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# Annual Report to the President and the Congress on the State Energy Conservation Program for Calendar Year 1984

## August 1985

Submitted in Accordance with
Title III, Part D, Section 365(c)
of the Energy Policy and Conservation
Act, as amended, 42 U.S.C. 6325

Prepared by the
**United States Department of Energy**
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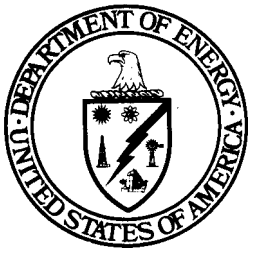

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THE SECRETARY OF ENERGY
WASHINGTON, D.C.

August 5, 1985

MEMORANDUM FOR The President

We are pleased to transmit the Annual Report to the President and the Congress on the State Energy Conservation Program for Calendar Year 1984. This document is required to be prepared and transmitted annually by section 365(c) of the Energy Policy and Conservation Act, as amended.

The report is on the activities from December 1983 through December 1984 of the State Energy Conservation Program, established by Title III, Part D, of the Energy Policy and Conservation Act, 42 U.S.C. sections 6321 - 6327.

Included in this ninth annual report, as required by the Act, are discussions regarding estimates of the energy conservation achieved and the degree of State participation and achievement.

John S. Herrington

Attachment

# EXECUTIVE SUMMARY

The Annual Report to the President and the Congress on the State Energy Conservation Program (SECP) for Calendar Year 1984 is required to be prepared and transmitted annually by section 365 (c) of the Energy Policy and Conservation Act (EPCA), Public Law 94-163, 42 U.S.C. 6325(c). This is the ninth annual report and discusses the activities in the State Energy Conservation Program from December 1983 through December 1984.

For FY 1984, Congress provided funding of $24 million for continuation of the plans under EPCA and financial and technical assistance to develop, modify, and implement State energy conservation plans. All States have developed and are implementing approved plans. Under these plans, States are promoting increased energy efficiency through their authorities in such areas as building codes, utility regulations, tax incentives, bond programs, and transportation programs. They also provide service programs, directly to commercial, industrial, and residential energy consumers, as well as local governments, which result in energy savings. In the plans, the States are able to design energy conservation programs that comply with the legislation and satisfy their own unique conditions and requirements.

As part of this report, DOE is required to address the issue of energy savings. Contained in this report is DOE's review of the States' SECP energy savings estimates and methodologies. These energy savings totals are not intended to reflect total energy savings in the State, but are only those savings the State attributes to the expenditures under SECP.

Program activities in 1984 included a comprehensive study of thermal and lighting energy codes activities to identify all existing building regulations and legislation and their implementing authority. In addition, plans were developed for enhancement of State networking activities. Initial work on a regularly issued State program update prepared by States to exchange various items of mutual interest including program accomplishments, lessons learned, innovative projects, and upcoming meetings, was started following the State SECP Program Managers' conference which was held in September.

Finally, this report shows State specific examples of particularly successful projects of innovative activities, cooperative efforts with the private sector and other examples of accepted energy efficiency or outreach techniques.

# Chapter I
## Introduction

Part C of Title III of the Energy Policy and Conservation Act (EPCA), 42 U.S.C. sections 6321 - 6327 provided financial assistance to develop, modify, and implement State energy conservation plans. Part C was subsequently amended by Part B of Title IV of the Energy Conservation and Production Act (ECPA), which provided financial assistance to develop, modify, and implement supplemental State energy conservation plans. Part C was redesignated Part D by Public Law 95-619, Title IV, section 441(a), November 9, 1978. Together, the EPCA provisions and the ECPA provisions constituted the State Energy Conservation Program ("SECP"). For FY 1984, Congress provided funding of $24 million for continuation of the plans under EPCA. No FY 1984 funds have been provided for plans under ECPA for the third fiscal year in a row. That program is no longer in active operation. However, it should be noted that some States have opted to continue one or more of the ECPA plan measures as optional measures in their EPCA plans.

In order for States to be eligible for financial and technical assistance, the program legislation required the States to develop and implement a plan that scheduled progress toward a specific energy goal for the year 1980. For purposes of this program, a State is defined as any one of the 50 States, the District of Columbia, Puerto Rico, and the territories and possessions of the United States.

The original and overall statutory goal, determined by 1976 projections of the program, and based on statutory requirements, was to achieve a 5 percent, or more, reduction in the projected energy consumption for the 1980 baseline year projections. Since 1980, the goal has been increased yearly in percentage increments to continually enhance the original goal. During 1984, the target energy savings goals for each State was 20 percent over that established for the year 1980.

To be eligible for financial assistance, an SECP base plan must include the following measures:

(1) mandatory lighting efficiency standards for public buildings (except public buildings owned or leased by the United States);

(2) programs to promote the availability and use of carpools, vanpools, and public transportation (except that no Federal funds provided under this part shall be used for subsidizing fares for public transportation);

(3) mandatory standards and policies relating to energy efficiency to govern the procurement practices of a State and its political subdivisions;

(4) mandatory thermal efficiency standards and insulation requirements for new and renovated buildings (except buildings owned or leased by the United States); and

(5) a traffic law or regulation which, to the maximum extent practicable consistent with safety, permits the operator of a motor vehicle to turn such vehicle right at a red stop light after stopping.

