalent by November 1975.

While these programs will be of continuing importance, the President has determined that a voluntary effort will not be entirely sufficient to achieve the major savings required to meet the critical national need. Therefore, he has made four proposals to accelerate energy conservation in all buildings.

First, the President has proposed a series of tax and regulatory actions designed to encourage energy conservation by raising the price of petroleum and natural gas.

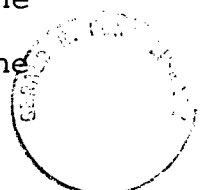


with these tax and regulatory measures there are a series of proposed actions that would return to the average consumer the full amount of revenues raised.

Second, to further encourage the retrofit of existing homes the President has proposed a tax credit, not a deduction, for 15 percent of the cost of purchasing and installing such items as ceiling insulation, weatherstripping, and caulking. This credit would allow up to \$150 per homeowner on an investment of \$1,000. The tax credit would expire in 3 years.

Third, recognizing the adverse impact of higher energy prices on low income persons and the inability of many to take advantage of the 15 percent tax credit, the President has proposed a winterization assistance program for low income persons. This proposed legislation would call for a \$55 million program in fiscal years 76, 77 and 78 to fund State winterization programs. Our goal is to winterize approximately 1.5 million homes by the end of fiscal year 1978.

The Federal Energy Administration estimates that the President's tax credit and winterization proposals alone would reduce oil imports by more than 300,000 BPD by the end of 1977.



The fourth proposal, the Buildings Energy Conservation Standards Act of 1975, would affect energy use in all new buildings. This proposal is particularly important because by 1985 approximately 30 percent of all residential units and 40 percent of all commercial space will have been constructed after 1974.

Adoption now of energy conserving design practices could reduce the heating and cooling energy consumption of single family dwellings by 35%, of high rise multi-family structures by 24 percent and of commercial buildings by 32 percent.

If enacted, this proposal would result in a reduction in imports of more than 300,000 barrels per day by 1985, and these savings would continue to grow into the future. Clearly, this proposal is not only of major importance to the achievement of energy savings within the next ten years, but it will also help us better meet the Nation's energy needs beyond 1985.

In summary, these proposals are an integrated package aimed at reducing energy waste in buildings. They are interdependent in that they deal with both the long and short term and cover all segments of the buildings sector.



The industrial sector accounts for about 40% of total U.S. energy demand. Because of the business community's primacy with respect to energy consumption, it must also be a vital part of any national program to conserve energy. For this reason, the Federal Energy Administration has been developing, in cooperation with industry, energy conservation programs for ten of the most energy intensive industries: steel, petroleum refining, chemicals (including petrochemicals), paper, aluminum, cement, glass, copper, meat packing, and baking.

These ten industries are responsible for about 60% of the energy utilized by all U.S. industries or almost 25% of all domestic energy consumption.

A wide range of opportunities exist for conserving energy in all industries. Improved management techniques alone, such as ensuring that equipment is well maintained and properly adjusted, can produce substantial savings in many plants. Beyond these "house keeping" measures, however, there are numerous technologies which can be employed to improve the efficiency of energy use. These include heat recovery systems, recycling and, in some cases, basic changes in the industrial process itself.



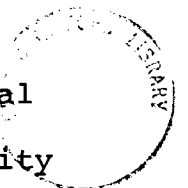
Achieving energy conservation in industry is a complex task. We do not believe any single Federal approach is adequate. Therefore, we have established an Industrial Energy Conservation Program which involves efforts to encourage the adoption of both better management techniques and more energy efficient technologies.

The program which FEA and the participating firms have agreed upon is designed to establish specific energy efficiency targets. The program will:

- Identify and develop new energy saving industrial processes;
- Selectively demonstrate and encourage the rapid adoption of such processes;
- Identify constraints to industrial energy conservation;
- Establish industry-wide energy efficiency targets;
- Encourage individual firms to establish energy conservation goals; and
- Monitor progress toward achieving these targets.

The FEA and the Department of Commerce will work cooperatively with industry to identify the conservation potential within each of the major energy consuming industry groups, and encourage the industries to increase investment in energy saving technologies.

