

Energy Conservation
in
State Government
and
Public School Districts

Report Prepared
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The Division of General Services
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ABSTRACT

This document reports the status of energy conservation for state government agencies and public school districts as reported to the State Energy Office. Data is presented showing energy usage, effective conservation measures, and planned conservation measures. A summary of energy conservation goals and plans for state agencies and public school districts is also included.

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INTRODUCTION

The information contained in this report represents the first compilation of energy conservation reports recently submitted by individual state agencies and public school districts to the State Energy Office. This information provides a basis of comparison for subsequent energy conservation reports to the General Assembly

This report is required by the South Carolina Energy Efficiency Act, Section 48-52-620 (E), which became law July 1, 1992.

SCOPE OF REPORT

This report addresses energy use and conservation by state agencies and public school districts primarily over the last fiscal year (FY1992). Included is information solicited from each agency and school district, energy costs from government accounting reports, and information from special reports showing floor space utilization for state buildings in Columbia.

PURPOSE OF REPORT

This report is the first state energy conservation report from the State Energy Office to the General Assembly under the new legislation. As such it necessarily encompasses more than typically expected from a periodic report.

The primary purpose of this report is twofold:

- (1) To compile factual information, both quantitative and qualitative, on the present state of energy conservation activities and plans for all of state government, and

- (2) To ensure that state government agencies establish comprehensive energy efficiency plans and become models for energy efficiency in South Carolina, and assist the Department of Education in achieving energy efficiency in public schools [Section 48-52-420 (9)].

The preparation of this report assists in accomplishing several other purposes important to energy conservation, namely,

- (3) To ensure that internal governmental energy use patterns are consistent with the State's long-range interests [Section 48-52-210 (B) (9)], and
- (4) To ensure that short-term energy decisions do not conflict with long-range energy needs [Section 48-52-210 (B)(8)].

SPECIFIC OBJECTIVES OF REPORT AND CONSERVATION PLANNING

To better meet the intended purpose of this report, specific objectives are needed. These objectives serve as intermediate milestones and provide a narrower focus of attention in evaluating the information. Accomplishing these objectives will meet the purpose of this report. Specifically, the objectives are

To encourage meaningful, consistent, and methodical collection of energy data on a periodic basis,

To define a collective baseline of energy conservation data for facilities,

To encourage the establishment of effective, practical energy conservation goals,

To assist in establishing optimal standards for energy efficiency and building performance,

To ultimately define goals and offer guidance as energy plans are established.

DATA REQUIREMENTS TO MEET OBJECTIVES

The State Energy Office has considered the requirements of the legislation, the dispersed structure of state government, and the objectives stated above in evaluating which data is necessary and reasonably available for compiling this report. The specific information described below meets these requirements and provides sufficient detail for preparing a useful report.

Energy Usage

It is necessary to gauge the need for energy at each facility. Several factors influence the amount of energy used at each facility. Energy is needed for heating, ventilation, air conditioning, lighting (both interior lighting and outdoor security lighting), hot water, and support equipment. The number and size of buildings at each facility and the hours of operation give an approximate measure of the demand for energy. Other factors that influence energy use are the type of activity, location, seasonal operation, the size of the staff, and the number of citizens served by the facility.

The amount of energy used as well as the cost of the energy were requested for each source of energy, i.e. electricity, natural gas, petroleum fuels, and others. This provides information on the mix of energy sources and the relative costs of each.

Effective Conservation Measures

State government has been interested in conserving energy and controlling energy costs for many years. It is recognized that many agencies and schools have been practicing effective energy conservation. Their efforts have provided them with valuable information of which measures work, which were cost effective, and which were practical for their particular circumstances. Each agency and school district was given the opportunity to share their experiences by describing energy conservation measures that were particularly effective. This information is gathered in the hopes that implementation of these measures could be considered at other facilities with similar situations.

For some agencies and most school districts vehicular fuel purchases represent a sizeable portion of their total energy expenditures. Therefore, a description of existing or planned energy conservation measures specifically related to transportation was requested from each agency and school district.

Energy Conservation Goals

Each state agency and public school district is required to submit an energy conservation plan and energy conservation goals, including energy consumption goals [Section 48-52-620 (A)]. In addition, information on written conservation policies and a recent energy use audit was requested.

Planned Energy Conservation Measures

All agencies and school districts were given the opportunity to provide a description of specific, planned measures to conserve or more efficiently use energy. Important additional information such as cost, payback period, annual energy savings, and the planned implementation date for these measures were requested.

