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Report to the Congress; by Elmer B. Staats, Comptroller General.

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Title IV of the Energy Conservation and Production Act authorized four programs to encourage and facilitate the implementation of energy conservation measures and renewable-resource energy measures in dwelling units, nonresidential buildings, and industrial plants. The authorized programs are: supplemental State energy conservation plans, weatherization assistance for low-income persons, energy conservation and renewable-resource obligation guarantees, and national energy conservation and renewable-resource demonstration for existing dwelling units.

Findings/Conclusions: The renewable-resource obligation guarantees program is a discretionary program designed to guarantee the outstanding principal amount of an obligation whose purpose is to finance the installation or implementation of an energy conservation or renewable-resource energy measure in any existing building or plant. The program has not been implemented. As of September 30, 1977, 55 jurisdictions were participating in State base programs, and 22 were participating in the supplemental programs for energy conservation. At the end of fiscal year 1977, Federal program expenditures were \$6.8 million for the base and \$3.7 million for the supplemental programs. Administration and operation of the State programs need to be improved in the areas of assessing program impact, accounting of funds, monitoring compliance, and providing technical assistance. Two Federal low-income weatherization programs have nearly identical purposes, methods of funding, and

weatherizing measures. Both lack centralized control and authority. Recommendations: The Secretary of Energy should test the guarantees program and proceed with a demonstration program sufficient to evaluate alternative financial incentives. With regard to the State energy conservation program, the Secretary of Energy should: require States to report on an annual basis the actual energy savings achieved, review and certify the States' accounting systems, review with States the Federal requirements concerning the use of Federal funds, require all States to use the monitoring system developed by the Department of Energy, and make sure that energy progress is reported consistently. The Congress should transfer the responsibility for administering the Community Services' Administration weatherization program to the Energy Department in order to centralize control and authority. The Secretary of Energy and Director of the Community Services Administration should each establish an interim limit of \$400 of Federal funds to be used for weatherization materials per dwelling unit. (RRS)

BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Evaluation Of Four Energy Conservation Programs-- Fiscal Year 1977

Four programs to increase energy conservation authorized by the Congress were delayed in getting under way and two of them had not been started. The Department of Energy needs to improve its administration of some of these programs and be alert to potential problems which could limit their effectiveness. In addition, the Department should move forward with those programs not underway.



EMD-78-81
NOVEMBER 21, 1978



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

R-178205.97

To the President of the Senate and the
Speaker of the House of Representatives

This report is the first in a series mandated by section 462 of the Energy Conservation and Production Act (42 U.S.C. 6892) on the Department of Energy's progress in implementing four specific energy conservation programs. It discusses the need for the Department of Energy to take action to implement and improve administration and effectiveness of these programs.

We made this examination pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

Copies of this report are being sent to the Director, Office of Management and Budget; the Secretary of Energy; the Director, Community Services Administration; and the chairmen of energy-related congressional committees.

A handwritten signature in black ink, reading "Luther B. Staitch".

Comptroller General
of the United States

D I G E S T

The Energy Department is authorized by the Energy Conservation and Production Act, passed in August 1976, to develop four programs to encourage and facilitate energy conservation measures and renewable-resource energy measures (measures which use nondepletable energy sources) in dwellings, nonresidential buildings, and industrial plants. These programs are the

- energy conservation and renewable-resource obligation guarantees,
- national energy conservation and renewable-resource demonstration for existing dwelling units,
- supplemental State energy conservation plans, and
- weatherization assistance for low-income persons.

The same law requires the Comptroller General to report to the Congress annually for fiscal years 1977, 1978, and 1979 on the activities being carried out under these programs. (See p. 1.)

GAO recognized that because time is needed to develop and plan programs, they would not be fully operational or free of administrative problems. Accordingly, GAO's conclusions and recommendations should be viewed as guidance for developing and improving the overall administration and effectiveness of the programs as they become more fully operational.

OBLIGATION GUARANTEES PROGRAM AND
DEMONSTRATION FOR EXISTING
DWELLING UNITS PROGRAM

The energy conservation and renewable-resource obligation guarantees program is a discretionary

program designed to guarantee the outstanding principal amount of an obligation if its purpose is to finance the installation or implementation of an energy conservation or renewable-resource energy measure in any existing building or industrial plant. The program has not been implemented. (See p. 50.)

The national energy conservation and renewable-resource demonstration for existing dwelling units program is designed to test the feasibility and effectiveness of various forms of financial assistance as incentives for installation of approved energy conservation and renewable-resource energy measures in existing dwellings. A demonstration program to test one form of financial assistance is scheduled for initial limited implementation in the fall of 1978. (See pp. 57 to 59.)

There are few federally legislated programs which encourage the application of renewable-resource measures, yet the administration's National Energy Plan calls for more widespread use of renewable resources. The Energy Department should view the obligation guarantees program and the demonstration program as opportunities to assess which types of financial incentives encourage greater use of renewable-resource measures and to evaluate how the programs could contribute to meeting National Energy Plan goals for renewable resources. (See pp. 56 and 59.)

STATE ENERGY CONSERVATION PROGRAM

Active State participation in the State energy conservation program can set the groundwork for developing a strong national conservation ethic and form the basis for future Federal/State relationships and coordination in dealing with all energy problems. This program contains a base and a supplemental program. As of September 30, 1977, 55 jurisdictions were participating in the base program and 22 were participating in the supplemental program. At the end of fiscal year 1977, Federal program expenditures were \$6.8 million and \$3.7 million for the base and supplemental programs, respectively. (See pp. 3 and 11.)

Thirty-one States reported savings of about 85.75 trillion British thermal units (or 42,000 barrels of oil per day equivalent) for the base program in calendar year 1977. The reported savings did not differentiate between projected and actual savings. (See pp. 15 to 18.)

Administration and operation of the State program can be improved in the areas of assessing program impact, accounting of funds, monitoring compliance, and providing technical assistance.

Some States experienced delays in starting their conservation programs because Energy Department headquarters, its regional offices, and the States themselves failed to meet schedules for developing and beginning the program. This delay may reduce the total energy savings to be realized from the State program. (See pp. 18 to 20.)

GAO's review of the accounting systems and procedures used by the Energy Department and the States revealed that financial controls, such as letter of credit procedures and submission of revised budgets, were not always followed. (See pp. 12 to 14.)

At the end of fiscal year 1977, most States had not developed a monitoring system and the Energy Department's system was inadequate to monitor States' progress. The amount, value, and comparability of information contained in the regional quarterly evaluation reports varied. The Energy Department had not conducted onsite visits to see how States had carried out the program. (See pp. 25 to 28.)

Energy Department regional offices are responsible for providing technical assistance, if requested, to States, subject to the availability of personnel and funds. Both State and Energy Department officials agree there is a need for the Department to be in a better position to respond to requests for technical assistance. (See p. 25.)

WEATHERIZATION ASSISTANCE
FOR LOW-INCOME PERSONS

Currently two Federal low-income weatherization grant programs--administered by the Energy Department and the Community Services Administration--have nearly identical purposes, methods of funding, and acceptable weatherization measures but lack centralized control and authority. (See pp. 32 to 34.)

As of September 30, 1977, the Energy Department had awarded grants of \$6.84 million to 12 States but no State had yet begun weatherization activities. (See p. 35.)

GAO noted the following:

- The Energy Department could not determine the expected impact of the program in terms of energy savings since the Department allowed States, when submitting their first year's application, to project energy savings in terms of either British thermal units or as a percentage reduction of energy consumed. (See p. 36.)
- The Energy Department had not developed a method for selecting those eligible dwelling units where the greatest potential of energy savings exists, consistent with assuring that the target populations benefit from the programs. (See p. 41.)
- Few rented dwelling units with tenants having low incomes were planned to be weatherized, even though based on 1970 census data almost 50 percent of the low-income homes in the United States are renter occupied. (See p. 38.)
- An unreasonable amount of Federal funds could be spent on a single dwelling unit if previous Federal weatherization assistance is not considered. (See p. 39.)
- Most labor for the program will be provided under the Department of Labor's Comprehensive Employment and Training Act. Energy Department and State officials noted possible shortages of this source of labor. (See p. 40.)

--The Energy Department required grantees to submit periodic performance and financial reports and is developing a monitoring system to evaluate administrative procedures and to inspect weatherized homes. (See pp. 42 to 45.)

Since similar accounting procedures are used for both the State energy conservation program and the Energy Department's weatherization program, the accounting problems discussed under the State program may occur in administering the weatherization program.

RECOMMENDATIONS

Obligation guarantees program and demonstration program for existing dwelling units

The Secretary of Energy should test the guarantees program and proceed with a demonstration program sufficient to evaluate alternative financial incentives. Particular attention should be given to encouraging the installation and implementation of renewable-resource measures.

State energy conservation program

The Secretary of Energy should:

- Require States to report on an annual basis only actual energy savings achieved.
- Review and certify the States' accounting systems.
- Review with States the Federal requirements concerning the use of Federal funds, focusing on letter of credit procedures and the submission of revised program budgets.
- Require all States to put the State monitoring system developed by the Energy Department into effect or a State-developed monitoring system of equal or better requirements.
- Make sure that information on program progress and its effect on 1980 energy savings goals is reported consistently.

- Provide, in an adequate and timely manner, technical assistance needed by States to carry out the State energy conservation program.

Additional details and recommendations are included on page 29.

Weatherization assistance for low-income persons program

The Congress should transfer the responsibility for administering the Community Services Administration weatherization program to the Energy Department in order to centralize control and authority in the agency having energy responsibility. This is consistent with an administration proposal favoring the transfer of weatherization activities to the Department.

The Secretary of Energy and the Director, Community Services Administration, each should establish a maximum interim limit of \$400 of Federal funds that can be used for weatherization materials per dwelling unit and require that any amount in excess of this be approved by the grantees' advisory council.

The Secretary of Energy should:

- Require that all grantees state energy savings in terms of British thermal units in their annual program applications and instruct States to use past program experience as a basis for determining projected energy savings.
- Develop and implement a priority system for selecting those eligible units, both owner occupied and renter occupied, where the greatest potential of energy savings per dollar invested exists and at the same time focus on the target populations.
- Watch the labor situation closely and take appropriate action if problems arise.

--Develop a comprehensive monitoring system.

AGENCY COMMENTS

The Energy Department stated that many points made in the State program chapter of the report corroborated its observations. However, the Department was concerned that:

- GAO had not noted corrective actions the Department had taken for many situations mentioned in the report.
- The report placed heavy emphasis on the base, rather than supplemental, State energy conservation program.
- The report focused on program administration rather than thoroughly evaluating the program's effectiveness.
- GAO's recommendation on reporting only actual energy savings achieved will not comply with the Department's requirement to report to the Congress annually on program progress and energy savings.

GAO recognizes that changes have occurred in many areas since the audit work for fiscal year 1977 was completed, and updated information provided by the Energy Department has been included in pertinent sections of the report.

Given the fact that the supplemental State energy conservation program experienced delays in program development and implementation, program evaluation necessarily was limited. GAO provided detailed information on the base program because its purpose and administration are similar to the supplemental State program.

GAO's 1977 evaluation concentrated on administration of the State program because effective development and administration is critical to the ultimate success in achieving the energy conservation and renewable-resource potential available.

GAO believes that the Energy Department's reporting date is flexible and would allow for including only data on actual energy savings achieved rather than including both actual and projected energy savings. By continuing to use the October 30 reporting date, States could determine actual energy savings for the Federal fiscal year.

The Community Services Administration did not believe that transferring its weatherization activities to the Energy Department would solve the difficulties mentioned in the report. GAO's basis for recommending transferral is to allow for the consolidation of energy functions in the agency having major energy responsibility; not because one agency is more administratively capable of handling the program.

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ABBREVIATIONS

Btu	British thermal unit
CETA	Comprehensive Employment and Training Act
CSA	Community Services Administration
DOE	Department of Energy
ECPA	Energy Conservation and Production Act
EPCA	Energy Policy and Conservation Act
GAO	General Accounting Office
HUD	Department of Housing and Urban Development
NEP	National Energy Plan

CHAPTER 1

INTRODUCTION

Title IV of the Energy Conservation and Production Act (ECPA) (Public Law 94-385), enacted August 14, 1976, authorizes four programs to encourage and facilitate the implementation of energy conservation measures and renewable-resource energy measures in dwelling units, nonresidential buildings, and industrial plants. The programs authorized are

- supplemental State energy conservation plans,
- weatherization assistance for low-income persons,
- energy conservation and renewable-resource obligation guarantees, and
- national energy conservation and renewable-resource demonstration for existing dwelling units.

Section 462 of ECPA requires the Comptroller General to report to the Congress annually for fiscal years 1977, 1978, and 1979 on the activities being carried out under these programs. As required by ECPA, our review included, where appropriate,

- an accounting by State of Federal expenditures under each program,
- an estimate of the resulting energy savings,
- an evaluation of each program's effectiveness in achieving the energy conservation or renewable-resource potential available, and
- a review of the extent and effectiveness of compliance monitoring of the programs and of any evidence of fraud.

This is our first annual report, and it generally covers activities since the programs were initiated through September 30, 1977. We recognized that because time is needed to develop and plan programs, they would not be fully operational and administratively problem free. Thus, our conclusions and recommendations should be viewed as guidance for developing and improving the overall administration and effectiveness of the programs as they become fully operational.

While originally the responsibility of the Federal Energy Administration and the Department of Housing and Urban Development (HUD), all of the programs authorized by title IV were transferred by the Department of Energy Organization Act (42 U.S.C. 7151 et seq.) to the Department of Energy (DOE), 1/ effective October 1, 1977. DOE is required to implement three of the four programs and has discretionary authority to implement the energy conservation and renewable-resource obligation guarantees program.

SCOPE

Although required to report only on the four title IV programs, we have also included discussions of two closely related programs--the base State energy conservation program 2/ and the Community Services Administration (CSA) weatherization program, since their administration and purpose are very similar to two of the title IV programs.

We reviewed, at the national level, the status of each of the title IV programs and the base State energy conservation program. In order to provide geographic coverage, we visited four DOE regional offices and eight States within those regions. At the regional offices, we reviewed 24 base and 24 supplemental State program plans and 21 weatherization program plans. (See app. I.) The particular States we visited were selected for one or more of the following reasons: high expected energy savings, large DOE grant funds, problems in program implementation, expenditure of program moneys, and large Native American populations. The latter category was included because, under ECPA, Native Americans may receive special attention under the weatherization assistance for low-income persons program.

The CSA weatherization program was reviewed in a separate report.

The remainder of the report discusses each of the title IV programs and presents our findings, conclusions, and recommendations.

1/For purposes of the report, DOE will be used when referring to the Federal Energy Administration and its activities prior to Oct. 1, 1977.

2/The base State energy conservation program was established by section 361 of the Energy Policy and Conservation Act to promote the conservation of energy and reduce the rate of growth of energy demand.