All States have developed and are implementing approved plans. Under these plans, States are promoting increased energy efficiency through their authorities in such areas as building codes, utility regulation, tax incentives, bond programs, and transportation programs. They also provide service programs directly to commercial, industrial, and residential energy consumers, as well as local governments, which result in energy savings. In the plans, the States are able to design energy conservation programs that comply with the legislation and satisfy their own unique conditions and requirements.

## Chapter II
## Program Operations and Conclusions

In 1976, DOE awarded planning grants for developing State energy conservation plans. Beginning in 1977 and continuing through 1984, each State has subsequently prepared and submitted to DOE, annual energy conservation plans which have been approved and funded by DOE. This section describes program funding, goals and progress, current status, and energy savings for 1984.

### Funding

Appropriations for operations of the SECP through FY 1984 are as follows (in thousands of dollars):

| Fiscal Year | EPCA Program | ECPA Program |
|---|---|---|
| 1976 | $ 5,000 | $ --- |
| 1977 | 23,000 | 12,000 |
| 1978 | 47,800 | 23,740 |
| 1979 | 47,800 | 10,000 |
| 1980 | 37,800 | 10,000 |
| 1981 | 30,400* | 10,000 |
| 1982 | 24,000 | --- |
| 1983 | 24,000 | --- |
| 1984 | 24,000 | --- |
| Total | $263,800 | $65,740 |

* Excludes $7.4 million of FY 1981 appropriation which was reprogrammed for gasoline rationing.

Table I on pages 9 and 10 details the dollar amounts awarded to each State under the SECP plan in 1984.

### Energy Savings

Due to the wide degree of diversity in State energy agencies and their program operations, the energy savings achieved varies from State to State and from program measure to program measure as each State's technique of implementing its program is applied to its own situation. States have employed various techniques to evaluate and estimate SECP energy savings achieved. These techniques include DOE-provided standard methodologies for calculating energy savings for certain measures as well as their own energy savings methodologies, which are subject to DOE approval.

Each year DOE reviews the States' energy savings estimates and methodologies as received from the States. In an effort to improve the quality of energy savings estimates, DOE has provided individual technical assistance to States in the form of training workshops and special guidance materials, in order to help them improve their energy savings data collection techniques.

Each State plan is directly linked to scheduled progress toward the State energy conservation goal. In 1976, each State estimated, for its proposed energy conservation program measures, the amount of savings it believed it could achieve in 1980. The estimates for each State were totaled and divided by a baseline consumption forecast for 1980 for each State in order to identify the individual State's goal.

The national baseline consumption forecast for calendar year 1980 was 82.1 quadrillion Btu's or "quads." The 5 percent reduction in consumption was a savings goal of 4.1 quads. According to the savings reports submitted by the States for the calendar year 1984, the cumulative total reported savings achieved is 4.71 quads. Of the cumulative reported savings achieved in 1984, 1.27 quads are associated with five required program measures, while the remaining 3.44 quads are attributable to additional or optional program measures. A further breakdown of the savings from the required program measures can be found in Appendix A and for the additional program measures in Appendix B.

The 1984 data show that the cumulative energy savings increased slightly over the previous year. (Refer to Table II on page 11 for data on 1984 energy savings by State and nationwide.)

The SECP energy savings totals are not intended to reflect total energy savings in the State. They are intended only to indicate those savings each State attributes to the expenditures under SECP. Some energy savings may have been realized in response to higher energy prices, increased public awareness, conservation information supplied by sources other than SECP, or other factors. The most recent energy savings evaluation , conducted in 1981, shows savings resulting directly from SECP program measures in excess of 61 trillion Btu's; and over 194 trillion Btu's resulting from efforts relating to SECP activities.

## Program Status

The SECP legislation required the implementation of five energy efficiency measures, previously described on page 1 of this report, and subsequent DOE regulations required the States to take certain actions to meet the legislative mandate. Adoption of these five required measures has been achieved to the extent feasible. However, in the area of thermal and lighting efficiency standards, where total implementation is not completed, extensions for meeting those requirements have been granted to allow States additional time to fulfill the requirements. This is due to the fact that in some States, local governments have the legal responsibility for building codes and this lack of State level jurisdiction has delayed efforts to achieve statewide compliance. During 1984 a comprehensive study of State thermal and lighting energy code activities was started to identify all existing State building codes, regulations, and legislation and their implementing authority in the area of energy efficiency. In addition, any pending or proposed new State activity in the building energy efficiency area would also be listed for reference and possibly be used in assisting States with either implementing new codes or legislation, or upgrading their existing ones. The subsequent results will then be analyzed to develop recommendations to improve State programs on building thermal and lighting initiatives.