We also intend to continue to explore possible Federal initiatives to remove any constraints on industry's ability



to conserve energy.

To carry out this program, we are asking the participating industries and firms to:

- ° Establish an industry-wide energy conservation group;
- ° Develop specific energy conservation plans for each company;
- ° Produce periodic reports of industry and company energy consumption data;
- ° Monitor and report their progress toward achieving the goals; and
- ° Develop long term projections of energy use.

The Industrial Energy Conservation Program has been working cooperatively with both industry trade associations and individual companies to achieve their commitment to the program. In this phase of the program, it is FEA's desire to provide for reasonable flexibility by not following a rigidly structured approach. Instead, it is envisioned that companies will enjoy latitude in selecting their individual approaches to the implementation of energy conservation programs within their plants.

We have already made considerable progress toward achieving our program objectives. Meetings and workshops have been held with over 200 industrial firms and 20 trade associations to assess their energy conservation potential and to establish industry-wide and firm specific energy conservation programs.

and goals. Follow-up meetings at the Cabinet and Chief Executive office level have been held or are pending to obtain commitments to implement energy conservation programs. We have obtained agreements for the monitoring and reporting of energy conservation achievements within these industries.

Our preliminary findings indicate potential energy savings per unit of output of about 15 percent are attainable by 1980 in the industrial sector, although this will vary between specific industries. These savings can be achieved through further application of conservation practices, and through greater use of the improved technology, processes, and equipment now available to the industrial community.

In addition, we are working with the Department of Agriculture to identify energy consumption patterns and the energy conservation potential in agricultural production and food processing industries. We have also established a Food Service Advisory Committee that is working with the food processing, grocery, and restaurant trades to improve the efficiency of energy use in these business sectors.

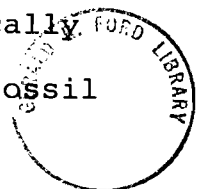
In support of these programs, FEA and Commerce have jointly developed films, brochures, training materials, case studies, and an Energy Conservation Program Guide for Industry and Commerce--all of which help us in our efforts to get the message across to private industry.



Clearly, no single approach can effectively achieve energy conservation in such a large and complex sector of our economy. The FEA has chosen to pursue a multifaceted program to encourage and assist industries to conserve energy. We have set a goal of reducing industrial energy consumption per unit of output by 15 percent by 1980 and we believe that with the cooperation of industry this goal can be achieved.

Finally, let me turn to a brief discussion of FEA's effort to conserve electrical energy. Electricity is used in every sector of the economy, but is particularly important to energy conservation efforts within buildings and industry.

Electric utilities alone account for roughly 25% of the nation's total consumption of fossil fuels. There are substantial energy inefficiencies in this sector, not only in the generation of electricity, but also in its transmission, local distribution and end-use. The electrical utilities are also experiencing a serious financial crisis resulting from the rising costs of generator fuels and deteriorating load factors (average load/peak load). The load factor problem is particularly important because capital requirements are driven by peak loads, whereas revenues are derived from total load. This situation forces utilities to retain older, inefficient generators to meet peak loads, or to acquire relatively inexpensive new peaking generators--typically simple cycle turbines inefficiently burning scarce fossil fuels--to meet peak loads.



The Federal Energy Administration is committed to solving this complex problem. On one hand, we must ensure the capability of utilities to supply adequate electricity to the nation at reasonable prices. On the other hand, we must conserve energy by minimizing the inefficiencies and wastages which occur not only in the consumption of generator fuels, but also in the ultimate consumption of electricity itself. Although in some limited respects these two objectives may conflict, we believe that this is not generally the case and that energy conservation need not complicate but can actually enhance the financial situation of utilities.

To demonstrate this point, FEA has begun to enter into cooperative agreements with agencies of State and/or local governments to support "demand management" projects for electric utilities. These demonstration projects will highlight certain options available to conserve energy in the generation, transmission, local distribution and end-use of electricity. Prominent among these options are:

- Cost Based Rates which would ensure that the actual cost of a given unit of electricity is, to the maximum extent possible, charged to its consumer. This concept is intended to promote economic and energy efficiency and includes daily and seasonal peak load pricing based on long-run incremental costs.



