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ENERGY AND MINERALS
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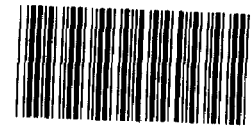
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RELEASED

B-207697

JUNE 22, 1982

The Honorable Richard L. Ottinger
Chairman, Subcommittee on Energy
Conservation and Power
Committee on Energy and Commerce
House of Representatives



118951

Dear Mr. Chairman:

Subject: Views on Selected Department of Energy Conservation
and Renewable Energy Programs and Their Program
Mandates (GAO/EMD-82-92)

Your letter of April 6, 1982, asked that we review the extent to which the administration, through the Department of Energy (DOE), has met the program mandates for its conservation and renewable energy programs. For selected programs, this report identifies legislative program mandates, summarizes current program status, and, based on our prior work, discusses program effectiveness. Your letter also raised three legal questions dealing with the use of appropriated funds and requirements on agencies in using these funds. Our Office of General Counsel will be providing a separate response to these questions.

Your letter enclosed a DOE document listing legislative requirements for selected programs. Using this document, and in discussions with your office, we selected programs which we either previously reviewed or are currently reviewing and examined pertinent legislation, regulations, and procedures pertaining to such programs. Because we relied mostly on our prior and ongoing work, we obtained additional information from DOE program officials when needed to assure that program status had not changed. We considered our past findings, conclusions, and recommendations in view of the current energy situation and issues facing the Congress and the Nation.

The enclosure to this letter discusses those programs identified in discussions with your office. Nearly all of them are conservation programs. A brief overview of the origin, mandate, and scope of each program is given along with the current program status, and our views are based on our assessments of the programs and observations we have made about their effectiveness. For ready reference, we have identified pertinent GAO reports.

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Our review was performed in accordance with GAO's current "Standards for Audit of Governmental Organizations, Programs, Activities, and Functions."

The remainder of this letter provides a brief perspective on the evolution of the Federal role in energy conservation and summarizes our observations on some of the programs we have reviewed or are presently reviewing.

THE FEDERAL ROLE IN ENERGY CONSERVATION

The Federal role in energy evolved during the 1970s. A growing concern with energy issues led first to a special energy office and ultimately to the Federal Energy Administration. At the same time, the Energy Research and Development Administration was created when the Atomic Energy Commission was abolished. In 1977, these agencies were merged into the Department of Energy. Initial legislative guidance concerning energy conservation was not very specific; however, this guidance was subsequently augmented by a succession of more precise legislation calling for the development of a number of major programs such as:

- The Energy Policy and Conservation Act (P.L. 94-163, Dec. 22, 1975), which authorized driver awareness programs and set efficiency targets for appliances.
- The Energy Conservation and Production Act (P.L. 94-385, Aug. 14, 1976), which authorized the development of energy efficiency standards for buildings and weatherization assistance for low-income persons.
- The National Energy Conservation Policy Act (P.L. 95-619, Nov. 9, 1978), which established the Residential Conservation Service to be implemented by States and utilities, and required consideration of energy efficiency standards for appliances.

Although these programs were intended to focus on the private sector, consumers, and State governments, the Federal Government was also directed to establish and carry out a comprehensive energy conservation program for its own buildings, facilities, and operations through the Federal Energy Management Program.

Over the years, the funding provided for DOE conservation programs grew and supported a wide range of activities. For example, about one-half of the Department's conservation budget in fiscal year 1981 was allocated to financial incentives or assistance, such as grants to State and local governments in preparing for energy emergencies, the development of State energy conservation plans, energy audits for schools and hospitals, or weatherization for low-income people. Approximately one-third of the budget focused on research, development, and demonstration programs. Some of these

programs were expected to have rapid effects, but most were expected to produce a more gradual influence over time.

The current administration seeks a diminished Federal role in energy conservation. Decreases in U.S. energy consumption are interpreted by the administration as justification for a greatly reduced Federal role in promoting energy conservation.