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1 Oak Ridge National Laboratories and Price Waterhouse, Study of State Energy Conservation Program 1981 Energy Savings Indicators, April 30, 1982, U.S. Department of Energy.

As part of the 1984 SECP goals and objectives, initial plans were developed for enhancement of State networking activites. Initial work on a regularly issued State program update prepared by the States to exchange various items of mutual interest including program accomplishments, lessons learned, innovative projects, and upcoming meetings, was started following the State SECP Program Managers' conference held in September. This effort will be continuing in the next year. In addition, plans for developing a quick reference resource document describing State SECP programs and projects were started and this document is expected to be completed in the coming year.

Prior to the implementation of the State Energy Conservation Program, most States did not have State Energy Offices or any related central focal point for their various energy programs. The SECP has provided the States with the funding needed to establish, maintain and even expand their capability to plan, design, and implement a wide variety of energy programs. The staffs of the State Energy Offices usually provide support for activities such as the Residential Conservation Service, the Commercial and Apartment Conservation Service Program, and the Institutional Conservation Program for schools and hospitals. In addition, these Offices provide a support mechanism for energy-related emergency planning in the States and the focal point for data collection and analysis of resources and needs. They are able to maintain this capacity largely due to SECP.

In order to continue our efforts to expand State flexibility, DOE in 1984, undertook a review of the validity of using energy savings estimates in the SECP funding formula. In response to criticisms that the energy savings component creates potential funding inequities because it is not verifiable, DOE established an advisory group to analyze the feasibility of validating energy savings attributable to SECP activities. The advisory group, which was made up of representatives from DOE, 5 States, and Oak Ridge National Laboratory, concluded that any credible validation system for SECP energy savings was not economically feasible and would be questionable for a number of technical and institutional reasons.

DOE presented these findings in a Notice of Inquiry (NOI) on September 17, 1984, in the Federal Register (49 FR 36397), and requested comments on how, if at all, the formula might be changed. In addition, this NOI was used to solicit comments and suggestions from States and other interested parties for other program changes to expand State flexibility. While all SECP regulations were open for comments, the one particular issue of special interest that was specifically addressed in the NOI was the review of calculations and validation of energy savings as components in the SECP allocation formula. After reviewing the comments and analyzing a number of different alternative formulae, DOE has decided at this time not to change the historical SECP funding formula. DOE's analysis showed that any benefits of correcting the alleged past inequities associated with the formula would be exceeded by the disruptions of funding changes to most of the States.

## Innovative Approaches

Under SECP, virtually hundreds of projects have been developed and are being carried out in order to achieve the objectives set forth in the State plans. There are far too many projects to cover in this report; however, several particularly successful projects illustrate the type of innovative activities being carried out by the States.

- The Mississippi Department of Energy and Transportation developed a comprehensive Transportation Management Program which is being utilized statewide in public school districts. Working with the State Department of Education and institutions of higher learning, the primary objective is to provide school administrators with organizational and procedural strategies for implementing an effective energy management program. Regional administrator workshops are conducted to emphasize the economic advantages of implementing the services available through the Department which include: (1) Computerized bus routes and schedules, (2) Computerized operational and maintenance cost control reporting/recordkeeping, and (3) Driver training workshops which emphasize improved efficiency and safety through modification and improvement of driving habits. An administrator handbook, driver training manual, and other materials were distributed statewide.

- The Kansas Corporation Commission developed an individual energy consultation program to low income households. The consultations were performed in the individual's home, identified no-cost methods and provided kits that could be used to reduce or limit energy consumption. Consultations are provided by Community Action Agency staff under a contract with the Kansas Corporation Commission and training is done by the Energy Extension Service staff at Kansas State University. In addition, local utilities also participate by providing information on services available to those households.

- The Alabama Energy Division in the Department of Economic and Community Affairs has an active energy education program aimed at making the citizens of Alabama aware of the nature and importance of energy, energy alternatives, and energy conservation. A major effort was to develop energy education software for use in elementary and secondary schools. By blending the skills of energy engineers, computer scientists, and progressive public school teachers, this unified effort helped ensure that the energy facts presented not only informed the students but helped develop better math and science comprehension.

Cooperative Efforts with the Private Sector

In addition to projects funded entirely by Federal funds, the following SECP State programs exemplify cooperative efforts between the State Energy Office and the private sector for the purpose of promoting energy conservation. In some cases, the grant dollars were used as "seed money," with the objective of the private sector eventually assuming the total cost.

- The Maryland Energy Office, in cooperation with the Maryland Auto and Truck Recyclers Association, is implementing an Auto and Truck Recycling Program to make the public aware of the energy conservation and cost savings benefits of using recycled auto and truck parts. This program consists of developing informational materials, audio-visual displays, radio and television advertising, and organizational meetings for various interested groups. Energy savings are realized from extending the life of existing vehicles, eliminating the need to manufacture new parts, and providing recyclable metals for use in manufacturing new metal products.