CHAPTER 2

STATE ENERGY CONSERVATION PROGRAM

Active participation by the States in the State energy conservation program can set the groundwork for developing a strong national conservation ethic and form the basis for future Federal/State relationships and coordination in dealing with all energy problems. Most efforts by DOE and States through the end of fiscal year 1977 involved developing and approving the base and supplemental energy conservation plans; the amount of actual program implementation by States varied. DOE will need to make some changes in its administration of the program in order to be in a position to adequately assess the success of the program and its likely contribution to the overall Federal energy conservation effort.

The administration and implementation of the program can be improved. Specifically, the program lacked (1) adequate financial controls, (2) guidance for measuring energy savings, (3) timely and appropriate technical assistance, and (4) an effective monitoring system. Some of these problems are being corrected by DOE.

PROGRAM PURPOSE

Under the State energy conservation program, DOE is to establish procedures and guidelines for developing and implementing specific State energy conservation programs and to provide Federal financial and technical assistance to States in support of these programs. The purpose of the State program is to promote energy conservation and reduce the growth rate of energy demand in both the public and private sectors. The purpose should be achieved through a strong State support of Federal energy conservation programs and by each State's development of its own commitments to energy conservation.

The Congress recognized that State energy conservation programs could complement Federal programs. The Congress found that States were in a unique position to effect immediate and substantial reductions in the growth rate of energy demand through State laws, policies, programs, and procedures designed to conserve energy. Further, States were best capable of designing energy conservation programs that would both satisfy their unique conditions and requirements and minimize adverse impacts that might arise from changing patterns of energy use. Accordingly, the Congress established the State energy conservation program.

The program provides a means by which a State can voluntarily cooperate with the Federal Government. Eligibility for the program was extended to 56 jurisdictions, or "States"--the 50 States, Guam, the District of Columbia, Puerto Rico, the Virgin Islands, American Samoa, and the Trust Territory of the Pacific. The Trust Territory of the Pacific is the only jurisdiction which declined to participate, citing geographic dispersion of more than 200 populated islands in a 3-million-square-mile area as an impeding factor in implementing a cost-effective program.

PROGRAM ADMINISTRATION

The State energy conservation program is administered on a decentralized basis through the 10 DOE regional offices. DOE headquarters has overall responsibility for program development and the administration of financial and technical assistance to the States. Headquarters duties include, among other things,

- supplying program administration guidelines and criteria,
- developing methodologies and data for States to estimate energy savings,
- developing the data base model for forecasting 1980 energy consumption by State, and
- developing a monitoring system.

DOE regional offices serve as the primary interface with the States. The regions are responsible for

- reviewing and approving State plans and budgets,
- authorizing funds,
- providing technical assistance to the States,
- monitoring and evaluating the State's implementation of its plan,
- validating energy savings estimates, and
- negotiating the energy savings goal of each State.

Responsibility for meeting the ultimate objective of the program--energy conservation--rests with each State. Each

participating State is responsible for submitting a proposed energy conservation plan, financial reports, and progress reports. In addition, the State is responsible for establishing and maintaining adequate procedures and internal financial controls governing the management and utilization of Federal funds.

The State energy conservation program is divided into a base and supplemental program. The base program, established on December 22, 1975, with passage of the Energy Policy and Conservation Act (EPCA) (42 U.S.C. 6201), provided the basis for State involvement in energy conservation and authorized Federal financial support to States for fiscal years 1976-78. The supplemental program, established by ECPA, provided additional financial assistance to States in fiscal years 1977-79. Total authorizations for the State program for the four fiscal years are \$255 million. In order for a State to receive Federal financial assistance, the State must fulfill specific legislated requirements.

Base program requirements

Under the base program, each participating State is responsible for developing and implementing a comprehensive State energy conservation plan linking scheduled progress of each required and optional program measure 1/ toward achieving a State energy conservation goal of reducing the total amount of projected energy consumption for each State in 1980 by 5 percent or more. The plan must contain a detailed description of both required and optional measures, including the estimated cost of implementation and the projected energy savings associated with each measure. ECPA required each proposed State energy conservation plan to include

- mandatory lighting efficiency standards for non-Federal public buildings;
- mandatory thermal efficiency standards and insulation requirements for non-Federal new and renovated buildings;

1/Program measure--one or more State actions in a particular area designed to effect energy conservation and initiated or augmented between Dec. 22, 1975, and Dec. 31, 1980. Actions excluded are those involving programs which are authorized by Federal statute and are wholly implemented by the Federal Government without the active participation of a State or local government, other than for usual coordination or acknowledgement.

- a traffic law or regulation which, to the maximum extent practicable consistent with safety, permits the operator of a motor vehicle to turn the vehicle right at a red stop light after stopping;
- mandatory energy efficiency standards and policies relating to the procurement practices of a State and its political subdivisions; and
- programs to promote the availability and use of car-pools, vanpools, and public transportation.

In addition to the five required measures, the following optional measures could be included in each State plan:

- Restrictions on the hours and conditions of operation of public buildings.
- Restrictions on the use of decorative or nonessential lighting.
- Controls on transportation.
- Programs of public education to promote energy conservation.
- Any other appropriate method to conserve and to improve efficiency in the use of energy.

Supplemental program requirements

Under the supplemental program, each participating State must develop and implement a plan containing a detailed description of additional required and optional program measures, including the estimated cost of implementation, the estimated energy savings associated with each measure, and a schedule of when and how the measure will be achieved.

According to ECPA, each supplemental plan is required to include procedures for

- carrying out a continuing public education effort to increase significantly public awareness of
 - (1) the energy and cost savings likely to result

from the implementation of energy conservation measures 1/ and renewable-resource energy measures 2/ and (2) information and other assistance for planning, financing, installing, and monitoring the effectiveness of measures likely to conserve or improve efficiency in the use of energy;

--insuring that effective coordination exists among various local, State, and Federal energy conservation programs within and affecting the State; and

--encouraging and carrying out energy audits 3/ for buildings and industrial plants within the State.

1/Energy conservation measure--a measure which modifies any building or industrial plant constructed before Aug. 14, 1976, and is determined by means of an energy audit or by DOE to be likely to improve the efficiency of energy use and to reduce energy costs in an amount sufficient to enable a person to recover the total cost of purchasing and installing such measure within the period of the useful life of the modification involved or 15 years after the purchase and installation of such measure, whichever is less.

2/Renewable-resource energy measure--a measure which modifies any building or industrial plant constructed before Aug. 14, 1976, and which has been determined by means of an energy audit or by DOE to

--involve changing, in whole or in part, the fuel or source of energy used to meet the requirements of such building or plant from a depletable source of energy to a nondepletable source of energy and

--be likely to reduce energy costs in an amount sufficient to enable a person to recover the total cost of purchasing and installing such measure within the period of the useful life of the modification involved or 25 years after the purchase and installation of such measure, whichever is less.

3/Energy audit--any process which identifies and specifies the energy and cost savings which are likely to be realized through the purchase and installation of particular energy conservation measures or renewable-resource energy measures.

ECPA cited the following optional measures which could be included in each State supplemental plan:

- The formation and appointment of qualified individuals to a State energy conservation advisory committee.
- A program to prevent unfair or deceptive practices affecting commerce which relate to the implementation of energy conservation and renewable-resource energy measures.
- Procedures for periodically verifying the purchase, installation, and actual cost of energy conservation and renewable-resource energy measures for which financial assistance is obtained under the national energy conservation and renewable-resource demonstration program for existing dwelling units, or the energy conservation and renewable-resource obligation guarantees program.
- Assistance for individuals to undertake cooperative action to implement energy conservation and renewable-resource energy measures.

Any number and variety of additional energy conservation measures could be included if the measures contributed to energy savings.

The remainder of this chapter will address each of the areas in which we are required to report. Unless otherwise stated, the material addresses the base and supplemental programs jointly.

ACCOUNTING OF FUNDS

Our review of DOE and State accounting controls and procedures revealed that

- letter of credit procedures were not always followed,
- State financial controls were not followed, and
- revised budgets were not submitted by States as required.

EPCA and ECPA authorized funds for the development and implementation of the base program and supplemental program, respectively. The table below shows the funds authorized and appropriated by the Congress for each program. DOE has

divided the appropriations into money awarded as grants to States and money to be used for administrative purposes at DOE headquarters and regional offices.

	Base program			Supplemental program		
	FY 76	FY 77	FY 78	FY 77	FY 78	FY 79
	----- (millions) -----					
Authorized	\$50.0	\$50.0	\$50.0	\$25.0	\$40.0	\$40.0
Appropriated	a/5.0	25.0	50.0	12.2	23.5	(b)
administrative	-	2.5	3.0	.2	-	-
grants	5.0	22.5	47.0	12.0	23.5	-

a/The \$5 million, which included \$1 million from existing funds, can be used only for planning purposes.

b/Both the House and Senate versions of the appropriations bill (H.R. 12932) included \$10 million, as requested by DOE.

Subject to passage of the National Energy Act, DOE has requested \$47.8 million in fiscal year 1979 for the base program. Although funds were authorized for \$150 million for fiscal years 1976-78, appropriations for that period only amounted to \$80 million. Appropriating funds equal to the requested amount would allow DOE to receive funds closer to the amount originally authorized and, according to DOE, would allow for more effective implementation of the conservation efforts currently underway in each participating State.

DOE grant funds are divided among participating States according to a formula developed by DOE. The funding formula for the base program varies by year, as indicated below.

<u>Fiscal year</u>	<u>Funding formula</u>
1976	50 percent divided equally among States 50 percent divided among participating States based on resident population
1977	25 percent divided equally among participating States 75 percent divided to participating States based on resident population
1978	25 percent divided equally among participating States 40 percent divided to participating States based on resident population 35 percent divided to participating States based on projected 1980 British thermal unit (Btu) energy savings established on September 30, 1977

Of each year's supplemental grant appropriations, 25 percent is divided equally among participating States and 75 percent is divided on the basis of State population.

In addition to the DOE grant funds, States can use non-DOE funds, such as funds from State and local governments, private organizations, and other Federal funds, to carry out the base and supplemental programs. Many States have used or are planning to use non-DOE funds.

Listed below is the status of Federal funds for the State energy conservation program as of September 30, 1977. (See app. II for status of program by State.)

	<u>FY 1976</u>		<u>FY 1977</u>	
	<u>Amount</u>	<u>States involved</u>	<u>Amount</u>	<u>States involved</u>
	(millions)		(millions)	
Base State program:				
Amount of grants awarded	\$4.95	55	\$22.50	55
Expenditure of funds (note a)	4.40	55	2.39	17
Supplemental State program:				
Amount of grants awarded			<u>c/5.62</u>	<u>c/22</u>
Expenditure of funds (note a)	(b)		3.75	13

a/As reported by DOE.

b/Supplemental State program not authorized in fiscal year 1976.

c/By Dec. 31, 1977, all 55 States were participating and grants were awarded for \$12 million. DOE had until Dec. 31, 1977, to obligate the fiscal year 1977 supplemental program moneys.

Letter of credit procedures not always followed

States have not complied with letter of credit procedures on several occasions. DOE uses a letter of credit to distribute grant funds to States. 1/ We found that some States withdrew more funds than allowed by DOE's letter of credit policy or submitted incomplete or incorrect financial forms.

The letter of credit is an instrument certified by a DOE regional official which authorizes a State to draw funds when necessary from a Department of the Treasury Regional Disbursing Office. According to DOE's letter of credit policy, the amount advanced is limited to the greater of \$10,000 or

1/According to DOE, Pennsylvania is the only State not using the letter of credit funding mechanism due to constraints by the State legislature. Pennsylvania uses a reimbursement by Treasury check, which is a payment made to a grantee with a Treasury check upon request for reimbursement from the grantee.

the minimum amount needed for current operations. The timing and amount of cash that a grantee may withdraw should be as close to actual daily disbursements as is administratively feasible. Withdrawals are made by submitting a request for payment on letter of credit and status of funds report to the Treasury Regional Disbursing Office and a copy to the DOE regional office.

At least three States included in our review withdrew, at one time, over \$10,000 from the U.S. Treasury but did not report the use of the funds for current operations. Such instances are inconsistent with States' responsibility to request only those funds needed for current operations. For example, one State withdrew about \$60,000 and 40 days later the State had still not spent over \$10,000 of the \$60,000. Another State withdrew \$50,000 on March 1, 1977, and the financial status report for the period ending March 31, 1977, showed the State had not spent \$18,642 of the \$50,000.

Two of the DOE regions we visited were contacted by their respective Treasury Regional Disbursing Offices concerning problems States had experienced when submitting request for payment on letter of credit and status of funds reports. Most problems involved mathematical errors and omission of required data.

We believe DOE should review with States the proper letter of credit procedures to help assure that these deficiencies are corrected.

Some State financial controls not followed

Although States are responsible for establishing adequate accounting systems, over half of the States we visited did not maintain current and accurate accounting records. In addition, DOE had not certified many States' accounting systems as required by its program guidelines.

States are responsible for establishing and maintaining adequate procedures and internal financial controls for managing using Federal funds. Federal Management Circular 74-7 1/ and the "DOE Grants-in-Aid Management Handbook," both

1/Federal Management Circular 74-7 was revised and issued in the Federal Register on September 12, 1977, as Office of Management and Budget Circular No. A-102. For most of fiscal year 1977, Federal Management Circular 74-7 was in effect.

of which were distributed to all States, required that each State's financial management system should, among other things:

- Reflect accurate, current, and complete disclosure of the financial results of each grant program.
- Require records which identify adequately the sources and application of funds for grant-supported plan implementation. The records should also identify the use of non-DOE funds in plan implementation.
- Insure effective control and accountability for all funds.
- Provide for the comparison of actual expenditures with budget amounts for each plan and for the display of relationships between expenditures and program results.
- Require accounting records which are supported by source documentation.
- Require audits to be made in accordance with procedures established by DOE.

Five of the eight States covered in our review did not maintain current and accurate accounting records. For example, data relating to the State grant program was not always entered into the State's accounting records in a timely manner. One State reported to DOE on September 1, 1977, that it spent all of its planning grant funds, yet State computerized records showed as of September 30, 1977, about \$9,000 of DOE grant funds on hand. According to a State official, these funds had been spent but had not been obligated to specific accounts. In another State, the account balance of June 30, 1977, was reported on two different occasions to be different by about \$3,500. The June 30, 1977, balance was reported on July 29, 1977, as \$73,474 and reported on September 2, 1977, as \$69,901. This was the result of processing additional vouchers. In the remaining three States, we found the accounting records to be accurate.

According to DOE, Office of Management and Budget Circular No. A-102 requires DOE to certify that State accounting systems are adequate to handle the needs and funds granted under the State program. DOE guidelines require each regional office to certify a State's financial management system before the State receives Federal grant moneys. However, the regions in our review did not fulfill this requirement but, according

to DOE, relied on the fact that States were accounting for funds from other Federal grant programs under their existing financial management system. The regions visited generally were not aware of the adequacy of financial controls within their States. One region, however, did audit the accounting system of one of its States and found the procedures adequate.

Inaccurate and noncurrent State accounting records can result in submission of incorrect forms, such as the financial status reports, and premature requests for payment on letter of credit and status of funds reports. In order for DOE to adequately administer and control its grant program, we believe it is imperative that DOE ascertain the accuracy and reliability of State accounting systems. Financial/compliance audits of each State, required by Federal Management Circular 74-7, are planned to be conducted by the States between April 1978 and January 1979 and could serve as the basis for DOE certification. However, we believe DOE should certify each State's accounting system, as required by DOE guidelines, as soon as possible. If significant deficiencies are noted and not corrected, DOE should consider suspending a grant to a State until an adequate accounting system is established.