GAO OBSERVATIONS

As discussed in the enclosure, some Federal conservation programs have made contributions to reducing national energy use; others have shown the potential to do so. Many could be improved and made more effective. For example:

- Appliance efficiency standards have been determined inappropriate by DOE as neither saving significant energy nor being economically justified. The basis for DOE's decision is not sound.
- The Federal Energy Management Program, charged with managing the Government's energy use, lacks strength, visibility, staff and management support, and is proposed to receive no funding in fiscal year 1983. Consequently, opportunities to reduce the Government's \$12 billion annual energy bill are likely to be missed.
- The Residential Conservation Service, designed to assist residential consumers save energy, is not even operating in 19 States.
- The Weatherization Assistance Program helps low-income persons reduce energy consumption in their dwellings. The success of the program has been hampered by poor workmanship, inadequate energy savings data, and inadequate financial management and program monitoring.

Important decisions are pending on individual conservation programs and on the Federal role in promoting energy conservation. Budget and legislative decisions now before the Congress will determine whether programs will continue to exist, and if continued, to what extent and in what form. The administration's fiscal year 1982 and 1983 budgets reflect a fundamentally different view from those views held by past administrations and Congresses regarding the Federal Government's role in achieving energy conservation. The administration believes that market forces already have assured, and will continue to assure, that energy conservation savings are achieved, thus eliminating the need for further major Federal involvement.

Since the administration believes that the marketplace will adequately encourage energy conservation, it proposes to cut out

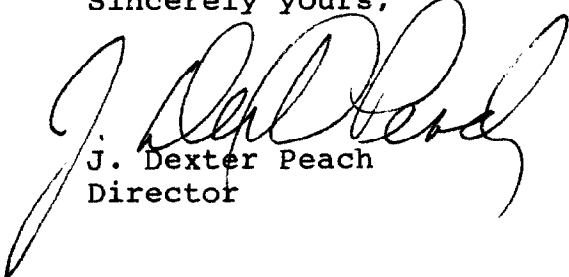
or sharply curtail nearly all Federal programs intended to encourage conservation. For fiscal year 1982, the administration proposed a conservation budget which would have greatly reduced Federal efforts; the Congress restored monies in order to maintain a higher level of support. For fiscal year 1983, the administration proposes to almost completely eliminate any Federal role in energy conservation. Thus, the Congress is again faced with making decisions on the continuation and extent of Federal programs to encourage energy conservation.

We recognize that decontrolling energy prices has increased the incentive for private sector efforts to identify and take advantage of conservation opportunities. However, abrupt changes in or discontinuance of Federal programs may preclude the timely realization of some energy conservation opportunities since it is not clear to what extent State, local, and private efforts will fill the void left by a substantially reduced Federal effort. Accordingly, there is a need to monitor progress toward capturing conservation opportunities and to foster or supplement responses to market forces when necessary to assure that progress toward reducing energy use does not falter or cease.

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As requested by your office, we did not obtain official agency comments on the matters discussed in this report. As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of the report. At that time we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,



J. Dexter Peach
Director

Enclosure

APPLIANCE ENERGY EFFICIENCY STANDARDS

The Energy Policy and Conservation Act (42 U.S.C. 6295), as amended by the National Energy Conservation Policy Act (Public Law 95-619), directs the Secretary of Energy to prescribe an energy efficiency standard for each of 13 major household appliances. No standard is to be prescribed which would not (1) be economically justified, (2) be technologically feasible, or (3) result in significant conservation of energy. In assessing the economic justification of standards, the Secretary is directed to consider their impact on, among other things, manufacturers, consumers, life-cycle costs, appliance usefulness, and national energy conservation.

STATUS

On April 2, 1982, DOE published, for public comment, a proposed rule covering 8 of 13 appliances. This proposal contained DOE's determination that no standards would be appropriate for any of the eight appliances. This is the culmination of nearly 3-1/2 years of DOE analysis and review, and it is DOE's second proposed rulemaking for these eight appliances. In June 1980, DOE published a proposed rule establishing standards for these same products.

DOE's current position, as discussed in the April proposal, is that standards would not result in a significant conservation of energy or be economically justified. DOE has requested no fiscal year 1983 funds for this program.

GAO VIEWS

We do not believe the basis for DOE's April proposal is sound. Our work has shown that DOE's April proposal relies heavily on an unvalidated key assumption, is inconsistent in its treatment of market force impacts, and uses projections of future energy prices which are significantly higher than other available estimates.