- The North Carolina Energy Division contracted with private engineering firms to provide detailed engineering analysis to 18 municipal water and wastewater treatment facilities to identify energy conservation potential in operating/maintenance procedures, low-cost improvements and high capital cost modifications. Studies have shown that most municipalities spend 30-35 percent of their energy dollars on utilities, including water/wastewater facilities. Engineering analyses completed on the first twelve (12) facilities indicate a very positive potential for energy savings, in the range of 14 percent to 35 percent of the plant's annual energy bill, depending on the implementation of recommended energy conservation measures. With the completion of these analyses, the Energy Division contracted for the development of case studies utilizing the results of the audits. The final step in this program was the development of a workbook incorporating both a "how-to" audit and the case studies. A series of workshops was conducted using the workbook and was targeted to system operators and plant operating personnel.

- The Minnesota Energy Division joined forces with Honeywell and the St. Paul Public Housing Authority to research indoor air quality in tightly built homes. Utilizing a super-insulated retrofit home with a redesigned ventilation system, real-time monitoring was conducted on the interior circulating air. This project has been heralded as a research breakthrough in the study of indoor air quality in tightly built homes. Because of its international acclaim, conferences have been scheduled in Ottawa and Copenhagen.

- The West Virginia Fuel and Energy Office has structured its energy audit program to provide building owners, industrial managers, and small businesses a tool to assess their structures' energy efficiency. A student internship program has been established with West Virginia University College of Engineering that places in selected industrial establishments students to assist in monitoring energy use and making recommendations on how energy consumption (process and heating) could be reduced. The program currently involves ten to twelve industries and 40 to 45 students.

## Other Accomplishments

The following programs, while not necessarily innovative or directly related to the private sector, represent successful examples of accepted energy efficiency or outreach techniques:

- The New Mexico Energy and Minerals Department has designed a State Building Energy Management Program for State owned facilities. This program is a cooperative effort with the State's General Services Department aimed at the agencies showing the highest energy consumption rate. Activities under this effort include conducting on-site energy audits, compiling energy expenditure reports, training building superintendents, establishing a maintenance schedule for each building selected, operating a retrofit program for existing buildings, and implementing energy efficiency practices in State buildings.

- The State of Kentucky has designed a Local Government Energy Management Program aimed at lessening the burden of energy costs on tight local government budgets. Under this program, a position of energy coordinator was offered to local governments on a competitive basis for a twelve-month period. Following the twelve-month period, each local unit of government must decide whether to continue the position or not. Funds for the position are then expected to be obtained by the local government from cost savings accrued during the initial twelve month period. This would be achieved from the various energy conserving projects recommended by the coordinator and implemented by the local government. By expanding the program to include the private sector, the local government may also provide to local businesses the opportunity to receive assistance from the coordinator in terms of offering advice on energy conservation programs they can use to save money and energy in their businesses. In turn, the local government may receive from the business community financial support for the position's continuation.

- The Florida Energy Efficiency Code for building construction is unique in that it has been tailored to provide cost-effective levels of energy efficiency measures for each of its three climate zones: South which is sub-tropical with 4000 cooling degree days and no permanent heating requirements; Central with 3200 average cooling degree days and only 700 average heating degree days; and North with 2600 cooling degree days and 1300 to 1500 heating degree days. The code is also designed to optimize techniques which minimize solar heat gain in the summer and allow solar gains in the winter. Enforced by city and county building code departments and administered by the State's Department of Community Affairs, compliance with the code is a mandatory condition for obtaining a building permit for new construction and substantial renovations in all of Florida. A goal of 25 percent per capita reduction in energy consumption by 1990 is expected.

## Conclusion

Initial efforts were started in late 1984 to update our strategic plan for the SECP as it exists and outline the logical progression of the program over the next five years. The overall goals call for the States to assume more responsibility for energy efficiency activities, for DOE to stress its information/technical support to the States, and to continue the prudent management and oversight of the grants. The objectives over the coming year will be to continue to develop State self-sufficiency skills, foster State partnerships projects, wheel information between States, conduct training, and strengthen programmatic monitoring.

Table I

Grants Awarded Under SECP 1984

| State | FY 1984 Grants Base Program |
|---|---|
| Alabama | $ 395,100 |
| Alaska | 135,600 |
| American Samoa | 104,900 |
| Arizona | 289,200 |
| Arkansas | 359,800 |
| California | 1,527,600 |
| Colorado | 318,000 |
| Connecticut | 346,800 |
| Delaware | 150,300 |
| District of Columbia | 150,200 |
| Florida | 677,900 |
| Georgia | 483,500 |
| Guam | 109,000 |
| Hawaii | 161,500 |
| Idaho | 167,600 |
| Illinois | 1,024,800 |
| Indiana | 645,500 |
| Iowa | 346,300 |
| Kansas | 358,800 |
| Kentucky | 429,800 |
| Louisiana | 623,600 |
| Maine | 182,000 |
| Maryland | 423,600 |
| Massachusetts | 490,800 |
| Michigan | 802,500 |
| Minnesota | 473,000 |
| Mississippi | 280,600 |
| Missouri | 451,600 |
| Montana | 162,200 |
| Nebraska | 229,600 |
| Nevada | 171,600 |
| New Hampshire | 173,400 |
| New Jersey | 776,000 |
| New Mexico | 205,900 |
| New York | 1,327,000 |
| North Carolina | 512,400 |
| North Dakota | 147,800 |
| N. Mariana Islands | 104,300 |
| Ohio | 990,900 |
| Oklahoma | 365,000 |
| Oregon | 336,500 |
| Pennsylvania | 857,500 |
| Puerto Rico | 262,700 |
| Rhode Island | 186,900 |
| South Carolina | 321,300 |
| South Dakota | 145,700 |
| Tennessee | 471,200 |