FORM FOR SUBMITTER TO REPORT ENERGY CONSERVATION ACTIVITIES TO THE ENERGY OFFICE

Several important considerations guided the content and layout of the survey form. The foremost consideration was to gather the necessary information in a clear, organized manner. The information requested should be consistently understood and completing the form should not be a formidable task. The form was also designed to guide the formation of the requisite parts of a rudimentary energy conservation plan. More subtly it was realized that the form would communicate the expectations of what would be considered an acceptable energy conservation plan. Finally, the form strongly suggested that a single person be assigned to be attentive to energy matters at each facility; the name of this energy coordinator was requested on the form.

The Energy Conservation Plan and Goals Form, the instructions for completing the form, and the letter of transmittal to the agencies and public school districts are included in Appendix A.

REVIEW OF DATA SUBMITTED

Level of Responsiveness

Information from 105 state agencies and 59 public school districts is included in this report. The responsiveness is quite high considering this is the first statewide request for energy information under the new legislation that was approved only six months ago. The response rate from state agencies is somewhat higher due to additional information that was available for agencies in Columbia. Specific information such as utility costs and amount of floor space for the agencies that occupy government owned buildings was available from additional reports.

The State Energy Office will continue to gather energy conservation plans and goals from the remaining state agencies and public school districts. Although the State Energy Office is not a regulatory body, we will encourage those state agencies and

school districts that were not able to respond, to submit their reports as soon as they are available. This will allow the establishment of a more comprehensive and meaningful baseline of information.

Summary of Responses

There was a wide variety of responses. Depending on the organizational structure of the reporting entity and the availability of the requested information, each response was received as a single survey form or multiple survey forms. The State Energy Office was flexible in allowing each respondent to submit the information in a format that was convenient to the respondent.

Some agencies and school districts sent supporting information with their responses. This information included copies of their energy conservation policies, energy use summaries, and various other information showing their attention to energy conservation.

The numerical responses were totaled and statistically summarized. Due to the different nature of public school districts and state government agencies the two databases were evaluated and reported as separate groups. The numerical results for both groups are given in Appendix B.

METHODS OF COMPILATION

Due to the volume of the information received it was necessary to summarize the responses. Each response contained both numerical and narrative information. The narrative information required different summary techniques than the numerical information.

The numerical information was summarized using descriptive statistics. For each numerical response several statistics were chosen that provide a useful description of the total distribution. The number (n) of responses to the particular information item is listed. Note that this is different than the total number of respondents because some questions were left blank or were not applicable. The minimum and maximum values of the responses are listed. This provides an idea of the range of values for each information item. The mean or average value and the standard deviation (std. dev) give an idea of the concentration of the responses, and used with the median value show the skewness of the distribution. Where it is meaningful, the total summation of responses is also given. The summary statistics for the responses requiring numerical information are given in Appendix B.

Narrative information was requested in Steps 3, 4, and 5 of the survey form. Important information from each step was placed in summary categories. The categories were selected so that similar responses could be grouped together. This provided a more meaningful representation in the context of this report. The discussion of these results follows below.

PRESENTATION OF RESULTS

Totals of energy use

Figure 1 of Appendix C shows a four year trend of energy costs for state agencies. The proportion of energy use by type changes only slightly over the four year time period. Note also that energy costs show only a gradual increase over the period of time.

Figure 2 and Figure 3 of Appendix C show the proportion of energy use for state agencies and public school districts, respectively. It is interesting to note the greater proportion of electricity use as compared to the other fuel types for the school districts.

State Government Agencies

Most Effective Energy Conservation Measures Implemented within the Last Three Years:

12 agencies reported having a formal policy for turning off computers, copiers, and office equipment when not in use.

14 agencies reported having a formal policy for extinguishing lights when not in use. 18 had upgraded to more efficient lighting. 9 installed motion sensors or timers to turn off lights in areas that are not occupied. 3 moved the janitorial staff to daylight hours to conserve lighting after dark.

39 agencies reported improving energy efficiency by upgrading their heating, ventilating, and air conditioning equipment (HVAC). 21 installed energy management systems (EMS) to better match HVAC services to the needs of the facility at different times of the day and week. 8 converted heating equipment to natural gas or liquefied petroleum.

12 agencies improved energy efficiency by adding or upgrading storm windows and doors. 11 upgraded the insulation in their buildings or built new, efficient buildings.

Other agencies implemented various energy conservation measures. Notable improvements included installing reflective roofs, reducing window area, installing tinted glass or window coverings, and adding simple timers to thermostats.

Notable Energy Conservation Measures:

The Department of Education is utilizing waste oil furnaces to supplement heating in the bus maintenance shops around the state. There is no purchase cost for this fuel.

One agency intends to install window screening so that HVAC systems would not need to be operated during mild weather.

Goals and Plans:

Many of the agencies plan to improve energy efficiency by upgrading their facilities. 22 agencies plan to upgrade to more efficient HVAC equipment. 16 agencies plan to upgrade lighting. 12 plan to monitor energy use and refine the operation of the HVAC systems. 6 plan to install energy management systems to control the HVAC systems.