Overall, we believe DOE needs to resolve the problems and questions we identified before making a final determination on appliance energy efficiency standards.

GAO REPORTS

"Appliance Efficiency Standards: Issues Needing Resolution By DOE," GAO/EMD-82-78, May 14, 1982.

"Information on the Department of Energy's Analyses to Determine the Need for Appliance Efficiency Standards," EMD-82-33, Dec. 23, 1981.

"Preliminary Information on Appliance Energy Labeling and Appliance Efficiency Standards," EMD-81-122, July 20, 1981.

APPROPRIATE TECHNOLOGY

The Appropriate Technology Small Grants Program was established by the 1977 Energy Research and Development Administration authorization. Its purpose is to provide grants of up to \$50,000 to individuals, small businesses, State and local agencies, and Indian tribes to develop and demonstrate energy-related appropriate technology. The program goals are to (1) make more energy-related technology options available, (2) provide funding to individuals or groups that would not have funding otherwise, and (3) further promote national conservation efforts.

STATUS

Although the administration did not request funds for fiscal year 1982, the Congress appropriated funds for the program. DOE has indicated that it does not plan to award new grants in fiscal year 1982, but it will use funds to continue monitoring existing grants and to disseminate information at a reduced level. The fiscal year 1983 budget request contains no funds for the program.

GAO VIEWS

We believe that this program can help overcome barriers to the development and use of energy-related appropriate technology. DOE's broad program goals appear to adequately reflect the legislative purposes of the program. However, we do not believe that DOE has managed the program effectively.

Our specific concerns are the

- limited technical assistance available for grantees,
- failure to coordinate this program with related programs which have the potential to help further program goals, and
- lack of consistent application of criteria used to evaluate and select projects for funding.

Because of these problems, we questioned whether program funds have been used most effectively to encourage the development and widespread use of energy-related appropriate technology.

GAO REPORT

"Ineffective Management of the Appropriate Technology Small Grants Program," EMD-81-113, Sept. 15, 1981.

BUILDING ENERGY PERFORMANCE STANDARDS

The Energy Conservation and Production Act (Public Law 94-385), as amended, directs DOE to develop and promulgate building energy performance standards (BEPS) for new buildings. The standards were to achieve the maximum practical level of energy savings through energy efficient building design. Although not specifically included in the law, the Conference Committee report estimated that BEPS would account for energy savings of up to 12 quads per year by 1990.

The Housing and Community Development Act of 1980 (Public Law 96-399) required DOE to issue interim standards in August 1981 and final standards in April 1983. However, the Omnibus Budget Reconciliation Act of 1981 (Public Law 97-35) made BEPS voluntary except for Federal buildings and amended the effective date for standards to April 1, 1984.

STATUS

Neither interim nor final BEPS have been published by DOE. In November 1979, DOE proposed BEPS. Substantive comments were raised in the public hearing process, particularly with respect to the standard-setting methodology and the completeness of DOE's efforts. DOE initiated additional study following the public hearing process.

DOE requested no fiscal year 1982 money for BEPS stating its intention to complete research already underway and make it available to the public.

GAO VIEWS

In previous work, we stated our belief that DOE should consider whether voluntary BEPS would be a suitable alternative to a mandatory program. Our view was based on the apparent lack of awareness, by homeowners and builders, of the optimal level of conservation that could be achieved and that increased energy prices could motivate consumers to take conservation action. Thus, we generally support the current legislative requirements for a voluntary BEPS program.

GAO REPORTS

"Improved Data and Procedures Needed for Development and Implementation of Building Energy Performance Standards," EMD-81-2, Dec. 23, 1980.

"Uncertainties About the Effectiveness of Federal Programs to Make New Buildings More Energy Efficient," EMD-80-32, Jan. 28, 1980.

DRIVER AWARENESS

Under the provisions of the Energy Policy and Conservation Act (42 U.S.C. 6361), DOE is to carry out public education programs which encourage energy conservation and energy efficiency. One of these, the driver awareness program, is intended to make drivers aware of ways to save gasoline and money. It is aimed at Government energy policy administrators, fleet managers, and individual drivers. The driver awareness program was one of five major DOE near-term gasoline conservation programs.