| | |
|---|---|
| Texas | 1,525,000 |
| Trust Territories | 108,500 |
| Utah | 210,500 |
| Vermont | 149,000 |
| Virginia | 484,000 |
| Virgin Islands | 121,800 |
| Washington | 338,900 |
| West Virginia | 333,900 |
| Wisconsin | 513,400 |
| Wyoming | 156,800 |
| TOTAL | $ 23,600,000 |

| STATE | REQUIRED | ADDITIONAL | TOTAL |
|---|---|---|---|
| ALABAMA | 2.38 | 130.34 | 132.72 |
| ALASKA | 0.12 | 16.33 | 16.45 |
| ARIZONA | 9.44 | 1.88 | 11.32 |
| ARKANSAS | 10.37 | 7.91 | 18.28 |
| CALIFORNIA | 82.91 | 0.59 | 83.50 |
| COLORADO | 0.45 | 0.43 | 0.88 |
| CONNECTICUT | 42.80 | 54.59 | 97.39 |
| DELAWARE | 4.31 | 20.40 | 24.71 |
| DISTRICT OF COLUMBIA | 9.80 | 37.32 | 47.12 |
| FLORIDA | 118.92 | 66.02 | 184.94 |
| GEORGIA | 30.18 | 136.28 | 166.46 |
| HAWAII | 4.02 | 17.71 | 21.73 |
| IDAHO | 0.35 | 4.26 | 4.61 |
| ILLINOIS | 53.12 | 229.76 | 282.88 |
| INDIANA | 55.01 | 188.74 | 243.75 |
| IOWA | 34.87 | 34.94 | 69.81 |
| KANSAS | 6.77 | 3.08 | 9.85 |
| KENTUCKY | 17.59 | 102.64 | 120.23 |
| LOUISIANA | 0.19 | 11.78 | 11.97 |
| MAINE | 6.06 | 0.17 | 6.23 |
| MARYLAND | 25.85 | 61.23 | 87.08 |
| MASSACHUSETTS | 49.70 | 308.59 | 358.29 |
| MICHIGAN | 48.26 | 18.14 | 66.40 |
| MINNESOTA | 43.68 | 30.82 | 74.50 |
| MISSISSIPPI | 12.21 | 53.40 | 65.61 |
| MISSOURI | 6.59 | 33.86 | 40.45 |
| MONTANA | 6.33 | 9.08 | 15.41 |
| NEBRASKA | 0.44 | 0.10 | 0.54 |
| NEVADA | 3.85 | 0.00 | 3.85 |
| NEW HAMPSHIRE | 1.69 | 33.31 | 35.00 |
| NEW JERSEY | 36.93 | 29.31 | 66.24 |
| NEW MEXICO | 26.64 | 16.75 | 43.39 |
| NEW YORK | 40.17 | 221.56 | 261.73 |
| NORTH CAROLINA | 49.00 | 102.76 | 151.76 |
| NORTH DAKOTA | 0.01 | 4.47 | 4.48 |
| OHIO | 70.67 | 156.04 | 226.71 |
| OKLAHOMA | 16.15 | 128.25 | 144.40 |
| OREGON | 1.94 | 13.22 | 15.16 |
| PENNSYLVANIA | 148.03 | 168.00 | 316.03 |
| RHODE ISLAND | 0.55 | 0.00 | 0.55 |
| SOUTH CAROLINA | 18.97 | 96.23 | 115.20 |
| SOUTH DAKOTA | 0.16 | 3.87 | 4.03 |
| TENNESSEE | 9.65 | 115.31 | 124.96 |
| TEXAS | 58.57 | 592.29 | 650.86 |
| UTAH | 9.90 | 46.32 | 56.22 |
| VERMONT | 13.34 | 16.24 | 29.58 |
| VIRGINIA | 20.81 | 10.62 | 31.43 |
| WASHINGTON | 11.12 | 2.17 | 13.29 |
| WEST VIRGINIA | 7.84 | 18.49 | 26.33 |
| WISCONSIN | 34.62 | 39.02 | 73.64 |
| WYOMING | 2.44 | 2.08 | 4.52 |
| AMERICAN SAMOA | 0.14 | 0.02 | 0.16 |
| GUAM | 0.03 | 0.00 | 0.03 |
| COM NORTHERN MARIANA IS | 0.70 | 0.40 | 1.10 |
| PUERTO RICO | 1.55 | 21.72 | 23.27 |
| TERRITORIES | 0.00 | 0.00 | 0.00 |
| VIRGIN ISLANDS | 1.75 | 24.51 | 26.26 |
| TOTALS (TRILLION BTUS): | 1269.94 | 3443.35 | 4713.29 |