Revised budgets not submitted by States

Two States we visited did not submit a revised program budget as required by Federal regulations. Each State must submit in its annual application for program funds a current year budget listing anticipated expenditures by object class category (for example, personnel, travel, equipment, contracts) for all DOE funds. Federal Management Circular 74-7 required that a State submit a revised budget to its respective DOE regional office when the greater of \$10,000 or 5 percent of the budgeted grant amount is transferred between object classes.

In one DOE region, two States significantly deviated from their current year budgets but did not report the changes to their regional office. For example, one State spent \$61,000 for personnel compared to planned expenditures of about \$31,000.

At the time of our review, DOE could only determine that States were complying with the reporting requirement when a revised budget was submitted, since States do not report expenditures by object class. By using revised financial application and expenditure forms (see discussion on p. 26), DOE will be able to routinely compare budgeted amounts with actual expenditures and be in a position to notify in a timely manner those States which need to submit revised budgets.

ENERGY SAVINGS

Reported savings for the base program in calendar year 1977 were 85.75 trillion Btus (equivalent to about 42,000 barrels of oil per day), representing energy savings in 31 States. The remaining States reported no energy savings for the base program. States did not report savings from the supplemental program because it had not been fully implemented.

According to DOE, many program measures in many States were not at the point of accomplishing significant energy savings for calendar year 1977. In addition, DOE pointed out that the reasonableness of quantifying energy savings is a range rather than an absolute, due largely to problems of data availability. Some assumptions have to be made in every case.

Assuming their validity, the savings reported by States for 1977 provide an early indication that the State energy conservation programs will serve to reduce energy demand in the future. Moreover, other activities the States are undertaking which reasonably can not be quantified in terms of energy savings should have a positive effect in reducing energy demand. Examples of such activities include public education campaigns and intergovernmental coordination activities, both of which are required to be implemented under the supplemental program. Thus, the reported energy savings provide a relative measure of the energy conservation impact of the State program but should not be viewed as the program's total effect in reducing the energy consumption growth rate.

According to DOE figures at the end of fiscal year 1977, if all goals are reached in 1980, a total of 5.547 quadrillion Btus of energy will be saved in that year. This represents a savings of about 2.8 million barrels of oil per day. According to DOE, a State regularly revises its 1980 energy savings projection, thus affecting its goals, whenever the State amends its plan or improves its forecasting methodology or data. Therefore, the goal reflects estimated savings at a given point in time. For example, the composite 1980 goal of all participating States increased to 6.1 quadrillion Btus of energy as of mid-May 1978.

Neither the legislation nor the guidelines specify the amount of energy savings that a State must achieve to receive Federal financial assistance for the base or supplemental program. Consistent with EPCA, DOE asked each State to assess the feasibility of achieving a goal of 5 percent reduction in 1980 from projected 1980 State energy consumption.

DOE used this 5-percent figure as a target energy savings goal for each participating State for the base program, although a State can still participate in the base program with a savings goal of less than 5 percent. No specific goal must be projected for each State to participate in the supplemental program.

The 1980 projected energy savings base program goal for each State was finalized by DOE on September 30, 1977, for purposes of allocating fiscal year 1978 base program funds. These goals were based on such factors as budget; availability of resources; energy consumption over which the State has no influence; and economic, demographic, geographic, or other unique conditions peculiar to any one State. Of the 55 participating States, 45 had projected 1980 goals of 5 percent or greater reduction. Of the remaining 10 States, only 3 had expected savings of less than 4 percent. (See app. III for a listing by State of 1980 projected savings in terms of Btus and percentage and actual savings reported by State for calendar year 1977.)

Achieving and reporting energy savings

The total energy savings expected from the State program may not be achieved. In addition, States need more guidance from DOE on how to measure annual energy savings achieved so that the reported energy savings reasonably reflect the progress being made by States in reaching their 1980 energy savings goals.

Reduction of potential savings to be realized

The uncertain availability of non-DOE funds to implement program measures and slippages in meeting planned milestone dates for some program measures can reduce the total energy savings to be realized from the State program. We previously recommended ^{1/} that DOE continuously assess each Federal program in terms of what its contribution will be in meeting the short-, mid-, and long-term objectives of the National Energy Plan (NEP). Therefore, the availability of non-DOE funds and slippages in the program need to be continuously monitored so that a reasonable evaluation can be made of the

^{1/}"The Federal Government Should Establish and Meet Energy Conservation Goals," EMD-78-38, June 30, 1978.

State program's energy savings contribution to the total Federal energy conservation effort.

If non-DOE funds are not provided, States may be projecting more energy savings than will be realized. Although 19 of the 24 States in our review included non-DOE funds in their 1977 to 1980 annual base program implementation costs and 12 States included non-DOE funds in their supplemental plans, the reliability of these figures is known to DOE since States were not required to identify the source, or guarantee the availability, of these funds. The use of non-DOE funds can increase the energy savings to be achieved from the program. We believe DOE should annually determine the extent to which States are committing non-DOE funds to the program in order to better assess the total expected energy savings impact of the State energy conservation program.

Forty States experienced slippage in implementing at least one program measure based on our review of base program evaluation reports covering fiscal year 1977 activities. Slippage in implementing program measures is likely to reduce the amount of potential energy savings to be achieved within a State. Therefore, we believe DOE should continually assess the impact of program measure slippage on the energy savings expected from the program.

Additional guidance needed
to measure energy savings

DOE requires each participating State in the base program to estimate, in Btus, energy savings actually achieved by program measure for each calendar year and supply DOE with documentation supporting its estimates. However, DOE did not provide sufficient guidance to the States on how to make such energy savings estimates. As a result, States experienced problems in determining actual energy savings achieved for 1977. In addition, because States were required to report energy savings achieved for 1977 before the end of calendar year 1977, the reported energy savings figures included some projected energy savings.

Some State energy officials said they did not know how they would estimate energy savings. Some stated that it is difficult to determine that energy savings are the result of specific program measures. Some States requested contractors to compute actual savings. Although the States were experiencing difficulty in measuring energy savings achieved, DOE did not provide sufficient guidance to the States concerning this matter.

Following the submission of calendar year 1977 savings figures by the States, DOE prepared and distributed to States a detailed set of methodologies and related guidance material on estimating actual energy savings to help States estimate their 1978 energy savings. Followup assistance is available to States that request it. Our future audit work will involve a review of these and other actions taken by DOE since September 1977.

Each State is required to report energy savings achieved for the calendar year to its respective DOE regional office by October 30--2 months before the end of the year. Therefore, the reported energy savings include actual savings achieved and projected savings, yet no differentiation is made of the two estimates. We believe DOE should require the States to report, on an annual basis, only actual energy savings achieved. This would allow DOE to better assess the actual results of the program. Since DOE now requires States to report savings information by October 30 of each year, an appropriate time frame for reporting actual energy savings achieved could be the Federal fiscal year.

PROGRAM EVALUATION

The State energy conservation program has been well received by the States. In addition to energy conservation measures required to be included in the base and supplemental plans, States included optional energy conservation measures, such as recycling used oil, solid waste recovery, truck weight limit liberalization, and improvements in boiler efficiency. The inclusion of optional measures in the State plans indicates the States' commitment to achieving a greater level of energy conservation than has been experienced in the past.

We believe that the level of participation by States and the extent to which additional energy conservation activities have been included in State plans are favorable aspects of the State energy conservation program. They have the potential of forming a basis for future Federal/State relationships and coordination in dealing with all energy problems and setting the groundwork for developing a strong national energy conservation ethic; both are necessary ingredients to a viable national energy program.

While the State program, overall, should result in additional energy conservation, our review identified certain problems in program implementation which should be addressed by DOE in its administration of the program. We found that both

the base and supplemental State energy conservation programs experienced delays in their development and implementation. In addition, we found that States were not meeting milestones for implementing program measures and DOE had not provided timely and adequate technical assistance to States. These problems may inhibit the achievement of 1980 energy savings goals established for the program.

Program delays

Program implementation was delayed by DOE's failure to issue program guidelines and review and approve plans in a timely manner and by the States' untimely development and submission of energy conservation plans.

EPCA mandated that final base program guidelines for the development, modification, and funding of State plans be issued by June 22, 1976--6 months after passage of the law. DOE issued final guidelines on October 28, 1976--4 months late. EPCA mandated that final supplemental guidelines be issued by February 14, 1977, but DOE's final guidelines were not issued until May 13, 1977.

Participating States were required to submit base State plans to DOE regional offices by March 28, 1977, and the regions were required by DOE headquarters to review and approve each State plan within 45 days of submission. Only 21 States submitted their base plan on time; 34 requested and received extensions for submitting plans. Of the 55 State base plans approved by DOE regional offices, only 1 was reviewed and approved within 45 days of submission. Regional officials cited the 45-day period as unrealistic because much time is required for States to correct deficiencies identified by DOE. All base State plans were approved by September 30, 1977, the last day allowed for appropriating funds. No State base plans were disapproved.

The supplemental State plans were due to DOE regional offices by July 25, 1977, and 27 were received by that date. Extensions were granted to 28 States for submitting supplemental plans. All supplemental plans were received by September 3, 1977. As of September 30, 1977, 22 supplemental State plans had been approved, but only 2 had been reviewed and approved within the required 45-day time frame.

Slippage in program measure milestones

Some States have not been able to meet established milestones for implementing program measures. There is disagreement, however, concerning the effect such slippage will have

on achieving the 1980 energy savings goals established. Our review of DOE regional base program quarterly evaluation reports indicated that 40 States had experienced some slippage in achieving milestones for at least one measure. Causes for the slippage were at both the State and DOE level. Information on the other 15 States was not included because reports from States to DOE regions had not been submitted or had not been prepared in sufficient detail.

Of the 40 States reporting some delays in implementing program measures

- 23 did not indicate whether the delays would affect 1980 energy savings goals;
- 12 indicated that delays would not affect 1980 energy savings goals;
- 5 indicated that most of the delays would not affect 1980 energy savings goals; however, delays in certain program measures would need to be further assessed before determining their impact on 1980 energy savings goals.

One DOE region noted that although three of the States in its region did not anticipate the slippage in program milestones to affect projected 1980 energy savings, it did expect a reduction in expected savings.

The first set of program evaluation reports concerning the status of the supplemental program was due on January 30, 1978, for the period beginning with plan approval through December 31, 1977. An evaluation of these reports will be included in our review of fiscal year 1978 activities.

In our opinion, delays in implementing the energy conservation measures included in the State programs may inhibit the achievement of the 1980 energy savings goals. Therefore, we believe DOE should annually assess the State energy conservation program's status and revise the established energy savings goals if appropriate. This would also allow DOE to better plan its longer range energy program.

A description and discussion of the implementation status, where applicable, of those energy conservation measures required to be included in the base and supplemental energy conservation programs follow. The status of the supplemental program required measures are not included because all supplemental plans were not approved at the time of our audit work.

Lighting efficiency standards

Although each State must implement, for all new public buildings, a lighting efficiency standard meeting specific stringency requirements and determine the size of new buildings covered by the standard, as of December 7, 1977, only 24 States had necessary enabling legislation to implement a statewide lighting efficiency standard. According to DOE, only seven of these States had lighting standards for new buildings that met DOE requirements. Another 18 States pledged implementation of the lighting efficiency standards for new buildings by January 1, 1978. Other States have pledged implementation between January 1, 1978, and July 1979. The implementation dates could be further delayed if the State legislatures fail to approve proposed legislation.

The size of new public buildings to be covered by the lighting efficiency standards varies. For example, of 13 State plans we looked at, 7 States anticipated including all public buildings, whereas 4 States included only buildings above a certain size (for example, buildings with at least 7,000 or 10,000 square feet of space). Two States were still developing legislation to address the lighting standards.

States must also implement lighting efficiency standards for existing public buildings and determine the strictness and applicability of the standards. The standards vary by State as does the number of existing buildings covered by lighting standards. Seven State plans we looked at anticipated a size restriction for existing buildings. Three of these States had not yet determined the exact size of buildings to be covered by the lighting standard, whereas four States were including coverage of buildings similar to the size limitations on new buildings. Of six other plans we reviewed, two States indicated that all public buildings, regardless of size, will be covered by the standard and four States had yet to determine if there would be a size limitation on existing buildings.

Thermal efficiency standards

Although each State must implement an acceptable thermal efficiency standard for new residential and nonresidential buildings, only 24 States had necessary enabling legislation and only 7 States, as of November 1977, had thermal standards for new buildings that met DOE requirements. Another 20 States pledged implementation by January 1, 1978. Other States have pledged implementation between January 1978 and

July 1979. The implementation date may be delayed if State legislatures do not approve proposed legislation.

Thermal efficiency standards for renovated buildings must also be implemented, although each State must determine the strictness and applicability of the standard.

Some States have raised a significant question concerning these thermal efficiency standards for new buildings and their relationship to the energy conservation performance standards for new residential buildings required to be developed by DOE under title III of ECPA. States are concerned that the standard required under title III will not be comparable or compatible with the one required under the base program. Since both the administration of the base program requirement and the title III requirement to develop and promulgate the energy conservation standards for new buildings are the responsibility of DOE, we believe that extensive coordination should continue to be exercised within DOE in carrying out both programs so that States are provided guidance under the State program consistent with the direction being taken in developing the title III standards.

Right turn on red

States are required to include in their motor vehicle code a traffic law or regulation which permits the operator of a motor vehicle to make a right turn at a red light after stopping unless specifically prohibited by a traffic sign. This measure must apply to all political subdivisions of the State.

This right-turn-on-red measure was operational in 31 States prior to passage of EPCA and therefore was not required to be included in their base program plans. Of the remaining 24 States, American Samoa was granted a waiver to this required measure since no stop light intersections existed there and 17 States pledged implementation by January 1, 1978. The other six States have requested extensions or are conducting further study on the safety requirements associated with this requirement.

Procurement standards

Each State must establish mandatory procurement standards and policies to improve energy efficiency in the State and its political subdivisions. Such standards could include provisions on purchasing the most energy-efficient item over its lifetime instead of purchasing the least expensive item. Of 10 State plans we reviewed at DOE regional offices, only 1

State anticipated not having the procurement standard ready for implementation by January 1, 1978.

Vanpool, carpool, public transportation

Each State is required to promote the availability and use of vanpools, carpools, and public transportation by implementing a program in one urbanized area of 50,000 or more population or in the largest urbanized area in the State. States can choose from among 12 program actions, such as park-and-ride lots; a carpool/vanpool matching and promotion campaign; and parking taxes, parking fee regulations, or surcharge on parking costs. According to DOE, only one State needed an official extension for implementing this requirement by January 1, 1978.