- Load Shaping Technology which would maximize the use of more efficient base-load generators by minimizing load peaks through the application of such technology as storage devices, power pools, and ripple load controls.
- End-Use Conservation. This option includes the active promotion by regulatory agencies and utilities of energy conserving materials, equipment and behavior. With regulatory agency cooperation, utilities might actually own or finance a wide range of energy conserving capital improvements to customer premises, such as insulation, storm windows or solar collectors.

In conjunction with these demonstration projects FEA also intends to:

1. Develop and market implementation kits for individual private and public utility systems. These will assist them in making corporate decisions which are supportive of State Public Utility Commission initiatives and are both in their own financial interest and in the interest of energy conservation.
2. Provide conservation merit awards and widespread publicity for those PUCs and utilities which have taken positive actions to reduce energy inefficiencies in the generation, distribution and end-use of electricity.



3. Support policy studies of institutional and individual behavior pertinent to energy conservation and state-of-the-art technologies in this area.

By 1985, the following objectives should be achieved by the electric utilities industry: (1) the average load factor should be improved from the present 62% to at least 69% and (2) annual growth rates of electricity usage (kilowatt hours) and peak demand (kilowatts) should be cut from their historical 7 percent to no more than 5 percent and 4 percent, respectively. The achievement of these goals might save as much as 600,000 BPD of petroleum in 1985, and considerably more in other domestic fuels.

To achieve these objectives the following projects have begun or are planned during the current fiscal year:

- A utility demonstration project in Vermont involving field evaluation of six different rate alternatives, and the application of heat storage technology to exploit off-peak electrical power.
- Analyses of the impacts of proposed load management programs upon typical electric utility systems.
- A compendium of load management guidelines for State Public Utility Commissions.
- A project to sample 30 to 40 companies to determine the potential for utility sponsorship of Project Conserve, a pilot program developed by FEA, and to develop

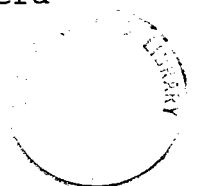


ways more utilities can be encouraged to sponsor this program.

- Support of detailed engineering studies directed toward utilization of solid waste as a fuel supplement in nine of TVA's electrical generation facilities.
- Four additional rate and load management demonstrations which have not yet been formalized. The groundwork has been laid with a number of such utilities, rate commissions, and state offices. Awarding of the contracts should take place in April. The response to the solicitation has been excellent--over 20 states have indicated an intention to submit proposals.

For Fiscal Year 1976, FEA has requested a budget of over \$3 million to expand these programs, including:

- Formulation of optimal growth goals and a quantitative 1985 model for the electric power industry.
- Expansion of electricity load management demonstrations to encompass alternative techniques and additional systems characteristics.
- Guidelines will be developed to assist regulatory authorities in formulating policies and decisions that promote more efficient use of electricity, of installed operating capacity, and of primary generator fuels.



All of these programs are being implemented in close cooperation with other Federal agencies, State Public Utility Commissions and individual utilities. We believe these efforts will yield substantial energy savings in the utilities sector, and will contribute significantly to the achievement of the President's energy goals.

Turning now to your specific interest in "...conservation in the operations of the Federal Government and Federal Contractors."

As you know, FEA has the responsibility for implementing a Presidential directive to reduce energy consumption during Fiscal Year 1975 in the Executive Branch by 15 percent, using Fiscal Year 1973 as a base.

Initially, the Federal Energy Management Program came into being as a result of the President's Energy Statement of June 29, 1973, which directed Federal departments and agencies to achieve a seven percent reduction in anticipated energy consumption in Fiscal Year 1974. The first objectives were to: (1) define the scope of the problem, (2) identify the major energy consuming Federal agencies, and (3) establish a base from which to measure and monitor the results. We found that the Federal Government's energy demand amounted to about 3 percent of the nation's total during Fiscal Year 1973,



and subsequently we established that usage level as our baseline. Of all Federal departments and agencies, the 11 cabinet departments and five independent agencies accounted for 97 percent of the total personnel, vehicles, buildings and facilities. We concentrated on these sixteen initially because it was impractical to mount a more extensive effort at that time with our limited resources.