Table II

REPORTED 1984 STATE ENERGY SAVINGS ESTIMATES FOR REQUIRED PROGRAM MEASURES (TRILLION BTUS)

| STATE | THERM | LIGHT | BOTH | TRANS | RTOR | PROCR | TOTAL |
|---|---|---|---|---|---|---|---|
| ALABAMA | 0.00 | 0.00 | 0.86 | 0.00 | 1.43 | 0.09 | 2.38 |
| ALASKA | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.00 | 0.12 |
| ARIZONA | 0.71 | 0.00 | 0.00 | 8.72 | 0.00 | 0.01 | 9.44 |
| ARKANSAS | 0.00 | 0.00 | 6.38 | 3.45 | 0.11 | 0.43 | 10.37 |
| CALIFORNIA | 0.00 | 0.00 | 82.91 | 0.00 | 0.00 | 0.00 | 82.91 |
| COLORADO | 0.00 | 0.00 | 0.44 | 0.00 | 0.00 | 0.01 | 0.45 |
| CONNECTICUT | 0.00 | 0.00 | 32.09 | 8.08 | 0.47 | 2.16 | 42.80 |
| DELAWARE | 2.58 | 0.93 | 0.00 | 0.62 | 0.06 | 0.12 | 4.31 |
| DISTRICT OF COLUMBIA | 0.00 | 0.00 | 5.52 | 2.72 | 0.11 | 1.45 | 9.80 |
| FLORIDA | 0.00 | 0.00 | 109.70 | 9.22 | 0.00 | 0.00 | 118.92 |
| GEORGIA | 0.00 | 0.00 | 30.09 | 0.09 | 0.00 | 0.00 | 30.18 |
| HAWAII | 0.00 | 0.00 | 3.87 | 0.15 | 0.00 | 0.00 | 4.02 |
| IDAHO | 0.00 | 0.00 | 0.21 | 0.00 | 0.08 | 0.06 | 0.35 |
| ILLINOIS | 0.00 | 0.00 | 44.57 | 0.04 | 0.00 | 8.51 | 53.12 |
| INDIANA | 0.00 | 0.00 | 0.00 | 3.34 | 0.00 | 51.67 | 55.01 |
| IOWA | 0.00 | 0.00 | 34.87 | 0.00 | 0.00 | 0.00 | 34.87 |
| KANSAS | 5.00 | 0.57 | 0.00 | 1.20 | 0.00 | 0.00 | 6.77 |
| KENTUCKY | 0.00 | 0.00 | 14.38 | 2.26 | 0.00 | 0.95 | 17.59 |
| LOUISIANA | 0.00 | 0.00 | 0.00 | 0.01 | 0.14 | 0.04 | 0.19 |
| MAINE | 0.00 | 0.00 | 0.00 | 5.99 | 0.07 | 0.00 | 6.06 |
| MARYLAND | 0.00 | 0.00 | 14.68 | 9.55 | 0.64 | 0.98 | 25.85 |
| MASSACHUSETTS | 24.74 | 21.75 | 0.00 | 2.22 | 0.41 | 0.58 | 49.70 |
| MICHIGAN | 8.87 | 0.00 | 26.25 | 5.74 | 1.92 | 5.48 | 48.26 |
| MINNESOTA | 0.00 | 0.00 | 43.54 | 0.00 | 0.14 | 0.00 | 43.68 |
| MISSISSIPPI | 0.00 | 0.00 | 8.56 | 3.49 | 0.16 | 0.00 | 12.21 |
| MISSOURI | 0.00 | 0.00 | 6.43 | 0.00 | 0.00 | 0.16 | 6.59 |
| MONTANA | 0.00 | 0.00 | 6.27 | 0.01 | 0.00 | 0.05 | 6.33 |
| NEBRASKA | 0.00 | 0.00 | 0.44 | 0.00 | 0.00 | 0.00 | 0.44 |
| NEVADA | 3.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.85 |
| NEW HAMPSHIRE | 0.46 | 0.00 | 0.00 | 1.09 | 0.00 | 0.14 | 1.69 |
| NEW JERSEY | 0.00 | 0.02 | 35.34 | 0.24 | 1.10 | 0.23 | 36.93 |
| NEW MEXICO | 0.00 | 0.00 | 25.92 | 0.47 | 0.00 | 0.25 | 26.64 |
| NEW YORK | 28.19 | 11.27 | 0.00 | 0.71 | 0.00 | 0.00 | 40.17 |
| NORTH CAROLINA | 0.00 | 0.00 | 48.01 | 0.61 | 0.00 | 0.38 | 49.00 |
| NORTH DAKOTA | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 |
| OHIO | 0.00 | 0.00 | 70.67 | 0.00 | 0.00 | 0.00 | 70.67 |
| OKLAHOMA | 0.00 | 0.00 | 8.73 | 2.90 | 0.00 | 4.52 | 16.15 |
| OREGON | 0.00 | 0.00 | 0.76 | 1.10 | 0.00 | 0.08 | 1.94 |
| PENNSYLVANIA | 37.41 | 28.11 | 0.00 | 80.12 | 2.20 | 0.19 | 148.03 |
| RHODE ISLAND | 0.00 | 0.00 | 0.55 | 0.00 | 0.00 | 0.00 | 0.55 |
| SOUTH CAROLINA | 6.94 | 2.92 | 0.00 | 8.76 | 0.35 | 0.00 | 18.97 |
| SOUTH DAKOTA | 0.00 | 0.00 | 0.08 | 0.00 | 0.06 | 0.02 | 0.16 |
| TENNESSEE | 6.41 | 0.00 | 0.00 | 2.88 | 0.18 | 0.18 | 9.65 |
| TEXAS | 0.00 | 0.00 | 34.78 | 1.09 | 0.00 | 22.70 | 58.57 |
| UTAH | 0.00 | 0.00 | 9.65 | 0.09 | 0.16 | 0.00 | 9.90 |
| VERMONT | 0.00 | 0.00 | 1.77 | 11.56 | 0.01 | 0.00 | 13.34 |
| VIRGINIA | 17.49 | 0.00 | 0.00 | 1.85 | 1.47 | 0.00 | 20.81 |
| WASHINGTON | 0.00 | 0.00 | 8.58 | 0.15 | 0.00 | 2.39 | 11.12 |
| WEST VIRGINIA | 0.00 | 3.06 | 3.53 | 0.69 | 0.00 | 0.56 | 7.84 |
| WISCONSIN | 17.20 | 0.00 | 7.07 | 1.97 | 0.18 | 8.20 | 34.62 |
| WYOMING | 0.00 | 0.00 | 1.38 | 0.95 | 0.06 | 0.05 | 2.44 |
| AMERICAN SAMOA | 0.01 | 0.01 | 0.00 | 0.10 | 0.00 | 0.02 | 0.14 |
| GUAM | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.03 |
| COM NORTHERN MARIANA IS | 0.30 | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.70 |
| PUERTO RICO | 0.00 | 0.00 | 1.12 | 0.00 | 0.08 | 0.35 | 1.55 |
| TERRITORIES | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| VIRGIN ISLANDS | 0.03 | 0.81 | 0.00 | 0.20 | 0.70 | 0.01 | 1.75 |