Public education

Each State must include in its plan procedures for carrying out a continuing public education effort to increase significantly public awareness of the energy and cost savings resulting from implementation of energy measures. According to the program guidelines, each State must provide a public awareness program regarding energy audits for buildings and industrial plants, including as a minimum a campaign publicizing the availability of energy audits in at least one urbanized area with a population greater than 50,000 or in the largest urbanized area in the State. The campaign must clearly refer to the range of technical assistance available to the owner or occupant of the building or industrial plant and provide a point of contact and telephone number with the organization administering the energy audits. In addition, each State must include in its plan procedures to increase public awareness of information pertaining to planning, financing, installing, and monitoring the effectiveness of measures likely to conserve energy.

Intergovernmental coordination

Each State must include procedures it deems necessary to insure that effective coordination exists among local, State, and Federal energy conservation programs within and affecting the State.

Energy audits

Each State must provide and make available, to the extent feasible, Class A 1/ energy audits in at least one political subdivision for the buildings or industrial plants in at least 1 of 10 DOE-specified categories (such as hospitals, educational institutions, office buildings, and retail stores) and as many Class C 2/ energy audits as is practicable within the State in the remaining 9 categories. The State must also make available Class B 3/ or C audits to all individuals, as requested by such individuals, who are occupants of residential dwelling units in a State at no direct cost to those persons.

The planned type and extent of coverage of the Class A energy audit requirement varies by State. Most States plan to have audits available for only one type of category, mainly educational institutions, industrial plants, and office buildings. However, some States plan to have Class A energy audits

1/A Class A audit shall consist of (1) an onsite visit at the building or industrial plant by an auditor who has qualifications considered appropriate by a State and (2) an evaluation by an auditor of the building or industrial plant's energy consumption and energy systems.

2/A Class C audit shall consist of (1) a workbook provided by a State which will enable the owner, operator, or occupant of the building or industrial plant to identify the energy and cost savings for each of not less than four modifications selected by a State, including factors such as heating and cooling degree days, fuel prices, and other data considered appropriate by a State and (2) pamphlets, books, brochures, or similar data provided by a State to be used in conjunction with the workbook regarding the purchase and installation of the modifications in the type of building or industrial plant for which the workbook is to be used.

3/A Class B audit shall consist of (1) a completed questionnaire, containing information provided by an owner, operator, or occupant of a building or industrial plant, which has been developed and distributed by a State and (2) an evaluation which analyzes the information obtained to identify the energy and cost savings likely to result from not less than two modifications selected by a State, taking into account such factors as heating and cooling degree days, fuel cost, and other data considered appropriate by a State, which evaluation shall be sent to the person who provided the information.

available in more than one category. While most States intend to provide audits in only one political subdivision, at least nine States plan to offer audits statewide.

Technical assistance inadequate

DOE regional offices are responsible for providing technical assistance, if requested, to States subject to the availability of DOE personnel and funds. We found that DOE had not provided appropriate technical assistance in many areas.

Technical assistance includes providing model State laws; proposed regulations; and assistance in developing, implementing, and modifying a State plan. Our review showed that most technical assistance provided by DOE involved the organization, development, and presentation of the State plan. However, States have requested technical assistance in such areas as implementation of required program measures and contractor performance monitoring but have not received a timely response from DOE.

Both States and some DOE regional officials agree DOE needs to better respond to requests for technical assistance. However, DOE regions indicated that a lack of adequate staffing has been a major reason for not providing such assistance. In our opinion, DOE could provide needed technical assistance by requesting and receiving additional staff or reorganizing the resources currently available. This would help to create a positive Federal/State relationship in dealing with energy problems and also help to assure that the State energy conservation program meets its established goals.

MONITORING

As of the end of fiscal year 1977, DOE had not developed an adequate system to monitor States' progress under the program and most States had not yet developed a monitoring system. DOE agrees that monitoring has not been adequate, primarily because the review and approval of State plans has taken priority over other program activities. During fiscal year 1977, DOE relied on two levels of reporting--States reporting to DOE regional offices and DOE regional offices reporting to national DOE--to assess States' progress under the program. However, these reports were not adequate for DOE to monitor overall program progress and compare program budgets with program expenditures and program results. In January 1978, DOE headquarters completed the development

of a proposed monitoring system to be used in at least one State in each region in 1978. As of June 1978, the majority of the States participating in the State program had chosen to use this system in whole or in part.

Lack of adequate
monitoring system

DOE headquarters conducted several workshops with DOE regional representatives on the development and implementation of the program and conducted onsite visits to DOE regional offices to assess program implementation and to provide technical assistance. However, these activities did not provide DOE with sufficient information to adequately assess the progress of the program.

In order to adequately administer, control, and measure the success of the State grant program, DOE should monitor and compare program budgets with program expenditures and program results for both DOE and non-DOE moneys. However, the information DOE required the States to submit during fiscal year 1977 was not in a form to allow DOE to adequately monitor the State program in this regard.

Federal Management Circular 74-7 required States to provide for the comparison of actual expenditures with budget amounts and display the relationship between expenditures and program results. However, DOE did not require States to report program expenditures by program measure.

According to DOE, this situation will be corrected. Beginning in calendar year 1978, DOE has required States to budget by object class category and program measure for DOE and non-DOE funds and to report expenditures by object class category and program measure for DOE and non-DOE funds. Energy savings resulting from the application of DOE and non-DOE funds will again be reported by program measure. The types of reports required by DOE for 1978 should allow DOE to determine the most cost-effective program measures and possibly recommend that all States consider implementing such measures where applicable.

Besides reporting expenditures and drawdowns of funds, the DOE regional offices are required to report quarterly to DOE headquarters on regional management of the program, implementation status by State, the need and/or sufficiency of technical assistance to States, and innovative State energy conservation program measures. The source of some of this information is the quarterly program evaluation report submitted by each State. We reviewed all 10 regional reports

and found, as discussed in the previous section, slippage in meeting program milestones by States and insufficient and inadequate technical assistance provided to States by DOE.

As mentioned in the previous section, the amount, value, and comparability of information contained in these reports varied by region, partially due to the varied information provided by State. Thus, DOE could not effectively monitor the program.

We believe a good monitoring system insures that program progress is reported in a consistent manner, possibly through the use of a standardized form which would also include narrative comments on any irregularities. Information on the effect of program measure progress on the projected 1980 energy savings goal should also be addressed in the report.

Program monitoring should also include onsite visits to assess the States' progress. DOE has not required its regions to conduct onsite visits to States, however; site visits have been made but mainly to assist States in developing their plans. DOE regions planned to expand the visits to monitor program implementation during 1978.

States lack their own monitoring systems

We found that some States do not have a system to assess their progress under the program. The lack of such a system prevents States from reporting meaningful information to DOE so that it can adequately assess the State energy conservation program.

Besides the annual financial application, the quarterly financial status report, and the annual energy savings report which were previously discussed, each State is required to submit a quarterly program evaluation report to DOE on progress implementing its plan. The report should include a narrative on the accomplishment, or lack of it, in achieving each significant milestone for each program measure. The first reports, covering program implementation as of September 30, 1977, were submitted after our audit work was completed, and therefore we did not assess their adequacy.

During our visits to States, we found that at least five had not yet implemented any monitoring system, although four were planning to develop such systems. Two States in our review had already established monitoring systems, including such items as onsite visits and financial status.

In order for States to adequately report financial and program progress to DOE, they should implement a State monitoring system. DOE anticipates that a DOE-developed monitoring system, which will measure planned and actual milestone completion dates with planned and actual expenditures by program measure, will be implemented in calendar year 1978 by at least one State in each DOE region and will be required for all States in 1979. According to the most recent data provided by DOE, the majority of States participating in the State energy conservation program have chosen to use this system either in whole or in part. Representatives from DOE regions and States have voiced the opinion that a monitoring system would have been more beneficial if provided before the development and implementation of State plans.

In our opinion, all States should be required to implement either (1) the DOE monitoring system or (2) a State-developed system of equal or better requirements. This would allow DOE to begin receiving better information on the progress being made under the program at a much earlier date. Thus, any problems being experienced by States could be dealt with before the program is too far along.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Participation by 55 of 56 potential States in the base State energy conservation program as of September 30, 1977, and participation of these same 55 States in the supplemental State energy conservation program as of December 31, 1977, as well as the inclusion of numerous optional energy conservation measures in the State programs, demonstrate the States' commitment to achieve a greater level of energy conservation. Such participation can form the basis for future Federal/State relationships and coordination in dealing with all energy problems as well as set the groundwork for developing a strong national conservation ethic which will be necessary to achieve the greatest level of energy conservation possible.

Most efforts by DOE and the States through the end of fiscal year 1977 involved developing and approving the plans. The amount of effort expended by States for actual implementation of the energy conservation measures varied due to the range of State plan approval dates.

The ultimate success of the State energy conservation program will need to be measured not only in terms of the

States' achievement of their energy savings goals but also in terms of the timely and effective implementation of all planned energy conservation measures. DOE will need to make certain changes in its administration of the State energy conservation program in order to be in a position to adequately assess the success of the program and its likely contribution to the overall Federal energy conservation effort.

We believe that the administration and implementation of the State program can improve in the areas of financial controls, measuring and reporting savings, technical assistance, and compliance monitoring.

Recommendations

We recommend that the Secretary of Energy:

- Review with States the Federal requirements concerning the use of Federal funds, focusing on letter of credit procedures and submission of revised program budgets.
- Review and certify State accounting systems. If significant deficiencies are noted and not corrected, DOE should consider suspending grants to a State until an adequate accounting system is established.
- Require States to report on an annual basis only actual energy savings achieved. Since DOE requires States to report savings data by October 30 of each year, an appropriate time frame for calculating actual energy savings achieved could be the Federal fiscal year.
- Continue to coordinate within DOE the development of the energy conservation performance standards for new residential buildings required under title III of ECPA and the thermal efficiency standard for new buildings required to be included in the base State energy conservation program.
- Provide, in an adequate and timely manner, technical assistance needed by States to implement the State energy conservation program. This could be accomplished by requesting and receiving additional staff or reorganizing the resources currently available.
- Take steps to insure that information on program progress and its effect on 1980 energy savings goals is reported in a consistent manner. This could be accomplished through the use of a standardized form. Since

States regularly make adjustments to their 1980 goals, DOE should assure itself that the adjustments adequately consider the effect of program measure slippage and the availability of non-DOE moneys.

- Require all States to implement the DOE-developed State monitoring system or a State-developed monitoring system of equal or better requirements. The monitoring system should contain provisions for conducting onsite visits and discouraging and detecting fraud.

AGENCY COMMENTS

DOE, in commenting on a draft of this report, stated that many of the points made in the report corroborated its observations and many of the situations mentioned in the report have been corrected since the completion of our audit work. In accordance with our legislative requirements, we intend to review and evaluate these situations in our future work on the State program.

DOE raised certain points concerning our overall evaluation of the State energy conservation program. DOE was concerned that

- corrective action it has taken for many situations mentioned in the report had not been noted;
- little was discussed in the report concerning the supplemental State energy conservation program, while heavy emphasis was placed on the base State energy conservation program; and
- the report focused on program administration at the national and regional level rather than presenting a thorough evaluation of the program's effectiveness.

Our legislative requirement calls for an evaluation of DOE activities in carrying out title IV programs for each of 3 fiscal years. As such, this report responds to that requirement for fiscal year 1977 activities. We recognize that changes have occurred in many areas since our audit work for fiscal year 1977 was completed, and we have included updated information provided to us by DOE in pertinent sections of the report. In future evaluations of the State program, we intend to assess those changes which have occurred.

Given the fact that the supplemental State energy conservation program experienced delays in program development and

implementation, our evaluation of that program was necessarily limited. As we point out on page 2, we chose to include the base State energy conservation program in our review because its purpose and administration are similar to the supplemental State program. In our opinion, inclusion of the base program in our evaluation provides the Congress with useful information on the Federal Government's efforts to foster energy conservation through the overall Federal/State energy conservation program effort.

We agree that our evaluation for fiscal year 1977 concentrated on the administration of the State program. This is consistent with our legislative requirement in that effective development and administration of the State conservation program is critical to its ultimate success in achieving the energy conservation and renewable-resource potential available. Given the delays experienced by DOE and the State in developing and implementing the base and supplemental State programs, it is appropriate that our evaluation for fiscal year 1977 focused more on program administration.

In addition to the above general comments, DOE disagreed with our recommendation on reporting only estimated actual energy savings. DOE stated that (1) EPCA requires DOE to report to the President and the Congress on annual energy savings by December 22 and (2) even waiting until the end of the calendar year for States to report savings will not avoid the necessity for them to make estimates.

While DOE is required by EPCA to report annually to the President and the Congress on the operation of the State program and include an estimate of the energy conservation achieved, EPCA does not require DOE to issue its annual report on each succeeding December 22. It only requires DOE to report once a year and does not specify the date.

We agree with DOE that energy savings need to be estimated regardless of the date on which savings are reported. However, when measuring program results (energy savings achieved), it is more reasonable to determine the savings that have already accrued than to project the savings which may accrue in the next few months. Since DOE currently requires States to report actual and projected savings by October 30 of each year, an appropriate time frame for measuring program results in terms of energy savings could be the Federal fiscal year.

CHAPTER 3

WEATHERIZATION ASSISTANCE FOR LOW-INCOME PERSONS

The weatherization assistance for low-income persons program can, if properly administered, benefit a high number of low-income persons and help conserve a substantial amount of energy. The DOE program is similar in purpose and operation to the weatherization program administered by the Community Services Administration as part of its emergency energy conservation program. We believe these two weatherization programs should be combined and administered by DOE. In addition, we believe improvements are needed in the DOE program in the areas of determining the expected energy savings, developing a method for selecting units to be weatherized, providing sufficient labor, establishing a monitoring system, and including renter-occupied dwelling units.

The purpose of DOE's weatherization assistance for low-income persons program is to achieve a prescribed level of insulation in the dwellings of low-income persons, particularly elderly and handicapped low-income persons, to attain the maximum practicable energy conservation in their homes and to aid those persons least able to afford higher utility or fuel costs. The program is to be carried out by granting funds to the District of Columbia and all States except Hawaii, which in turn redistribute these funds to, among others, local governments, Native American tribes, and community action agencies 1/ for program implementation.

ECPA places special emphasis on the benefits that are to accrue to Native Americans. If a DOE regional office determines that low-income Native Americans are not receiving benefits equivalent to the assistance provided to other low-income persons in a State, DOE may reserve a specified amount of funds to be used exclusively for weatherizing the homes of low-income Native Americans and grant such funds directly to a tribal unit.

PROGRAM ADMINISTRATION

The weatherization program is administered on a decentralized basis through the 10 DOE regional offices. DOE

1/Community action agency--a private corporation or public agency established pursuant to the Economic Opportunity Act of 1964 (Public Law 88-452), which is authorized to administer funds received from Federal, State, local, or private funding entities to assess, design, operate, finance, and oversee antipoverty programs.

headquarters is responsible for establishing program development and implementation regulations, providing technical assistance to DOE regional offices, and reviewing and evaluating information received from the regions to insure effective and uniform program implementation. ECPA requires DOE to fully coordinate with CSA in developing program regulations. The regulations cover such areas as the allocation of funds, State and local applications, administrative and program requirements, allowable expenditures, and standards for weatherization.