STATUS

DOE is not pursuing this program in fiscal year 1982; funds were neither requested nor appropriated.

GAO VIEWS

We considered the driver awareness program in our assessment of DOE's overall efforts to achieve its stated goal of reducing near-term gasoline consumption by 10 percent. There were five such programs, and we found that they generally lacked overall direction and focus. We found that (1) the programs do not adequately support established goals, (2) the low priority accorded the programs was inconsistent with the seemingly high importance placed on gasoline conservation, and (3) program evaluation received low priority.

Gasoline conservation can play an important role in helping reduce the Nation's dependence on foreign oil. We reported that DOE needed to systematically assess its role in facilitating and supplementing private sector efforts to assure maximum realization of near-term gasoline conservation opportunities.

Our review was undertaken to identify ways to improve DOE's programs, given the assumption that DOE would continue to promote near-term gasoline conservation. Obviously, that assumption is no longer entirely valid. The only activity which continues to be funded in fiscal year 1982 is DOE's mandated responsibility to publish and distribute annual new-car mileage guides.

GAO REPORT

"The Department of Energy Should Provide Leadership to Assure Near-term Gasoline Conservation Opportunities Are Realized," EMD-81-52, Apr. 13, 1981.

ELECTRIC VEHICLES

The Electric and Hybrid Vehicle Research, Development, and Demonstration Act of 1976 (Public Law 94-413) was enacted to save oil and reduce oil imports by expediting the introduction of electric vehicles into the Nation's fleet. This objective was to be met through a program of research and development, demonstrations, and financial incentives to developers and producers.

STATUS

DOE has begun phasing out the program in accordance with its philosophy of concentrating on mostly long-term, high-risk research and development (R&D), with high potential payoff. Funding was significantly reduced in fiscal year 1982, and the administration plans to discontinue the program altogether in 1983. While DOE plans no new program activities, it is presently continuing support of activities initiated in prior years.

GAO VIEWS

While this program has had some important accomplishments, such as increasing consumer awareness of electric vehicles, it has made only marginal progress toward achieving the program's primary objective of expediting commercialization. Electric vehicles have been shown to be technically feasible and to have a market--although small with a limited number of applications. To expand that market to a level where appreciable quantities of oil can be saved will require the active participation of the major auto companies and the development of a much improved battery. A continued Federal program will have little influence on automaker decisionmaking unless they are convinced that these vehicles are capable of capturing a large market.

In addition, DOE has had other problems in three main program areas--demonstration, R&D, and financial incentives--which made program success less likely. These problems included (1) inadequate dissemination of demonstration results, (2) cost increases and performance shortfalls in prototype development efforts, and (3) the unclear contribution of DOE's two loan guarantees to enhancing the recipient's long-term future.

We believe DOE's budget proposals are appropriate for the most part. It is difficult to argue against curtailment of the demonstration and financial incentives activities and certain reductions in the R&D activity. However, we believe it makes sense to continue funding R&D related to advanced batteries.

GAO REPORTS

"Electric Vehicles: Limited Range and High Costs Hamper Commercialization," EMD-82-38, Mar. 19, 1982.

"The Congress Needs to Redirect the Federal Electric Vehicle Program," EMD-79-6, Apr. 9, 1979.

ENERGY EXTENSION SERVICE

The National Energy Extension Service Act (42 U.S.C. 7001) established the Energy Extension Service (EES) and directed that it develop and implement a comprehensive program for the identification, development, and practical demonstration of energy conservation practices and measures. Federal funds were also made available to support State-developed EES programs.

The purpose of the EES is to establish a positive energy outreach program directed at small businesses and individuals and to stimulate, provide for, and supplement programs supporting energy conservation efforts. In doing this, EES was to coordinate all Federal energy conservation outreach efforts and provide funds for States to establish and carry out EES activities.

STATUS

Following an initial pilot program including 10 States, EES was expanded nationwide in fiscal year 1980. The administration requested no funds for fiscal year 1982 EES activities, but the Congress made funds available, and additional grants were awarded. There are no funds for the program in the administration's fiscal year 1983 budget request.