| STATE | SECTOR: AGRIC | INDUST | TRANSP | UTILITY | BLDGS | GOVMNT | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|---|
| ALABAMA | 0.00 | 43.39 | 83.95 | 0.00 | 2.85 | 0.15 | 0.00 | 130.34 |
| ALASKA | 0.00 | 0.00 | 0.00 | 0.00 | 8.03 | 1.18 | 0.00 | 16.33 |
| ARIZONA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.88 |
| ARKANSAS | 1.18 | 2.60 | 0.00 | 2.84 | 0.00 | 1.29 | 0.00 | 7.91 |
| CALIFORNIA | 0.00 | 0.00 | 0.00 | 0.00 | 0.59 | 0.00 | 0.00 | 0.59 |
| COLORADO | 0.00 | 0.00 | 0.00 | 0.00 | 0.33 | 0.10 | 0.00 | 0.43 |
| CONNECTICUT | 0.00 | 0.00 | 3.83 | 0.00 | 48.77 | 1.99 | 0.00 | 54.59 |
| DELAWARE | 0.59 | 2.36 | 2.08 | 0.97 | 14.33 | 0.07 | 0.00 | 20.40 |
| DISTRICT OF COLUMBIA | 0.00 | 0.00 | 0.00 | 0.00 | 34.78 | 2.54 | 0.00 | 37.32 |
| FLORIDA | 0.63 | 8.37 | 10.29 | 0.00 | 36.95 | 3.49 | 0.00 | 66.02 |
| GEORGIA | 0.00 | 111.40 | 0.52 | 0.00 | 23.08 | 1.28 | 0.00 | 136.28 |
| HAWAII | 0.00 | 0.00 | 0.00 | 0.00 | 17.71 | 0.00 | 0.00 | 17.71 |
| IDAHO | 3.03 | 0.08 | 0.00 | 0.00 | 0.73 | 0.04 | 0.00 | 4.26 |
| ILLINOIS | 0.00 | 0.00 | 0.00 | 0.00 | 206.80 | 0.00 | 0.00 | 229.76 |
| INDIANA | 0.00 | 0.00 | 0.00 | 0.00 | 59.79 | 0.01 | 0.00 | 188.74 |
| IOWA | 0.52 | 0.00 | 1.51 | 23.23 | 1.32 | 0.23 | 0.00 | 34.94 |
| KANSAS | 0.00 | 0.00 | 0.00 | 0.13 | 2.82 | 0.13 | 0.00 | 3.08 |
| KENTUCKY | 0.10 | 0.00 | 0.93 | 0.13 | 95.76 | 0.23 | 0.00 | 102.64 |
| LOUISIANA | 0.00 | 0.29 | 0.00 | 2.61 | 8.29 | 0.17 | 0.00 | 11.78 |
| MAINE | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.17 |
| MARYLAND | 7.87 | 16.65 | 0.00 | 0.00 | 8.55 | 2.20 | 0.00 | 61.23 |
| MASSACHUSETTS | 0.00 | 4.13 | 0.00 | 111.16 | 90.06 | 102.42 | 0.00 | 308.59 |
| MICHIGAN | 0.00 | 18.14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 18.14 |
| MINNESOTA | 0.00 | 10.87 | 5.38 | 0.00 | 14.04 | 0.00 | 0.00 | 30.82 |
| MISSISSIPPI | 0.00 | 4.33 | 8.86 | 0.00 | 39.08 | 1.13 | 0.00 | 53.40 |
| MISSOURI | 0.00 | 9.57 | 1.60 | 0.00 | 17.15 | 5.46 | 0.00 | 33.86 |
| MONTANA | 0.00 | 0.00 | 0.00 | 0.00 | 3.94 | 0.00 | 0.00 | 9.08 |
| NEBRASKA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.10 |