The DOE regional offices are responsible for reviewing and approving annual weatherization applications, awarding grants, monitoring and evaluating the operation of the program, and reporting to DOE headquarters regularly.

Each grantee is responsible for developing its own weatherization program, monitoring program implementation by its subgrantees, and reporting regularly to its respective DOE regional office in accordance with program regulations. To receive funding, each grantee must annually submit to its respective DOE regional office an application containing, among other things,

- the name of the organization responsible for administering the program;
- the proposed budget for the program including amount and source of funds;
- the total number of low-income dwelling units to be weatherized, by calendar quarter;
- an estimate of the amount of energy to be conserved;
- the minimum number of dwelling units to be weatherized annually where elderly, handicapped, and Native Americans reside; and
- an estimate of the Federal manpower programs, volunteer labor programs, or other labor sources to be used.

Similarity to CSA weatherization program

The purposes of the CSA and DOE weatherization programs are nearly identical.

Effective January 1975, as part of the Community Services Act of 1974 (Public Law 93-644, dated Jan. 4, 1975), CSA was authorized to develop and implement a weatherization program designed to (1) reduce energy consumption of low-income individuals and families and (2) lessen the impact of the high cost of energy on low-income individuals and families. The CSA program authorizes grants to community action agencies and other community-based organizations. The basic weatherization measures performed under the CSA program are similar to those accepted as weatherization activities under the DOE weatherization program--repairing broken windows; caulking around windows; weatherstripping windows and doors; installing storm windows and/or storm doors; and insulating attics, floors, and/or walls. Both programs also allow for other types of work, such as adjustments and minor repairs to heating and hot water systems.

CSA has granted about \$57.2 million to over 800 organizations through fiscal year 1977. An additional \$146.5 million has been appropriated from fiscal year 1977 supplemental funds and fiscal year 1978 funds.

Our recent report 1/ evaluating the CSA weatherization program identified problems of nonavailability of skilled labor, poor controls of inventory, and inadequate monitoring. Due to the similarity of the two programs, we believe these problems could become potential problems in effectively carrying out the DOE weatherization program. We will discuss the ramifications of some of these problems as they pertain to the DOE program in the following sections.

ACCOUNTING OF FUNDS

ECPA authorized a total of \$200 million for fiscal years 1977-79 to implement DOE's weatherization program. The administration has proposed as part of NEP that funding be increased for fiscal years 1978 and 1979 and additional funds be authorized for fiscal year 1980. Below is a table listing program authorizations, appropriations, and proposed additional authorizations.

1/"Complications in Implementing Home Weatherization Programs for the Poor," HRD-78-149, Aug. 2, 1978.

	Fiscal year			
	1977	1978	1979	1980
	----- (millions) -----			
Authorized	\$55.0	\$65.0	\$80.0	\$
Appropriated	27.5	65.0	(a)	
administrative	.5	.93		
grants	27.0	64.07		
Proposed additional				
authorizations (NEP)		65.0	120.0	200.0

a/Although the amount of the appropriation has not yet been determined by the Congress, DOE has requested \$196,950,000.

By September 30, 1977, DOE had awarded grants of \$6.84 million to 12 States. (App. IV contains a listing by State of grants awarded.) The remaining \$20.16 million of fiscal year 1977 funds was distributed to 38 States and 24 Native American tribal units by December 31, 1977. All weatherization grant funds are distributed by use of a letter of credit as described in the previous chapter.

A grantee may commit funds from sources other than DOE to carry out its weatherization program. Our review of 21 weatherization plans which had not been approved at the time of our review indicated that most States plan to use additional funds, primarily from other non-Federal sources. Since States were inconsistent in the data they submitted in their proposed weatherization plans, we could not determine the amounts of non-DOE funds being committed.

Each grantee is required to submit quarterly a financial status report on (1) the source (DOE and non-DOE) of funds and (2) the use (administrative and weatherization expense) of funds for the prior, present, and future quarters. According to DOE, each grantee has developed or is developing plans on how each subgrantee will report its use of funds to the grantee. This information will be used to prepare the quarterly financial status report to the DOE region. The first report from each grantee was due January 31, 1978, and was to cover the period from the time the grant was awarded to December 31, 1977.

At the time of our audit work, no Federal funds had been received by States. The DOE regions and States indicated that accounting procedures similar to those in use under the State energy conservation program (discussed in ch. 2) would be used to implement the weatherization program. In view of this, we are concerned that

problems of nonconformance with letter of credit procedures and inaccurate State accounting systems could occur in the weatherization program. Thus, DOE should be alerted to these potential problems and take appropriate action to correct them if they occur.

ENERGY SAVINGS

As of September 30, 1977, no States had begun weatherization activities under DOE's program and therefore no energy savings were achieved in fiscal year 1977. The 12 States which had their plans approved and grants awarded, together with those States whose plans were awaiting approval, were preparing to weatherize homes starting in the fall of 1977.

Estimates of energy savings are necessary to evaluate the weatherization program's impact on energy consumption in weatherized dwelling units. Based on our review of early program implementation activities, DOE could not adequately assess, in terms of energy savings, the likely impact of expenditures of fiscal year 1977 funds.

Savings estimates need to be improved

States did not uniformly estimate savings in their initial applications for weatherization funds. Grantees are required to include in their annual applications for DOE grant funds an estimate of the energy savings expected to be achieved in that year from weatherizing low-income homes. In 1977 States were permitted by DOE to report projected energy savings in any form as long as the savings could be justified and seemed reasonable to the reviewing DOE region. Our review of 21 proposed weatherization plans revealed that energy savings projected by the States were presented in terms of Btus (16 States) or as a percentage savings per dwelling unit (3 States). Two States did not include an energy savings estimate in their initial application. By allowing States to report energy savings in terms other than Btus, DOE prevented itself from determining the expected impact of the weatherization program in terms of energy savings.

For those States reporting energy savings in terms of Btus, four States used a DOE-suggested estimate of 15 million Btus per dwelling unit to be weatherized to compute projected energy savings. The 15-million-Btu figure assumed that dwelling units would be weatherized at an average cost of \$210 for materials and that three basic weatherization measures would be completed: caulking and weatherstripping around windows and doors, installing ceiling

insulation, and installing storm windows. Our review indicated that all but 1 of the 21 States anticipated spending in excess of the \$210 average cost.

While the 15-million-Btu figure may have been appropriate for States to use in their initial applications, we believe the experience gained by each State from implementing the program during the first year will provide a better basis for estimating energy savings for future years' weatherization projects. This would also provide DOE with information to better assess the future impact of the weatherization program.

PROGRAM EVALUATION

Overall, the weatherization program should be available to a substantial number of eligible program participants and result in significant energy savings. We found that all States are participating in the program as of December 31, 1977, had applications approved. Some States requested, consistent with ECPA, that Native American tribes in their State submit their own weatherization application and be funded directly by DOE rather than be considered as part of the State grant. DOE had not issued, as of September 30, 1977, any grants to Native American tribes but was negotiating with 24 tribes.

All of the 21 weatherization applications we reviewed indicated that the most frequent weatherizing measures to be used would be: weatherstripping, caulking, and installing storm windows, storm doors, and insulation. Implementing these energy conservation measures will generally provide the greatest amount of energy savings in a dwelling.

Because the program was not fully implemented at the time of our review, we concentrated our evaluation on areas which could have an adverse impact on the program's ultimate success. In particular, we believe the following could limit the program's effectiveness:

- Low-income renters may be indirectly excluded from coverage under the program.
- Unreasonable amounts of Federal funds could be spent on a single dwelling unit.
- A shortage of labor to perform weatherization work may be encountered.
- Program priorities are not clearly established.

Low-income renters may be indirectly excluded from the program

Few low-income renter-occupied dwelling units are planned to be weatherized when compared to the number of eligible low-income persons occupying such dwellings. While neither ECPA nor DOE weatherization regulations require a State to weatherize renter-occupied dwelling units, ECPA states that if leased dwelling units are weatherized, DOE should insure that (1) the benefits of weatherization assistance will accrue primarily to the low-income tenants, (2) the rent on the dwelling unit will not be raised because of any increase in the value of the unit due to the weatherization, and (3) no undue or excessive enhancement will occur to the value of such a dwelling unit. Because of possible difficulty in meeting these requirements, States have chosen to limit the number of renter-occupied dwellings to be weatherized.

Based on the 1970 census data, almost 50 percent of the low-income homes in the United States are renter occupied. Sixteen of the 21 weatherization applications we reviewed anticipated weatherizing some renter-occupied homes, but five States indicated their intentions not to weatherize any renter-occupied dwelling units. Of the 16 States, only 2 planned to weatherize a comparable number of renter-occupied homes, as a percentage, to the 1970 census data for that State. The percentage of renter-occupied dwelling units to be weatherized as indicated in the other 14 State plans was less than the percentage of eligible low-income persons occupying rented dwellings. An official from one of the five States which indicated their intention not to weatherize any renter-occupied dwelling units said it would be difficult to enforce the restriction that rents should not increase due solely to increased property value as a result of weatherization assistance.

We believe that the types of weatherization measures to be performed under the program will not unduly or excessively enhance the value of the renter-occupied dwelling units and thus should not result in increased rents to low-income tenants. Insuring that the benefits of the program accrue to low-income tenants could pose a serious problem, particularly in cases where utility costs are not paid directly by tenants but are included in the rent. In these cases, rent payments theoretically should decrease following

weatherization to the extent that the cost of energy saved exceeds the benefits of a better living environment for the tenants. However, we believe it is highly unlikely that this would occur.

A DOE-sponsored study 1/ indicates that 65 percent of the multifamily renter-occupied dwelling units in the country are individually metered for electricity. In these and other cases where energy sources are individually metered, the benefits of weatherization would accrue directly to the low-income renter.

In our opinion, the current program is indirectly preventing a substantial number of low-income renters from possibly receiving weatherization assistance. We believe DOE should assure that subgrantees evaluate the energy savings potential from weatherizing renter-occupied units. This evaluation by the subgrantees would provide a basis for (1) assessing the energy savings to be achieved from weatherizing these dwellings as compared to weatherizing owner-occupied units and (2) selecting those dwellings to receive assistance under the program.

Unreasonable amount of Federal funds could be spent on a single dwelling unit

The operation of two major Federal weatherization programs could result in an unreasonable amount of Federal funds being spent on a single dwelling unit. Although a maximum amount of funds to be spent on a dwelling unit without special approval has been established for each program, funds up to the maximum from each of the programs could be used to weatherize the same dwelling unit without receiving special approval.

Under the DOE program, up to \$400 can be spent per dwelling unit without special approval; amounts in excess of \$400 for materials must be approved by the grantee Policy Advisory Council. 2/ CSA guidelines authorize

1/"Energy Conservation Implications of Master Metering," Volume II, Midwest Research Institute, Oct. 6, 1975.

2/A grantee Policy Advisory Council consists of a representative group of organizations, agencies, and low-income persons for the respective geographical area and is responsible for advising the grantee in the development, administration, and implementation of the weatherization program.

a maximum of \$250 or \$350, depending on location, to be spent on weatherization materials per dwelling unit. Amounts in excess of this must also be approved by the grantee Policy Advisory Council.

According to DOE, both DOE and CSA funds can be used to weatherize the same dwelling unit as long as separate financial accounts are maintained for each source of Federal funds. In addition, DOE regulations do not prevent the use of DOE funds to install additional weatherization measures in a dwelling previously weatherized with CSA funds. Thus, up to \$750 of Federal funds, including \$400 of DOE funds and \$350 of CSA funds, could be spent on weatherization materials for a single dwelling unit without special approval and still meet the requirements of each program's regulations.

The amount of energy savings resulting from weatherizing a dwelling unit increases at a decreasing amount. In other words, the greatest percentage of energy savings generally results from the initial installation of materials. The establishment of maximum expenditures to be made for a dwelling unit under both DOE's and CSA's program recognizes this relationship and further provides that a greater number of eligible program participants will receive benefits.

We believe that \$400, as set forth by ECPA for the DOE program, should be the initial maximum Federal expenditure on weatherization materials for a single dwelling unit, unless approval is granted by the grantee Policy Advisory Council. Based on the cost of weatherization materials and data gathered from past weatherization efforts, the limit on weatherization materials should be appropriately revised by DOE. Such a requirement should help insure that the greatest amount of energy savings will be realized from the expenditure of Federal funds and also insure that the maximum number of eligible program participants receive benefits under Federal weatherization programs.

Shortage of labor
may be encountered

DOE regulations require that at least 90 percent of grant funds be applied for the purchase of materials and that labor be provided by volunteers and the Department of Labor's Comprehensive Employment and Training Act (CETA) workers to the maximum extent practicable. DOE regulations also specify that 10 percent of each grant can be used for administrative expenses, including salaries to project supervisors and foremen, but not for direct costs including any

other sources of labor. Based on the experience of the CSA weatherization program and comments made by State officials, the effectiveness may be limited because of shortages of adequately trained labor to install weatherization materials.

Our review of State plans indicated that the majority of labor required for the weatherization program will be provided through CETA workers. CETA labor funds are partially distributed to States on the basis of unemployment within each State and provide training for unemployed individuals to aid them in attaining permanent employment. Other sources of labor expected to be utilized are community action agency personnel, occupants of weatherized homes, and volunteers.

In July 1977, the Department of Labor agreed to encourage the States to use their CETA funds to provide labor for DOE weatherization projects. However, several State officials expressed concern about relying on volunteer labor, citing the unsuccessful attempt to use CETA workers for past programs, including the CSA weatherization program. Our review of the CSA weatherization program revealed shortages of available CETA workers for weatherizing homes.

Other problems related to CETA workers were noted in an October 1977 DOE survey of the States and community action agencies implementing the CSA weatherization program. These problems, especially in rural areas, include a shortage of training slots and training funds, poor employee work habits, and high personnel turnover. DOE plans to ask the Department of Labor to make more of a commitment to assure an adequate supply of CETA employees for DOE's weatherization program. In our opinion, DOE should closely monitor the labor situation as the program progresses and be prepared to take any actions needed to assure that problems related to labor do not limit the weatherization program's ultimate success.

Program priorities are not clearly established

DOE program regulations do not adequately define the criteria for selecting homes for weatherization. These regulations stipulate that priority be given to weatherizing the units of low-income elderly and handicapped and, as an applicant determines is appropriate, to weatherizing high energy-consuming dwelling units. While it appears that the low-income elderly and handicapped will receive the greatest share of program benefits from fiscal year 1977 Federal funds, DOE has no assurances that the dwelling units to be weatherized will result in the greatest amount of energy savings per dollar invested.

DOE regional offices have the responsibility to determine if grantees have fulfilled the priority aspects of the program. Our review of 21 unapproved weatherization plans indicated that in all but one State at least 50 percent of the dwelling units to be weatherized during 1978 house elderly and handicapped low-income persons.

We are concerned, however, that there is no assurance that dwelling units to be weatherized will result in the greatest amount of energy savings per dollar invested. Our review of the CSA weatherization program showed that community action agencies generally selected dwelling units to be weatherized on a "first come, first served" basis or in some cases by visits to potential sites and selecting those dwelling units which appeared to be in need of weatherization. Since community action agencies will, to a great extent, administer the DOE program at the local level, the above methods of selecting dwelling units to be weatherized could possibly continue.