Other agencies plan to improve energy efficiency through organizational efforts. 29 plan to reduce energy costs by emphasizing energy efficiency and increasing the awareness of energy use around their facilities. 11 plan to develop more extensive conservation plans.

Transportation Measures:

Some agencies listed specific measures to improve energy efficiency in transportation. 12 paid stricter attention to combining trips whenever practical. 12 had upgraded their vehicle fleets to more fuel efficient models. 8 specifically reviewed the necessity of travel and altered schedules accordingly. 6 agencies reviewed vehicle routing to conserve fuel. 6 agencies had considered or were using vehicles that use alternative fuels. Most agencies encouraged car pooling.

Energy Audits:

14 agencies reported that an energy audit had been completed within the last 5 years. Several agencies had older energy audits. 9 agencies planned to conduct energy audits or the audits were in progress.

Written Conservation Plan:

11 agencies had a written energy conservation policy. Several agencies were developing a written policy. Other agencies are utilizing the Emergency Energy Plan.

Public School Districts

Most Effective Energy Conservation Measures Implemented within the Last Three Years:

15 school districts reported improved energy conservation by upgrading lighting. 7 school districts have a policy specifically addressing the use of lighting. Some districts have found simple timers to control lighting to be effective.

20 school districts reported improving energy efficiency by upgrading their heating, ventilating, and air conditioning equipment (HVAC). Energy costs were reduced at 9 districts after they converted to natural gas or liquefied petroleum heating. Many districts improved efficiency through attention to maintenance and refinement of HVAC operation. 23 report energy savings from the use of energy management systems for the HVAC system, and 4 reported that simple setback timers were effective. 10 districts used a policy that called for conservative thermostat settings for winter and summer seasons.

17 school districts improved the energy efficiency of the district buildings by building new, energy efficient buildings or by upgrading ceiling, wall, or roof insulation through renovation of existing buildings. 16 districts experienced energy savings by upgrading windows, by reducing window area, or by sealing the windows against air leakage.

4 school districts found that a formal policy for controlling office equipment, computers, portable heaters, and coffee pots was effective in reducing energy costs. Several districts reported that opportunities to conserve energy could be found by closely monitoring energy expenses.

Goals and Plans:

13 school districts have established quantitative goals for energy conservation. The goals were reported as a percentage reduction or a cost per square foot reduction in energy costs for each budget year.

Many school districts plan to improve energy efficiency and lower their energy costs by upgrading the control of their HVAC system at their facilities. 24 plan to improve efficiency through refinement of HVAC system operation, use of energy

management systems, use of simple setback timers on thermostats, or more attention to maintenance. 13 plan to upgrade their entire HVAC system. 30 will reduce costs by using more conservative temperature setpoints or by improving the awareness to efficient energy use.

Some school districts plan to improve HVAC system efficiency by improving the insulation envelope of buildings. 10 plan to install better insulation during building renovations or construct new, energy efficient buildings. 8 will upgrade windows and doors to seal them against air leakage. At least 1 will install double vestibules at building entrances. Others plan to reduce window area, replacing windows with insulated panels. Some districts will encourage the use of ceiling fans during both seasons or modify the school schedule to limit sessions during periods of peak energy usage.

Attention to lighting can improve energy conservation and efficiency. 13 school districts plan to upgrade buildings with more efficient lighting. Some plan to install motion sensors to better control lighting when needed, and some plan to better utilize free, natural lighting to meet their needs.

Transportation Measures:

8 school districts maintain transportation efficiency by routinely using a bus route review system. 3 have improved efficiency by shifting to diesel powered vehicles. Others have upgraded their vehicle fleet and emphasized attention to vehicle maintenance to reduce fuel usage. Some school districts have a written transportation policy, routinely assess the need for travel, or reschedule athletic events to reduce travel.

Energy Audits:

Energy audits have recently been performed at 26 school districts. 5 school districts have energy audits performed prior to 1988. Energy audits are in progress or planned at 6 school districts. Some school districts reduce energy costs by utilizing an energy consultant to control the energy management systems and lighting on a day-to-day basis.

Written Conservation Plan:

Written energy conservation plans exist at 14 school districts. 5 districts reported that written plans are being developed. Some districts use an energy conservation committee or energy conservation officer to focus on opportunities to conserve energy.

REFERENCES

1. State Buildings Monthly Report, dated 12/04/92.
2. Statewide Energy Expenditures, Office of the Comptroller General, FY 1989 through 1992.