About 60 percent of the total energy usage was associated with vehicle, ship and aircraft operations while most of the remainder was used in building lighting, heating and cooling. Our primary objectives and the areas of key importance were fairly clear, but some of the changes that were required involved rather abrupt departures from past ways of doing government "business."

Strategies were developed and implemented to reduce energy consumption in virtually every area of use. All agencies were asked to designate an energy conservation officer, at an appropriately high organizational level, to develop and implement the effort within the agency and reductions were achieved even in the first quarter of Fiscal Year 1974.

At this point, we could spend a considerable amount of time going into the baseline figures, the consumption reports and whether or not our directives have been effective at a given installation. In fact, some controversy arose last



year regarding the accuracy of our figures and, I must frankly acknowledge, that our figures were not as precise as would have been possible had there been more time or resources to devote to this effort. During the past year, however, our confidence in the savings we have reported has increased substantially. Even so, we are continuing to refine our collection and analyses system. Regardless, I believe these criticisms obscure the major point - results were achieved, energy was saved! Specifically, energy use in Fiscal Year 1974 was 24 percent below Fiscal Year 1973, equivalent to 90.5 million barrels of oil and \$724 million in energy cost savings.

I might add, parenthetically, that we have been impressed sufficiently with the results that we are now making a major effort to urge adoption of many of these same strategies as part of our voluntary programs. For example, the lighting and thermal operations guidelines implemented by the Federal Government have formed the basis of a voluntary program directed at reducing energy use in commercial buildings. In addition, several state and local governments have adopted plans similar to FEMP and many others have shown considerable interest.

The President has established a savings goal of 15 percent for this fiscal year. At first glance, this might appear to be too low a target in view of the savings claimed for Fiscal Year 1974. There was conservation in FY 74, yet,



there was also curtailment. The Department of Defense, which uses about 85 percent of all energy consumed by the Federal Government, experienced severe fuel problems during Fiscal Year 1974 because of worldwide shortages and the increases in oil prices. Thus, some of their reduced usage resulted from the same kind of enforced savings we experienced last winter during the Arab oil embargo - such as the long gasoline lines and, in some cases, no gasoline at all. As you will probably hear in their testimony before you, many planned operations were cancelled. There were ships that did not sail and planes that did not fly because they lacked fuel. This situation was also prevalent in other Federal agencies. Despite some of these mitigating factors, the Federal agencies during the first six months of this fiscal year, according to our preliminary figures, have held consumption approximately 24 percent below 1973 levels--a savings equivalent to 47 million barrels of oil and a savings in energy costs to taxpayers of \$420.4 million.

Also, as noted earlier, those strategies which are easiest to implement and monitor have already been utilized. Therefore, during the current fiscal year, we are moving in two directions. On one front, we are involved with GSA in responding to a Presidential directive to develop a multi-year program for energy conservation in the Federal Government.



The purpose of this is to identify additional, longer-range opportunities to conserve energy in Federal facilities and operations. It is intended that the results will be integrated into a comprehensive program to:

- minimize energy consumption while enhancing our ability to carry out our functions and missions,
- insulate the Federal Government's operations from erratic price changes or curtailment of supplies,
- establish energy management as a continuing concern,
- apply systems analysis and design techniques to the greatest possible extent, and
- transfer to the private sector information on those techniques that have shown impressive results.

While this effort is still in the formative stage, it is clear that we are going to have to draw on a broad range of expertise in many agencies, and that budget considerations are going to play an important part in any implementation plan that is developed.

In a second initiative, we are extending our efforts to ensure that those strategies that have already proven their effectiveness are adopted by the Federal Government. This year, for example, ten additional agencies have been brought under the Federal Energy Management Program.



Further, we have initiated a series of site visits to approximately three hundred Federal establishments throughout the U.S. to evaluate whether the people at the installation level have gotten the guidance they need and to determine whether or not it is being observed. As you know, in many cases our best efforts are like pushing strings--you push and push, but the other end just doesn't move. So it's vital to get out to the other end of the string, so to speak, and give it a pull.