In our opinion, DOE needs to take appropriate steps to assure that dwelling units, including renter-occupied units, to be weatherized under the program are selected on the basis of the greatest potential energy savings per dollar spent while at the same time assuring that the target populations (low-income elderly and handicapped) benefit from the program. This would assure that the purposes of the program--achieving the greatest level of energy savings and minimizing the utility costs of those least able to afford such costs--would be achieved.

One way to establish such a priority system would be to encourage the greatest number of eligible program participants, both owner-occupied and renter occupied, to apply for assistance under the program. Preliminary assessments of the potential energy to be saved in each dwelling unit per dollar spent would have to be made before selecting which units are to be weatherized. This would assure that renter occupied dwellings would be considered on an equal basis with owner-occupied dwellings. Then selections could be made from a list of possible participants, considering both potential energy savings and the need to reach the special target populations, until available funds were expended.

MONITORING

As of September 30, 1977, DOE had not established an onsite monitoring system but had a requirement that grantees submit periodic program performance and financial reports. According to DOE, an onsite evaluation system would be

operational in the first quarter of calendar year 1978. Given that the program had not been implemented as of the end of fiscal year 1977, we believe that the steps taken by DOE during fiscal year 1977 were sufficient for the first year's effort.

ECPA requires DOE to monitor and evaluate the operation of weatherization projects through onsite inspections, periodic evaluations, or through any other means DOE deems necessary. DOE's program monitoring will be conducted mainly to

- insure compliance with all program regulations and grant conditions,
- determine the level of performance and progress by grantees, and
- determine major problems and/or critical deterrents.

The following describe the types of monitoring activities DOE plans to undertake.

Program performance and financial reports

Each grantee must maintain records on such items as

- the amount and disposition of funds received,
- the total cost of weatherization projects,
- the source and amount of funds used for weatherization projects, and
- any other records DOE deems necessary for an effective audit and performance evaluation.

Each grantee is required to submit a quarterly program performance report and a quarterly financial status report to the appropriate DOE regional office. These quarterly reports provide DOE with information on

- number of dwellings weatherized by type of occupant,
- type and cost of materials used for weatherization,
- schedule of homes to be weatherized,
- type of fuel used for heating in weatherized dwellings, and
- source and cost of manpower.

The first quarterly reports were due to the DOE regions January 31, 1978, and covered the period from the date the grant was awarded to December 31, 1977. Composite reports will be prepared by the regions and sent to DOE headquarters.

In addition to the required reports, each State is responsible for notifying the appropriate DOE regional office of

- significant problems, delays, or conditions (actual or anticipated) which will adversely affect a State's capability to achieve objectives or maintain scheduled progress;
- steps taken or contemplated to resolve the adverse situations;
- Federal assistance needed to resolve the situations; and
- new program measures in use that present new ways of saving energy.

In order to satisfy the DOE requirements, States were in the process of developing their own monitoring systems, including requirements that subgrantees submit monthly reports to the State, States conduct onsite visits to subgrantees and weatherized dwellings, and States audit subgrantees.

Anticipated onsite monitoring system

A major concern of most DOE headquarters and regional officials is the lack of permanent DOE staff to adequately monitor the weatherizing of homes. DOE headquarters was developing a monitoring system planned for implementation during the first quarter of calendar year 1978. It was anticipated that this evaluation would be performed by staff temporarily (6 to 12 months) assigned to DOE's weatherization program office. Prior to the actual monitoring, the selected monitors would attend a 2-day conference at headquarters during which the program's purpose, regulations, and forms would be explained.

This evaluation of subgrantees and weatherized homes will consist of an inspection of the dwelling unit and installed weatherization materials, calculation of the heating requirements and savings, and evaluation of the information developed. DOE hopes to have four monitors assigned to each DOE region who will be responsible for evaluating the performance of from 47 to 191 subgrantees, depending on the

DOE region. DOE has included in its future budget submission a request for permanent slots at each region to monitor the weatherization program after the first year. We believe this would allow for more uniformity in program monitoring. We also believe DOE should strongly encourage all States to develop an onsite monitoring system of subgrantees. To the extent State monitoring programs are adequate, DOE efforts could be directed to specific problem areas.

CONCLUSIONS AND RECOMMENDATIONS

The weatherization assistance for low-income persons program can, if properly administered, benefit a high number of low-income persons and help conserve a substantial amount of energy. This conservation is especially critical since essentially all forms of energy are used in the heating and cooling of dwelling units. In addition, the energy conserved will continue to accumulate long after the life of the program.

While we favor the continuation and funding of the weatherization assistance program, the conclusions and recommendations discussed below are presented in order to improve the administration, implementation, and evaluation of the program.

Conclusions

Currently, the Federal Government is carrying out two low-income weatherization programs: the DOE program and the CSA program. In a previous report 1/ we noted that the CSA weatherization program responsibility should be transferred to DOE. Prior to the establishment of DOE, we had reported 2/ that it was desirable to have energy functions in one agency having energy responsibility rather than have the functions in an agency or agencies with no basic energy responsibility or have energy functions scattered among several energy agencies. This would insure that energy functions receive proper priority within a single department and compete better for funds through the fund approval process (the Congress and the Office of Management and Budget).

1/"Complications in Implementing Home Weatherization Programs for the Poor," HRD-78-149, Aug. 2, 1978.

2/"Energy Policy Decisionmaking, Organization, and National Energy Goals," EMD-77-31, Mar. 24, 1977.

Effective October 1, 1977, DOE was created as the national agency to handle energy matters. Therefore, we believe the DOE and CSA weatherization programs should be consolidated and administered by DOE in order to centralize control and authority of the energy function and insure that the weatherization of homes receives the proper priority. In addition, this consolidation would result in a less costly Federal low-income weatherization effort by eliminating much of the costs of administering the CSA program. The administration also favors the transfer of CSA's weatherization activities to DOE.

Similar accounting procedures are used for both the State energy conservation program and the DOE weatherization program. We believe that the potential problems discussed in chapter 2 relating to the nonconformance with letter of credit procedures and inaccurate State accounting systems should be monitored by DOE.

Because of different methods of reporting projected energy savings in grantee applications, DOE could not determine the expected impact of the weatherization program. In our opinion, all grantees should report in their annual applications energy savings in terms of Btus in order for DOE to better project and evaluate total energy savings for the program.

While some States are using a DOE-suggested figure of 15 million Btus as an average annual energy savings for each weatherized dwelling unit to project energy savings to be achieved, we believe States should use energy savings information generated from actual experience to project energy savings in future applications. The use of actual experience as a basis for projecting energy savings will provide DOE with a better estimate of the expected impact of the weatherization program.

We found that only a small number of low-income renter-occupied dwelling units are expected to be weatherized with fiscal year 1977 DOE funds. Since low-income persons consist of about an equal number of owners and renters, we believe more effort should be made in the program to include renters, especially those who are directly responsible for paying their own utility and fuel bills.

The amount of funding a dwelling unit can receive for weatherization activities under both the DOE and CSA weatherization programs could total from \$650 to \$750 without receiving approval of a grantee Policy Advisory Board. We believe a maximum limit of \$400 of total Federal funds spent per dwelling unit, without special approval, should

be established as an interim limit in order to weatherize more dwelling units and save more energy.

Both CSA and DOE have indicated a potential problem in providing labor for weatherizing homes. We believe DOE should closely monitor the labor situation and take appropriate actions where needed.

The main purpose of the weatherization program is to attain the maximum practicable energy conservation opportunities in those dwelling units which meet the program requirements. DOE needs to develop a method for selecting those eligible dwelling units where this greatest potential of energy savings exists. Dwelling units to be weatherized should be selected on the basis of the greatest potential energy savings per dollar spent while at the same time assuring that the target populations benefit from the program.

A comprehensive monitoring system is needed in order to insure the effective operation of the weatherization program. This compliance monitoring system needs adequate fiscal controls to insure proper program management and use of Federal funds and to lessen the occurrence of fraud. We are encouraged by DOE actions to develop such a system and favor the monitoring of the weatherization program by permanent DOE regional and State personnel. In determining the number of DOE people to assign to the monitoring function, DOE should consider the number of staff assigned to, and the adequacy of, the State monitoring system.

Recommendations

We recommend that the Congress transfer the responsibility for administering the CSA weatherization program to DOE and combine it with DOE's weatherization program. This is consistent with an administration position favoring the transfer of CSA weatherization activities to DOE.

We recommend that the Secretary of Energy and the Director, Community Services Administration, each establish a maximum interim limit of \$400 of Federal funds that can be used for weatherization materials per dwelling unit and require that any amount in excess of this be approved by the grantees' Policy Advisory Council. The interim limit should be used until DOE has determined a more appropriate level based on such factors as the cost of weatherization materials and data obtained from past weatherization efforts. This \$400 limit for the CSA weatherization program should be established for the period prior to the transfer of the responsibility for this program to DOE.

We recommend that the Secretary of Energy:

- Require that grantees state energy savings in terms of Btu in their annual program applications and instruct grantees to use past program experience as a basis for determining projected energy savings in future weatherization applications.
- Monitor the labor situation under the program closely and if problems arise, take appropriate action.
- Develop and implement a priority system to be used by subgrantees for selecting eligible owner-occupied and renter-occupied units to be weatherized. This system should provide for the greatest energy savings per dwelling unit as well as focus on the low-income elderly and handicapped. Preliminary assessments of the potential energy to be saved in each dwelling unit would have to be made before selecting which units are to be weatherized. Selections could then be made from a list of possible participants, considering both potential energy savings and the need to reach the target population, until available funds are expended. This would assure that the purposes of the program--achieving the greatest level of energy savings and minimizing the utility cost of those least able to afford such cost--would be achieved.
- Develop a comprehensive monitoring system and encourage all States to develop an onsite monitoring system of subgrantees.

AGENCY COMMENTS

CSA, in commenting on a draft of this report, did not believe that the difficulties mentioned in this chapter would be solved by transferring the CSA weatherization program responsibilities to DOE. Our basis for recommending transferral of the CSA weatherization responsibility to DOE was not because one agency was more administratively capable of handling the weatherization program. As already stated, we believe the CSA weatherization program responsibility should be transferred to DOE to allow for the consolidation of energy functions in the one agency having energy responsibility. Transferring the program would result in a more effective and less costly Federal low-income weatherization effort by (1) helping to insure that reasonable and justified amounts of weatherization assistance are provided to low-income persons and (2) eliminating much of the cost of administering the CSA program.

However, CSA did state in its comments that

"* * * should a transfer take place, it is hoped that such a transfer to the major agency with national responsibility for energy related activities would, in the long run, result in greater weatherization activities for the Nation's low-income population."

Regarding the establishment of a limit of Federal funds to be used for weatherization materials per dwelling unit, DOE concurred with our recommendation to limit Federal funds on any one dwelling unit in order to maximize the cost-effectiveness of the program. DOE plans to monitor this aspect during its onsite inspections of local projects. CSA disagreed with our recommended limit of \$400 per dwelling unit, pointing out that it understood that the proposed National Energy Act established a limit of \$800. CSA stated, however, that even this higher figure would, in many instances, not be sufficient to provide for optimum weatherization benefits.

Our understanding of the proposed \$800 limit is that it includes payments for items other than weatherization materials, such as the cost of transporting labor, tools, and materials; the cost of having onsite supervisory personnel; and a portion of the costs of tools and equipment used to install weatherization material. The existing DOE program limit of \$400 covers only the cost of materials. In addition, as we point out on page 40, our proposed limit of \$400 (1) could be exceeded if approved by the grantee's Policy Advisory Council and (2) is intended as an interim limit to be used until DOE has determined a more appropriate level. This determination should be based on such factors as the cost of weatherization materials and data obtained from past weatherization efforts. The \$400 limit we recommend is consistent with the ECPA requirement on the amount of funds allowed per dwelling unit under the DOE program.

DOE expressed concern that we were recommending a quota or priority for weatherizing low-income rental units. DOE pointed out that placing such emphasis on leased dwelling units would hamper the implementation of the program in general and would limit the weatherization of single-family dwellings. We are not recommending that DOE establish a quota or a priority for weatherizing low-income rental units. We are recommending that renter-occupied units receive equal consideration with owner-occupied units when determining which low-income units should be weatherized. This determination will require an evaluation of energy savings per dollar invested.

CHAPTER 4

OBLIGATION GUARANTEES PROGRAM AND THE DEMONSTRATION

FOR EXISTING DWELLING UNITS PROGRAM

Although DOE has the authority, as of June 30, 1978, it had not yet implemented the energy conservation and renewable-resource obligation guarantees program or the energy conservation and renewable-resource demonstration program for existing dwelling units. These programs represent two of the few legislated programs offering financial incentives to encourage the use of renewable resources. These programs should be tested under actual market conditions to determine what role they could play in achieving NEP objectives, particularly the increased use of renewable resources.

OBLIGATION GUARANTEES PROGRAM

The energy conservation and renewable-resource obligation guarantees program had not yet been implemented by DOE as of June 30, 1978. DOE is studying the program to determine its need and the approach to be taken. Testing the program will demonstrate DOE's commitment to NEP goals and will provide a more reliable basis for evaluating the role of obligation guarantees in encouraging the installation of renewable-resource measures.

The program is designed to stimulate energy conservation investment in existing buildings and industrial plants by means of financial incentives. ECPA authorizes DOE to guarantee and issue commitments to guarantee the payment of the outstanding principal amount of any loan, note, bond, or other obligation evidencing indebtedness if its purpose is to finance the installation or implementation of any energy conservation measure or renewable-resource energy measure in any building 1/ or industrial plant 2/ that was in existence before August 14, 1976.

Implementation of this program by DOE is discretionary. In September 1977, DOE signed two contracts designed to assist it in making a final determination on implementing the program.

1/Building--any structure which includes provision for a heating or cooling system, or both, or for a hot water system.

2/Industrial plant--any fixed equipment or facility which is used in connection with, or as part of, any process or system for industrial production or output.

Program requirements

According to ECPA, DOE shall only guarantee or issue commitments to guarantee obligations, not including interest, when borrowers can demonstrate that financing is not otherwise available on reasonable terms and conditions. Eligible borrowers include any person, State, 1/ political subdivisions of a State, and owners of residential buildings containing three or more dwelling units. A DOE contractor study includes nonprofit institutions, large and small businesses, and commercial entities as potential borrowers and excludes the utility and transportation sectors; residential buildings with less than three dwelling units; and "nonplant" industries, such as agriculture, minerals, and construction.

In order for a measure to be financed, it must be (1) identified through an energy audit to be an energy conservation or renewable-resource energy measure or (2) included in a list of energy conservation measures or renewable-resource energy measures published by DOE. In addition, DOE must determine there is a reasonable prospect for the obligation to be repaid, for if the borrower defaults on a payment, the holder of the obligation has the right to demand payment of the unpaid principal by DOE. ECPA authorized \$60 million for the payment of defaults for the duration of the program.