GAO VIEWS

In February 1981, we reported on DOE's residential energy conservation outreach activities, including EES. We concluded that DOE had failed to capture the essence of the program's purpose as intended by the Congress. More specifically,

- the organizational location of EES within DOE is not equivalent to the organizational status originally required within the Energy Research and Development Administration by the National Energy Extension Service Act;
- many State-proposed EES residential outreach activities were similar to those carried out under the State Energy Conservation Program; and
- the coordination function, an important purpose of EES, was receiving limited attention.

If the program is continued, we believe it could make a greater contribution to energy conservation if DOE changed the overall emphasis to one which encourages consumers to obtain onsite energy audits.

GAO REPORT

"Residential Energy Conservation Outreach Activities--A New Federal Approach Needed," EMD-81-8, Feb. 11, 1981.

FEDERAL ENERGY MANAGEMENT PROGRAM

The Federal Government is the Nation's largest single energy consumer. A June 1973 presidential memorandum established the Federal Energy Management Program (FEMP) to manage the Government's own energy use. The Energy Policy and Conservation Act (Public Law 94-163) requires the President to develop and implement a 10-year plan to conserve energy in Federal buildings. To accomplish this effort, the President issued Executive orders directing DOE to develop this plan. In addition, the President mandated certain energy conservation measures for Federal buildings and automobile purchases.

The National Energy Conservation Policy Act (Public Law 95-619) requires Federal agencies to, among other things, perform energy surveys of Government-occupied buildings and facilities and retrofit them for energy efficiency. Agencies are required to develop plans for buildings retrofits and obtain approval of DOE's FEMP office.

STATUS

Although several draft versions of the overall 10-year plan have been prepared, no final version has been issued. DOE's FEMP office expects to issue the final plan in 1982. Ten of the 18 agency retrofit plans have been approved.

The Federal Government spent over \$12 billion in fiscal year 1981 for energy--approximately 2 percent of total national energy use. Although Federal energy use has declined 2.8 percent since 1975, recent trends show it is on the rise. For fiscal year 1981, energy use increased 3.4 percent above fiscal year 1980.

In the fiscal year 1982 budget request, the administration stated that this internal conservation program would be retained. However, in the fiscal year 1983 submission, no funds are being requested and the program is proposed for termination. This means that all efforts to develop and carry out a comprehensive energy conservation program, including data collection, Federal buildings conservation plans, and overall coordination and leadership for the Nation's largest single energy user will be abolished.

GAO VIEWS

Numerous GAO reports have concluded that the Federal Government needs to have an aggressive energy conservation program. Many of the legislative and Executive order mandates which direct and support an aggressive in-house conservation effort are not being met because of insufficient commitment in the areas of organizational visibility, staffing, and management support. Identifying cost effective conservation opportunities nationwide and taking necessary corrective measures could result in substantial savings. For example, a 1-percent decrease in consumption could save over \$100 million.

We believe that the Federal Government, as the Nation's largest single energy consumer, needs to have an aggressive energy conservation program. Problems we previously identified in the Federal Government's in-house energy conservation program continue to exist. FEMP has the potential, however, given top management leadership and support at the Office of Management and Budget and DOE, to reduce Federal energy consumption and help reduce the Government's \$12 billion energy bill.

GAO REPORTS

"Energy-Efficient and Cost-Effective Equipment Should be Installed in New Government Housing," EMD-81-93, Sept. 16, 1981.

"The Federal Government Needs a Comprehensive Program To Curb Its Energy Use," EMD-80-11, Dec. 12, 1979.

"Energy-Saving Strategies for Federal Procurement," EMD-79-68, June 19, 1979.

"More Use Should Be Made of Energy Saving Products in Federal Buildings," EMD-79-11, Jan. 23, 1979.

RESIDENTIAL CONSERVATION SERVICE

The National Energy Conservation Policy Act (Public Law 95-619), as amended by the Energy Security Act (42 U.S.C. 8701), requires large electric and gas utilities, through the Residential Conservation Service (RCS) program, to provide various energy conservation services to their residential consumers. As currently designed, the central feature of this program is an onsite inspection of a consumer's home by a qualified energy auditor with a number of ancillary services also provided to assist in the implementation of recommended measures.