| NEVADA | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| NEW HAMPSHIRE | 0.00 | 0.09 | 3.02 | 0.40 | 27.39 | 1.27 | 1.14 | 33.31 |
| NEW JERSEY | 0.00 | 3.76 | 0.00 | 0.00 | 12.59 | 9.44 | 3.52 | 29.31 |
| NEW MEXICO | 0.00 | 0.00 | 0.00 | 7.30 | 9.35 | 0.00 | 0.00 | 16.75 |
| NEW YORK | 8.68 | 44.23 | 4.21 | 2.25 | 27.20 | 39.92 | 0.00 | 221.56 |
| NORTH CAROLINA | 5.97 | 46.29 | 0.64 | 0.00 | 39.50 | 0.30 | 0.00 | 102.76 |
| NORTH DAKOTA | 0.00 | 0.00 | 0.00 | 0.00 | 1.08 | 2.31 | 0.00 | 4.47 |
| OHIO | 0.00 | 0.00 | 0.14 | 0.00 | 123.63 | 0.60 | 0.00 | 156.04 |
| OKLAHOMA | 1.81 | 13.05 | 0.00 | 0.00 | 76.14 | 6.58 | 0.00 | 128.25 |
| OREGON | 0.00 | 1.79 | 0.00 | 6.73 | 4.11 | 0.59 | 0.00 | 13.22 |
| PENNSYLVANIA | 0.00 | 119.70 | 0.01 | 17.60 | 18.90 | 0.06 | 0.00 | 168.00 |
| RHODE ISLAND | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SOUTH CAROLINA | 0.00 | 59.50 | 5.70 | 0.00 | 21.92 | 8.64 | 0.00 | 96.23 |
| SOUTH DAKOTA | 0.73 | 0.01 | 0.00 | 0.00 | 0.11 | 2.91 | 0.00 | 3.87 |
| TENNESSEE | 0.00 | 43.18 | 0.00 | 0.00 | 48.23 | 1.38 | 0.00 | 115.31 |
| TEXAS | 0.00 | 508.95 | 0.00 | 0.00 | 83.34 | 0.00 | 0.00 | 592.29 |
| UTAH | 0.22 | 5.32 | 2.89 | 0.00 | 11.73 | 0.00 | 0.00 | 46.32 |
| VERMONT | 0.00 | 2.97 | 0.83 | 0.00 | 12.44 | 0.00 | 0.00 | 16.24 |
| VIRGINIA | 0.00 | 0.00 | 4.26 | 0.00 | 6.36 | 0.00 | 0.00 | 10.62 |
| WASHINGTON | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 2.12 | 0.00 | 2.17 |
| WEST VIRGINIA | 0.00 | 0.00 | 0.00 | 0.00 | 15.35 | 0.66 | 0.00 | 18.49 |
| WISCONSIN | 0.00 | 0.00 | 13.03 | 0.97 | 24.72 | 0.00 | 0.00 | 39.02 |
| WYOMING | 0.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.08 |
| AMERICAN SAMOA | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 | 0.02 |
| GUAM | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| COM NORTHERN MARIANA IS | 0.00 | 0.00 | 0.00 | 0.00 | 0.35 | 0.02 | 0.00 | 0.40 |
| PUERTO RICO | 0.00 | 0.00 | 13.84 | 5.95 | 1.84 | 0.09 | 0.00 | 21.72 |
| TERRITORIES | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| VIRGIN ISLANDS | 0.00 | 24.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 24.51 |
| TOTALS (TRILLION BTUS): | 31.88 | 1105.02 | 167.52 | 182.27 | 1302.08 | 201.01 | 4.66 | 3443.35 |