As an extension of this inhouse program, the Federal Government is presently adjusting its procurement policies to purchase through the General Services Administration more fuel efficient automobiles and air conditioners, in order to greatly reduce our gasoline and electricity use in the future. In this regard, we are continuing to examine ways in which the Federal Government can increase the energy efficiency of the appliances and equipment it uses. And we will purchase more efficient products when energy and cost savings have been clearly demonstrated.

In conclusion, we believe we have made significant strides in furthering energy conservation within the Federal Government. Although the achievement of major energy savings has not always been easy, we have demonstrated that the Federal Government is committed to energy conservation. In fact, we feel the Federal program can serve as a model for action throughout the Nation.



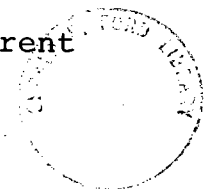
The second area of special concern to your Committee is our effort to obtain the commitment of Federal contractors to energy conservation.

FEA has been exploring various alternatives for achieving contractor adoption of energy conserving practices. We have been working closely with both GSA and Defense to identify the benefits and drawbacks of various voluntary and mandatory programs.

We are currently reviewing three possible approaches:

- 1) requiring the contractor, either before contract approval or within a designated period from the receipt of funding, to certify compliance with guidelines for lighting and thermal operations which are similar to those used by Federal agencies,
- 2) requiring that the contractor certify that they have made their "best effort" to comply with the guidelines, and 3) specifically including Federal Contractors in our Lighting and Thermal Operations Program, which is currently pursuing direct contacts with companies around the country to explain and urge them to adopt the FEA guidelines.

The first and second options would require additional manpower to effectively implement and they would also place an additional requirement into the already burdened Federal contracting process. The result may be to further discourage prospective contractors from doing business with the Federal Government. Including Federal contractors in our current



lighting and thermal operations program would not be discriminatory but this option provides no assurance that action would be taken.

Although each of the alternatives concentrate on an area of significant potential for energy savings, none would ensure that contractors adopted the full range of energy conservation measures that are available. This is one of the specific concerns expressed by the General Accounting Office. To implement the type of program envisioned by GAO, however, would necessitate a dramatic increase in Federal monitoring and is likely to result in arbitrary and destructive interference in the operations of private companies. Such a program might require the establishment of standards for industrial energy use, in addition to a detailed analysis of individual plants and buildings. We feel it would be far better to focus on those energy conservation measures which can be universally applied to buildings and industry. The more difficult task of obtaining long term energy savings in industry through the application of improved technology should rely on the judgement of business managers who are familiar with the specific needs of their company. The Federal Government does have a role in encouraging and assisting industry in making decisions regarding energy conservation and our recognition of this role is reflected in the joint Commerce/FEA Industrial Energy Conservation Program



described earlier.

In conclusion, we are continuing to explore the possibility of requiring the Federal contractors to comply with the Lighting and Thermal Operations Guidelines issued by FEA. We continue to believe, however, that the best means to achieve long term energy conservation in the private sector is to rely on the incentives provided by the free market system. In support of this approach we will continue to seek the voluntary commitment of major energy consuming industries to energy conservation goals, and to encourage and assist all businesses in the achievement of major energy savings.

Before I close, I would like to briefly discuss our current effort to intensify energy conservation education.

To meet the demand for public education on energy conservation a supplemental appropriation of \$5 million for Fiscal Year 1975 has been requested. These funds will be used exclusively for contracting purposes and are expected to produce a minimum of \$45 million worth of services due to cooperative ventures and donated time and space for public service advertising.

The purpose of this program is to:

First, promote an understanding on the part of all Americans as to causes behind the energy crisis and the reasons why we must conserve;



Second, to provide an awareness of savings opportunities as they exist in the lives of every person;

And finally, we wish to motivate Americans to take action to conserve energy, in personal settings and institutional ones.

In conclusion, I believe FEA has demonstrated both speed and resourcefulness in developing and implementing a wide range of energy conservation programs during the past year.

I welcome your interest in our programs and will be happy to answer any questions that you may have.