STATUS

More than 3 years after the program was created, 19 States have not yet implemented a RCS program (due to lack of an approved plan or failure to implement one), and at least 4 other States have not implemented their program according to regulations or approved State plans. Under the provisions of the enacting legislation, DOE is required to order utility compliance with a DOE-developed plan if (1) a State does not have an approved plan or (2) an approved plan is not being adequately implemented. DOE has not exercised this Federal Standby Authority.

In November 1981, DOE proposed a major revision to the RCS program regulations which significantly relaxes or eliminates many existing program requirements. The regulations are expected to be finalized in June 1982. Regulations have not yet been proposed for implementing its mandated Federal Standby Authority.

GAO VIEWS

A wide diversity exists in the operational status of State programs and much uncertainty and confusion surrounds the program's future. As a result of DOE's failure to fulfill its administrative and enforcement responsibilities, together with its intention to provide no funding for further program implementation, nearly half of the States do not have a RCS program or are not implementing the program consistent with existing regulations or approved State plans. States with ongoing programs have had widely differing program experiences including differences in participation rates, costs, compliance with existing regulations, and audit results presented to consumers.

Overall, we are concerned about the RCS program's current status. Most of the problems we found could be substantially resolved by appropriate DOE actions. For example, if DOE were to effectively monitor ongoing programs and use its Federal Standby Authority as required by statute, we believe the RCS program would be consistently implemented and achieve nationwide operational status.

Budget and legislative decisions now before the Congress will determine whether the program will continue to exist, and if continued, the types of consumer services to be provided by utilities under the program. However, if the Congress decides to continue the program in its current form and DOE persists in its reluctance to implement it, States are likely to continue to abandon RCS or exercise a great degree of flexibility in carrying out the program. In either case, congressional expectations for the program are not likely to be met.

GAO REPORT

"The Residential Conservation Service: Issues Affecting the Program's Future," EMD-82-70, Mar. 29, 1982.

LOW-INCOME WEATHERIZATION ASSISTANCE

The Energy Conservation and Production Act (42 U.S.C. 6801) authorized a program of weatherization assistance for low-income persons. The purpose of DOE's weatherization assistance program for low-income persons is to achieve a prescribed level of insulation in their dwellings, particularly the elderly and handicapped, to attain the maximum practicable energy conservation in their homes, and to aid those persons least able to afford higher utility or fuel costs.

STATUS

As of the end of fiscal year 1981, this program, which began in 1977, has weatherized about 758,000 of an estimated total of 12 million eligible households.

The administration proposes to terminate DOE's low-income weatherization program and provide emergency financial aid and crisis support through a Department of Health and Human Services (HHS) program.

GAO VIEWS

In an October 1981 report, we reported that although weatherization production increased in 1980, the outlook for maintaining a high level beyond 1981 was doubtful because of budget reductions and increased cost per unit due to more reliance on contract services to do weatherization work. We also reported that the program has been hampered by poor workmanship, inadequate energy savings data, and inadequate financial management and program monitoring.

We concluded, however, that a successful low-income weatherization program could go a long way toward reducing the energy bills of low-income households. Also, a successful program could reduce the costs of the Low-Income Home Energy Assistance Program, which received funding in fiscal year 1982 of about \$1.8 billion to provide grants to States for assistance to low-income persons for payment of home energy costs. The Low-Income Home Energy Assistance Program, which is administered by HHS, permits each State to use up to 15 percent of its allotment for low-cost residential weatherization or other energy-related home repairs for low-income households.

If the DOE low-income weatherization program is terminated as proposed by the administration and the HHS program retains its weatherization element, it will be the sole remaining Federal program providing low-income weatherization assistance. However, under the existing HHS program, weatherization is limited to "low-cost" measures, whereas, under the DOE program, up to \$1,600 per unit can be expended for weatherization. Therefore,

if the proposed HHS program is similarly limited, the program is not likely to be as effective as the DOE program in reducing energy costs.

GAO REPORTS

"Uncertain Quality, Energy Savings, and Future Production Hamper the Weatherization Program," EMD-82-2, Oct. 26, 1981.

"Slow Progress and Uncertain Energy Savings in Program to Weatherize Low-Income Households," EMD-80-59, May 15, 1980.