The original principal amount guaranteed by DOE may not exceed (1) 90 percent of the cost of the energy conservation measure or the renewable-resource energy measure financed and (2) 25 percent of the fair market value of the building or plant being modified. The term of any guarantee may not exceed 25 years, and the outstanding amount guaranteed at any one time by any one borrower cannot exceed \$5 million. The total outstanding principal amount of obligations which may be guaranteed may not at any one time exceed \$2 billion. No guarantee or commitment to guarantee may be issued after September 30, 1979.

Program progress

Between August 1976 and June 1977, DOE conducted two assessments of the potential market for an obligation guarantees program. The results of the first assessment, which involved a review of existing conservation studies and program-specific considerations, suggested that the

1/Excludes general obligations of a State.

program was workable. The results of the second assessment, consisting of interviews with trade and professional organizations and potential borrowers, were not as optimistic.

Both the House and Senate Appropriations Committees agreed at the time DOE presented its 1978 budget that a decision concerning the program's future should be deferred until after studies of methods to implement the program are completed and reviewed in the context of emerging programs being considered by the Congress in its deliberations on a comprehensive national energy program. In September 1977, DOE undertook further study of the program.

First assessment concludes
savings of 960 trillion Btus

According to the first assessment, a strong program marketing effort, assuming a 30-percent participation rate by industry and a 5-percent and 25-percent participation rate in the commercial and institutional building sectors, respectively, could stimulate \$5.5 billion in investments (over \$3 billion from the building sector and over \$2 billion from the industry sector) with annual energy saving potential of 960 trillion Btus (equivalent to 480,000 barrels of oil per day). The assessment also indicated that a wide range of lending institutions could be expected to participate in the program.

According to the assessment, the obligation guarantees program could be expected to stimulate energy conservation and renewable-resource energy investments by (1) reducing lenders' risk aversion and thereby making more capital available, especially to marginal borrowers, and (2) reducing the cost of capital to firms with relatively poor credit ratings and thereby making energy conservation investments more attractive to them. The assessment concluded that industries most likely to use Federal obligation guarantees would be small commercial and manufacturing firms which are generally the least likely to have implemented adequate energy conservation measures.

The first assessment also suggested that relatively passive implementation of the program could stimulate about \$500 million of investments in energy conservation and renewable-resource measures with an annual energy savings potential of 70 trillion Btus (equivalent to 35,000 barrels of oil per day). The savings were based on a 5-percent participation rate by industry and a 5- and 25-percent participation rate in the commercial and institutional buildings sectors, respectively.

Second assessment concludes
program will not generate new
conservation interest

The second assessment produced different results, concluding that the potential energy savings resulting from the program, based on 2-percent and 5-percent overall participation rates, would range from 20 trillion to 52 trillion Btus annually (the equivalent of 10,000 to 26,000 barrels of oil per day). The overall program obligations in these two cases would amount to \$90 million and \$220 million. The assessment concluded that the obligation guarantee would enable the potential user to obtain financing, but it questioned whether the availability of a loan guarantee would stimulate new interest in making energy conservation or renewable-resource investments. The study pointed out that the present cost of energy and the generally low portion of total operating expenditures that energy costs comprise provide little incentive to expand capital to reduce that relatively small energy cost.

This assessment found that the public sector and tax-exempt, nonprofit institutions will not use the guarantees due to the availability of tax-exempt bonds for obtaining funds. In addition, small capital-constrained organizations which may have the greatest need for a Federal guarantee would have the most difficulty meeting the first costs (feasibility study, energy audit, etc.) necessary to participate in the program. Large industries would be the least likely to seek or require a Federal guarantee.

The assessment identified the following constraints to program participation.

- Small and large organizations are reluctant to debt finance a capital-intensive energy conservation or renewable-resource measure which is a discretionary investment. There are higher priority demands for capital.
- There is a stigma associated with participating in a "guarantor of last resort" program.
- Energy consumers are skeptical of energy conservation and renewable-resource equipment manufacturers' performance claims. Few manufacturers are willing to guarantee the performance of their products.
- Industries show a very high interest in fuel conversion projects (switching from natural

gas to both oil and coal energy sources) which may not qualify as an energy conservation measure.

- Program advantages are offset by paperwork and reporting requirements, high "first costs," numerous project inspections, application processing delays, and collateral or security requirements.

Further study undertaken

Based on the results of the first two assessments of the program and statements made by the House and Senate Appropriations Committees, DOE let two contracts in September 1977 for further study of the obligation guarantees program.

One DOE contract was for a market penetration study to

- estimate the program's benefits and cost with and without modifications and its interaction with the initiatives included in NEP,
- make recommendations for an effective program design, and
- develop benefit-cost data to back up suggested legislative or administrative changes.

Initial results from this contract are expected late in October 1978.

The second study, to develop a conceptual design for a data management monitoring system which can be used if a decision is made to implement the obligation guarantees program, was completed in April 1978.

DOE is awaiting the results of the first contract before determining the future of the obligation guarantees program. If a decision is made to implement the program, DOE would have less than 1 year to develop and issue program guidelines and guarantee obligations under the existing legislation, which provides that DOE may only guarantee obligations through September 30, 1979.

Accounting of funds, energy savings, program evaluation, and program monitoring

Since the obligation guarantees program is not operational, we have not evaluated its effectiveness. No Federal funds have been loaned or guaranteed, and no energy savings have resulted from the program. As previously mentioned, the conceptual design for a monitoring system has been developed under contract.

Conclusions

In a previous report ^{1/} we addressed the applicability of obligation guarantees as a financial incentive to encourage greater use of energy conservation and renewable-resource measures. In that report we stated that loan guarantees are most effective in making investment decisions in which fixed costs are a major component of total costs and investor choice is sensitive to relatively small variations in the cost of capital. We also pointed out that loan guarantees may be ineffective if firms are unwilling to undertake the desired activity if a higher rate of return on capital is available elsewhere.

In general, loan guarantees would seem to best fit those circumstances where a technology has been known to work, is economical, and where the person wanting to make an investment in the economically attractive energy technology cannot do so primarily because of financial constraints. Conversely, loan guarantees need to be carefully examined and other options considered where there are questions regarding the viability of the technology or the economic competitiveness of the product.

Loan guarantees also may not be appropriate for target groups consisting of large firms with reasonable access to capital markets even if the energy activity in question is technically and economically feasible. Investment capital is normally available to such firms and their basic decision not to invest in a particular energy activity may be influenced primarily by the availability of attractive investment opportunities elsewhere.

^{1/}"An Evaluation of Proposed Federal Assistance for Financing Commercialization of Emerging Energy Technologies," EMD-76-10, Aug. 24, 1976.

The administration's NEP calls for more widespread use of renewable resources. NEP acknowledges that some technologies, such as solar hot water and space heating, can make contributions now. Other technologies have great promise for the future. According to NEP, the Federal Government should aggressively promote development of nonconventional resources despite the fact that they face many uncertainties.

In a previous report, 1/ we stated that

"* * * because of their large initial capital costs, solar energy systems will require significant capital outlays by the potential buyer even with the administration's proposed tax credits and other incentives. This means that low-income families and some organizations may still need additional capital to purchase solar energy systems. Thus, if the administration's goals, as set forth in NEP, are to be met, additional assistance in the form of grants or low interest, long-term loans may be necessary. In addition, the Congress may wish to consider making the existing discretionary obligation guarantees program a mandated program."

The discretionary obligation guarantees program is one of the few federally legislated programs encouraging the application of renewable-resource energy measures, and although it is not a panacea for achieving the administration's objective of widespread use of renewable resources, it could be a major step in reaching the NEP goal.

Although DOE anticipates making a decision regarding the implementation of the obligation guarantees program following the results of its contractor study, it is doubtful that such a study will provide definitive data on whether the industry and building sectors will participate in the program. We believe a more appropriate method to obtain such information is by testing the program and observing the level of participation.

We believe DOE should test the obligation guarantees program with particular emphasis on encouraging the

1/"An Evaluation of the National Energy Plan," EMD-77-48, July 25, 1977.

installation of renewable-resource measures, since these measures are likely to require a greater amount of initial capital outlay than would energy conservation measures. Such a test, which will better determine if there is a market for the program, will be a small price to pay to evaluate the program's contribution in meeting the goals of NEP. DOE should determine the appropriate funding level to test this program.

DEMONSTRATION FOR EXISTING DWELLING UNITS PROGRAM

The energy conservation and renewable-resource demonstration program for existing dwelling units is another program which will provide an incentive to encourage the installation of renewable-resource measures. However, it had not yet been implemented as of June 30, 1978. In addition, a final report containing findings and recommendations for the national program has not been submitted.

ECPA authorized the Department of Housing and Urban Development to establish a 2-year national demonstration program to test the feasibility and effectiveness of various forms of financial assistance for encouraging the installation or implementation of energy conservation measures and approved renewable-resource energy measures in existing dwellings. As part of the Department of Energy Organization Act, the Congress transferred responsibility for the development and implementation of the national energy conservation and renewable-resource demonstration program to DOE. At the conclusion of the program, a report is required to be issued to the Congress which is to contain "findings and legislative recommendations" for "a national program or programs designed to reduce significantly the consumption of energy in existing dwelling units."

In carrying out the program, the legislation requires DOE to:

- Provide assistance in a variety of geographic areas to reflect differences in climate, dwelling units, and income levels.
- Evaluate various financial incentives for different income levels of owners and occupants of existing dwelling units.
- Consider and evaluate other financial assistance available for energy conservation and renewable-resource measures.

- Make use of State and local instrumentalities or other public or private entities in coordination with the base State energy conservation program.
- Consider the cost to achieve the objectives on a national scale, the administrative costs, potential delays, factors preventing assistance to certain areas or persons, and steps to prevent fraudulent practices.

Financial assistance can be made available under the demonstration program to both owners of dwelling units and tenants occupying such units. The amount of any grant made for an energy conservation measure cannot exceed the lesser of \$400 or 20 percent of the cost of installing or implementing the measure. The amount of any grant made for a renewable-resource energy measure cannot exceed the lesser of \$2,000 or 25 percent of the cost of installing or implementing such measure.

The total amount authorized for this program is \$200 million which shall remain available until expended.

Program progress

In January 1977, HUD issued a request for proposal to determine the feasibility of implementing the program at each of three prospective funding levels: \$10 million, \$50 million, and the full \$200 million authorized. HUD anticipated completion of the contract by July 1977, at which time it would be in a position to determine the best way to administer the program, develop a program plan, and begin implementation. The cost of the contract, approximately \$150,000, was to be provided from a general contractor research study fund. According to HUD, because of the possibility of the demonstration program being transferred from HUD to the proposed DOE and because of a request from the White House to delay action subject to the development of NEP, HUD officials canceled the procurement action. DOE assumed responsibility for the program on October 1, 1977.

DOE has taken some steps to proceed with the demonstration program. According to DOE, it has focused attention on developing programs that are designed to complement programs in the proposed National Energy Act. DOE has developed one demonstration program (financing energy efficiency program) which is scheduled for initial limited implementation in September 1978 and is in the process of developing proposals for additional demonstration programs.

The objective of the financing energy efficiency program, designed for first mortgage lenders, is to encourage

home buyers purchasing existing houses to invest in energy-efficient products, such as ceiling insulation, storm windows, heat pumps, automatic clock thermostats, and other products at the time of purchase by providing an additional line of credit to be extended by the mortgage lender. The additional line of credit is to be included in the first mortgage, thus significantly reducing the financial burden upfront for the home buyer by stretching the repayment of the home retrofit over a much longer period of time. An additional demonstration proposal which is under study would encourage tenants and landlords to install energy-efficient products in rental units through appropriate incentives.

Accounting of funds, energy savings, program evaluation, and program monitoring

Because the program has not been implemented, we did not evaluate its effectiveness. In addition, there were no expenditures of implementation funds, no energy savings resulting from the program, and no monitoring system established. A final report containing findings and legislative recommendations was to be completed by August 1978, as specified in ECPA. However, because of the limited action in the development and implementation of the demonstration program, such a report was not submitted.

Conclusions

A number of programs are ongoing and have been proposed to encourage a greater level of energy conservation. Some of the ongoing energy conservation programs have been discussed in this report. The proposed NEP also includes initiatives in the energy conservation area; for example, an expanded low-income weatherization program and a utility insulation program. However, the national energy conservation and renewable-resource demonstration program is one of the few legislated or proposed programs to encourage the application of renewable-resource energy measures.

As discussed on page 56, NEP calls for more widespread use of renewable resources. However, there seem to be questions concerning the most effective means to encourage their widespread use. DOE should view the demonstration program as an opportunity to test which types of financial incentives encourage greater use of renewable-resource measures and to evaluate how their use would contribute to meeting the NEP goals for renewable resources. Through implementation of the program, more definitive evidence can be obtained as to those financial incentives which do or do not encourage individuals to act.

In light of this, we believe DOE should move forward with the demonstration program and increase the number of financial incentives to be tested. The program should concentrate on the installation of renewable-resource measures more than on energy conservation measures, since the former involve a greater amount of initial capital outlay and, as such, will require a greater level of Federal financial assistance to encourage their widespread use. DOE should determine the appropriate funding level for the program to adequately assess consumer response to the various forms of financial assistance to be evaluated.

RECOMMENDATION

We recommend that the Secretary of Energy test the energy conservation and renewable-resource obligation guarantees program and proceed with the national energy conservation and renewable-resource demonstration for existing dwelling units program. DOE should request funding from the Congress at a level which will result in an adequate evaluation of alternative financial incentives. Particular attention should be given to encouraging the installation and implementation of renewable-resource measures.

SCOPE OF REVIEW

<u>DOE regional offices visited</u>	<u>Weatherization and State plans reviewed</u>	<u>States visited</u>
Atlanta	Alabama Florida Georgia Kentucky Mississippi North Carolina South Carolina Tennessee	Kentucky North Carolina
Denver	Colorado Montana North Dakota South Dakota Utah Wyoming	Colorado North Dakota
Kansas City	Iowa Kansas Missouri Nebraska	Missouri Nebraska
San Francisco	<u>a</u> /American Samoa Arizona California <u>a</u> /Guam Hawaii Nevada	California Hawaii

a/Not eligible for participation in the weatherization program.

STATUS OF STATE
ENERGY CONSERVATION PROGRAM
AS OF SEPTEMBER 30, 1977
(AS REPORTED BY DOE)

<u>State</u>	<u>FY 1976 base funds</u>		<u>FY 1977 base funds</u>		<u>FY 1977 supplemental funds</u>	
	<u>Awarded</u>	<u>Expended</u>	<u>Awarded</u>	<u>Expended</u>	<u>Awarded</u>	<u>Expended</u>
Ala.	\$ 85,157	\$ 73,355	\$ 383,000	\$ 383,000	\$ -	\$ -
Alaska	48,514	44,693	129,000	129,000	-	-
Ariz.	68,784	68,748	265,000	107,652	148,000	-
Ark.	68,538	68,538	264,000	-	-	-
Calif.	286,302	286,000	1,734,000	-	944,000	-
Colo.	73,230	64,930	295,000	106,021	-	-
Conn.	80,726	48,215	346,000	-	-	-
Del.	51,400	27,000	148,000	-	-	-
D.C.	53,394	25,400	161,000	-	-	-
Fla.	134,709	122,000	711,000	100,000	-	-
Ga.	100,785	59,550	482,000	-	-	-
Hawaii	54,403	54,403	168,000	73,670	91,000	-
Idaho	53,675	53,675	163,000	-	89,000	-
Ill.	176,446	176,446	992,000	200,000	519,000	519,000
Ind.	107,002	107,002	523,000	-	274,000	274,000
Iowa	78,708	78,708	332,000	-	-	-
Kans.	71,376	71,376	283,000	-	-	-
Ky.	83,846	66,059	367,000	183,500	-	-
La.	88,796	74,399	401,000	-	-	-
Maine	56,702	40,000	184,000	-	-	-
Md.	92,386	45,851	425,000	-	-	-
Mass.	112,891	112,891	563,000	433,360	-	-
Mich.	150,733	133,500	819,000	-	431,000	431,000
Minn.	90,356	90,356	411,000	24,644	218,000	218,000
Miss.	71,400	71,400	283,000	-	-	-
Mo.	100,445	100,445	479,000	-	-	-
Mont.	53,100	53,100	159,000	-	86,000	86,000
Nebr.	62,731	62,731	225,000	-	-	-
Nev.	51,071	26,976	146,000	-	80,000	80,000
N.H.	53,922	40,000	165,000	-	-	-
N.J.	130,991	115,598	685,000	-	358,000	357,658
N. Mex.	57,617	13,150	190,000	-	-	-
N.Y.	258,900	230,000	1,549,000	-	802,000	801,000
N.C.	106,498	71,000	520,000	250,000	-	-
N. Dak.	52,150	43,500	153,000	35,000	81,000	81,000
Ohio	170,522	170,522	952,000	-	496,000	496,000
Okla.	75,881	75,881	313,000	43,890	169,000	-
Oreg.	70,743	38,829	279,000	-	-	-
Pa.	184,259	184,259	1,045,000	-	-	-
R.I.	56,057	55,000	179,000	-	-	-
S.C.	76,620	59,000	318,000	-	-	-
S. Dak.	52,678	40,262	157,000	-	-	-
Tenn.	93,043	75,000	429,000	-	-	-
Tex.	182,991	171,322	1,037,000	15,000	-	-
Utah	58,215	58,215	194,000	-	105,000	105,000
Vt.	50,086	50,086	139,000	-	-	-
Va.	101,078	101,078	483,000	250,000	-	-
Wash.	84,867	53,522	374,000	-	-	-
W. Va.	65,687	65,687	244,000	40,000	130,000	-
Wis.	98,239	98,239	464,000	-	245,000	245,000
Wyo.	48,784	48,784	130,000	-	-	-
American Samoa	44,975	12,932	105,000	-	56,000	-
P.R.	79,259	79,259	336,000	-	176,000	-
Virgin Islands	45,612	45,612	109,000	-	58,000	-
Guam	45,816	45,816	110,000	12,623	59,000	56,630
Total	\$4,953,096	\$4,350,300	\$22,500,000	\$2,387,360	\$5,615,000	\$3,750,288

STATE ENERGY CONSERVATION PROGRAM1980 PROJECTED SAVINGS BY STATEAND STATE-REPORTED SAVINGS IN CALENDAR YEAR 1977

<u>State</u>	<u>1980 projected savings</u>		<u>State-reported</u>
	<u>Percentage of</u>	<u>10¹² Btus</u>	<u>savings calendar</u>
	<u>consumption</u>		<u>year 1977</u>
			<u>(10¹² Btus)</u>
Ala.	5.72	99.17	1.28
Alaska	4.05	11.81	-
Ariz.	7.2	59.293	(a)
Ark.	6.79	62.39	.0866
Calif.	8.2	565.029	.3
Colo.	5.35	50.01	-
Conn.	7.0	49.866	1.59
Del.	7.5	17.96	.05
D.C.	8.0	20.24	.53
Fla.	7.2	150.62	-
Ga.	5.4	92.0	-
Hawaii	4.7	11.864	-
Idaho	4.78	18.32	.05
Ill.	7.21	324.74	-
Ind.	7.62	199.93	-
Iowa	7.4	74.92	-
Kans.	8.3	92.859	.14
Ky.	6.26	89.19	-
La.	5.97	219.53	20.25
Maine	5.6	20.642	3.29
Md.	7.1	82.70	4.94
Mass.	8.8	144.915	6.53
Mich.	8.95	294.40	-
Minn.	6.70	91.63	-
Miss.	4.999	47.07	-
Mo.	5.2	80.192	-
Mont.	4.92	18.22	.02
Nebr.	6.7	41.075	-
Nev.	6.6	18.47	1.25
N.H.	7.	18.732	.8
N.J.	6.6	129.35	2.03
N. Mex.	6.27	35.14	.025
N.Y.	6.7	284.91	10.414
N.C.	8.34	144.82	.17
N. Dak.	5.97	9.82	.13
Ohio	5.74	246.48	-
Okla.	6.91	84.72	.028
Oreg.	5.36	51.58	1.16
Pa.	7.1	310.65	-
R.I.	6.1	13.995	4.33

APPENDIX III

APPENDIX III

<u>State</u>	<u>1980 projected savings</u>		<u>State-reported</u>
	<u>Percentage of</u>	<u>10¹² Btus</u>	<u>savings calendar</u>
	<u>consumption</u>		<u>year 1977</u>
			<u>(10¹² Btus)</u>
S.C.	5.11	52.30	.2
S. Dak.	6.14	10.68	.11
Tenn.	7.67	99.30	-
Tex.	5.72	533.97	-
Utah	5.45	30.19	.6
Vt.	6.7	9.767	.11
Va.	7.5	119.60	1.49
Wash.	4.93	80.38	.0108
W. Va.	5.5	50.75	.11
Wis.	9.8	137.77	23.73
Wyo.	4.15	20.22	-
American Samoa	1.9	0.121	-
P.R.	6.36	22.8	-
Virgin Islands	0.76	0.989	-
Guam	1.3	0.929	-
			<u>85.7544</u>

a/As of Jan. 27, 1978, Ariz. had not submitted a report.

STATUS OF WEATHERIZATION PROGRAM GRANTSAS OF SEPTEMBER 30, 1977(AS REPORTED BY DOE)

<u>State</u>	Fiscal year 1977 funds <u>awarded</u>
Ark.	\$ 296,000
D.C.	156,000
Iowa	655,000
Kan.	321,000
Mo.	794,000
Neb.	384,000
N.J.	721,000
N. Mex.	280,000
N.Y.	2,199,000
N. Dak.	327,000
S. Dak.	293,200
W. Va.	<u>418,000</u>
	<u>\$6,844,200</u>



Department of Energy
Washington, D.C. 20545

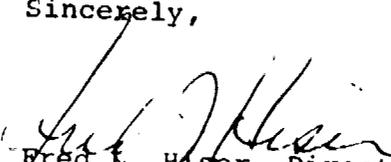
JUN 23 1978

Mr. Monte Canfield, Jr.
Director, Energy and Minerals
Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Canfield:

As requested in your letter of May 18, 1978, enclosed are comments of DOE on the draft report entitled "Evaluation of the Energy Conservation and Production Act (P.L. 94-385)."

Sincerely,


Fred L. Hiser, Director
Division of GAO Liaison

Enclosure:
As stated

Comments on Draft GAO Report
"Evaluation of the Energy Conservation Programs
Authorized by Title IV of the Energy Conservation
and Production Act (P.L. 94-385)"

STATE ENERGY CONSERVATION PROGRAM

I. General

We are pleased to find that many of the points made in this report corroborate our own observations over time. In fact, many of the situations mentioned in this report have been corrected since the time that the investigators completed their review. Unfortunately, this fact also renders the report at points irrelevant at this time, as it has been nine months since the end of the time period over which the program was examined, and a developing program such as this one changes greatly over nine months.

Although the title of this report indicates an evaluation of the supplemental (ECPA) program, the authors explicitly omit an analysis of the status of supplemental program measures "because the supplemental plans were not approved at the time of our audit work" (p.28). The report heavily emphasizes the base (EPCA) program, instead. Most of the findings, conclusions and recommendations pertain to the base program.

This study does not address all the objectives claimed for it (p.2), nor could it be expected to do so given the timing of the information-gathering effort vis a vis the developmental phasing of the program. The objective of "an estimate of the energy savings which have resulted" was certainly not possible for the supplemental program as those program measures were not in place by the end of the investigation period. Even in discussing energy savings for the base program, this report does not make an estimate, but merely reports what the States reported. The objective of "a thorough evaluation of the effectiveness of the programs in achieving the energy conservation or renewable-resource potential available in the sectors and regions affected" is even further beyond the scope of this report. Rather, the report focuses heavily on program administration at the national/regional level. Perhaps the objectives should be rephrased.

[See GAO note 1, p. 75.]

If this report is to be published, an effort should be made to update its findings and conclusions. They are based in many cases on scanty and obsolete information and, if taken out of context, would be misleading and even damaging. Without updating, its usefulness is seriously constrained.

II. Specific

The following comments are addressed to the specific sections of the chapter on the State Energy Conservation Program.

A. Program Administration

[See GAO note 2, p. 75.]

B. Accounting of Funds

[See GAO note 2, p. 75.]

[See GAO note 2, p. 75.]

C. Energy Savings

[See GAO note 2, p. 75.]

[See GAO note 2, p. 75.]

[See GAO note 2, p. 75.]

Page 23 recommends that DOE move its reporting deadline back so that the States can report "actual" energy savings instead of an advance estimate of actual energy savings for a calendar year. We have problems with this recommendation on two counts, the first being that EPCA requires DOE to report to the President and Congress on annual energy savings by December 22 of the same year. The second problem is that even waiting until the end of the calendar year for States to report savings will not avoid the necessity for them to make estimates, because (a) standard sources of annual consumption data are not published for many months, and (b) many of the States' figures will of necessity be estimates based on sampling and indicator data anyway. As it is, we do allow for post-year revisions to the October 30 reports, if subsequent data indicate that the original reports were significantly in error.

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D. Program Evaluation

[See GAO note 2, p. 75.]

[See GAO note 2, p. 75.]

E. Monitoring

- Page 35-39 discusses the lack of adequate monitoring systems at both State and Federal levels. We agree that monitoring has not been adequate, primarily because the review and approval of the State plans has taken priority over other program accomplishments. However, in the past year, DOE has developed the Prototype Grants Management and Planning System which the States may chose to use in program planning and management. A basic objective of the system is to provide pertinent financial and performance information for effective management of SECP. To date, the majority of the States participating in the SECP have chosen to use this system either in whole or in part.

WEATHERIZATION ASSISTANCE FOR LOW-INCOME PERSONSI. Specific

The following comments are addressed to the specific sections of the chapter on Weatherization Assistance for Low-Income Persons:

A. Criteria to Select Weatherization Projects, Page 49:

[See GAO note 2, p. 75.]

B. Low-Income Renters, Pages 52-54:

As is stated, the statute requires that certain conditions be met prior to weatherizing leased dwelling units. Assuring that these conditions are met requires a contract between the subgrantees and the landlord. The subgrantees do not have blanket authority to go into rental property without the landlord's consent. This process is further complicated by not having sufficient staff to locate and negotiate with the number of landlords involved. Requiring a quota or priority for weatherization of renter-occupied dwelling units would place a tremendous burden on subgrantees, particularly those in urban areas. Placing the emphasis that GAO recommends on leased dwelling units would hamper implementation of the program in general. It would also limit the weatherization of single-family (high energy consuming) dwellings.

C. Expenditure of Federal Funds Per Dwelling Unit,
Pages 55-56:

We concur in the goal of limiting the expenditure of Federal funds on any one dwelling unit in order to maximize the cost-effectiveness of the program. This aspect will be carefully monitored in our on-site inspections of local projects. Since grantees of DOE and CSA are now using the same form to report per-dwelling-unit expenditures, the total amount expended on each dwelling unit will be evident.

- GAO notes:
1. Page references refer to our draft report and may not correspond to this final report.
 2. Deleted comments refer to material contained in the draft report which has been revised or which has not been included in the final report.

Community Services Administration

WASHINGTON, D.C. 20506

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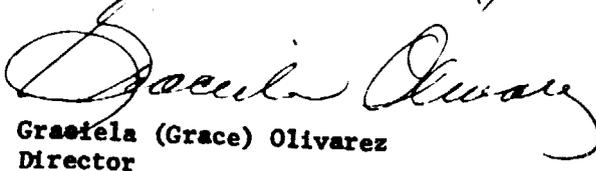
Mr. Gregory J. Ahart
Director
Human Resources Division
United States General Accounting Office
Washington, D. C.

Dear Mr. Ahart:

Thank you for the opportunity to comment on your draft report titled "Evaluation of the Energy Conservation Programs Authorized by Title IV of the Energy Conservation and Production Act," dated May 24, 1978. We are also pleased to see that you favor a continuation of the weatherization assistance program.

Many of the comments we made in response to your draft report titled "Complications in Implementing Home Weatherization Programs for the Poor" dated March 15, 1978 also apply to the issues discussed in the subject report. However, rather than restate those comments here, we have limited our enclosed comments only to the two recommendations directed at our agency.

Sincerely,


Graciela (Grace) Olivarez
Director

Enclosure

RESPONSES TO GAO RECOMMENDATIONS
IN DRAFT REPORT TITLED

"EVALUATION OF THE ENERGY CONSERVATION PROGRAMS AUTHORIZED BY TITLE IV
OF THE ENERGY CONSERVATION AND PRODUCTION ACT"

RECOMMENDATION

THAT CONGRESS FAVORABLY CONSIDER TRANSFERRING THE RESPONSIBILITY FOR
ADMINISTERING THE CSA WEATHERIZATION PROGRAM TO DOE AND COMBINE IT
WITH DOE'S WEATHERIZATION PROGRAM.

Comments

We do not agree that the difficulties mentioned in this report or your prior report on our home weatherization program lead to the conclusion that the weatherization program should be transferred to the Department of Energy. Furthermore, it does not appear that such a transfer would solve the specific problems raised by the reports. However, should a transfer take place, it is hoped that such a transfer to the major agency with national responsibility for energy related activities would, in the long run, result in greater weatherization activities for the nation's low-income population. Our Community Action Agencies would continue to have a significant role in administering the funds provided by DOE and as a result be able to combine such efforts with their normal outreach efforts.

RECOMMENDATION

THAT THE SECRETARY OF ENERGY AND THE DIRECTOR OF THE COMMUNITY SERVICES
ADMINISTRATION EACH ESTABLISH A MAXIMUM LIMIT OF \$400 OF FEDERAL FUNDS
THAT CAN BE USED FOR WEATHERIZATION MATERIALS PER DWELLING UNIT AND
REQUIRE THAT ANY AMOUNT IN EXCESS OF THIS BE APPROVED BY THE GRANTEE'S
POLICY ADVISORY COUNCIL.

Comment

We understand that the proposed National Energy Act establishes a limit of \$800. However, it must be remembered that in many instances even this higher figure is not sufficient to provide for optimum weatherization benefits.

(00317)