APPENDICES

- Appendix A. Energy Conservation Plan and Goals Form, Instructions for the Energy Conservation Plan and Goals Form, and Letter of Transmittal for Energy Conservation Plan and Goals Form.
- Appendix B. Energy Conservation Plan and Goals Results.
- Appendix C. Figures

Appendix A:

Energy Conservation Plan and Goals Form,
Instructions for the Energy Conservation Plan and Goals Form, and
Letter of Transmittal for Energy Conservation Plan and Goals
Form.

STATE OF SOUTH CAROLINA
State Budget and Control Board
DIVISION OF GENERAL SERVICES



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1201 MAIN STREET, SUITE 420
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RICHARD W. KELLY
DIVISION DIRECTOR

September 17, 1992

name
address

Dear salutation:

On July 1, 1992, Governor Campbell signed into law the South Carolina Energy Efficiency Act (the Act) which, under Section 48-52-620(A), requires each state agency and public school district to submit for approval to the State Energy Office an energy conservation plan and energy conservation goals, including energy consumption goals.

Enclosed is the suggested format (with instruction sheet) which, pursuant to Section 48-52-620(E), your agency or school district should use to submit your energy conservation plan and goals.

The information to be submitted will assist the State Energy Office in defining a collective baseline for facilities and, more importantly, establish optimal standards for energy efficiency and building performance. These standards may ultimately define goals and offer guidance as energy plans are established.

Plans and goals can be established by state agencies and public school districts once each entity has determined its current situation and has gained an understanding or vision of optimal energy performance for the facilities under your responsible charge.

It may be appropriate to conduct an energy audit to determine the current energy situation in a facility. This exercise represents the first step of an energy plan and provides a basis for establishing goals. A detailed audit will familiarize responsible parties with facilities and energy systems and will define the "starting point". It is not necessary to return your audit to us. It is suggested to be used merely as a tool to

salutation
September 17, 1992
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establish your energy conservation plan and goals as required by the Act.

We have met with various utilities providing electric and gas service. Each has expressed a willingness to provide assistance to you in conducting the audit and setting your goals. We encourage you to contact your energy suppliers.

The Energy Office intends to submit the first reports to the General Assembly December 31, 1992. Therefore we request that you return your energy conservation goals and plan on the enclosed format not later than November 30, 1992.

I have great confidence that we can cooperatively work together to meet the energy needs of South Carolina and at the same time produce a plan/policy which is economically beneficial to our State. Your assistance and support in obtaining this information will be greatly appreciated.

Should you have any questions regarding this matter, please contact the State Energy Office at 734-3364

Sincerely,

Richard W. Kelly

Enclosure

INSTRUCTIONS FOR THE ENERGY CONSERVATION PLAN AND GOALS FORMAT

This instruction sheet is provided to assist you, the Energy Coordinator, in completing the attached format. All of the information sought will not be applicable to each agency or school and some information will not be applicable to certain items. In such a case, simply indicate "n/a" in the space provided. Your efforts in completing this format will be greatly appreciated.

Note for those agencies with lease agreements: Although most lease agreements include utilities in the rent payment, a case by case review of each agreement is recommended to assist in determining if an energy conservation plan/goals would benefit the agency.

STEP 1

When providing information for this step, those agencies/school districts with more than one (1) building, consider grouping those buildings into larger units, facilities, so that your answers will cover a number of buildings. For instance, if your agency is a tech school, you may wish to combine all campus buildings into one facility or have classroom buildings one facility and buildings which are primarily offices as another facility. How your buildings are metered may be the biggest factor in grouping. You decide what makes sense to you and then simply note on the form how you did it.

We recognize that you may have buildings within a facility grouping operating on different schedules. We are looking for typical or average answers. Feel free to explain your answers.

STEP 2

Please provide the requested information based on the Facility identified in Step 1

STEP 3

This information will provide a data base of successful energy conservation programs, measures and data and will assist the Energy Office in providing energy information clearinghouse functions.

STEP 4

Generally describe your goals and objectives for implementing energy savings. Use additional pages if needed.

STEP 5

This step solicits your plans for future energy conservation measures. The information, as in Step 3, will be used to compile a database and assist the Energy Office in defining energy conservation goals and offering guidance as energy plans are established.

QUESTIONS

In addition to answering the questions in this section, please feel free to comment/provide any additional information that you feel is pertinent. We think some of the best ideas and direction will come from you and we will highly value and appreciate whatever you wish to share with us.

Please return form to: State Energy Office, 915 Main Street, Columbia, S.C. 29201

ENERGY CONSERVATION PLAN AND GOALS

STEP 1 FACILITY IDENTIFICATION

Name of Facility: _____ Facility ID: _____
 Responsible Agency: _____
 Address: _____
 Energy Coordinator: _____ Phone No.: _____
 Number of buildings: _____

FOR EACH FACILITY:

Primary activity: _____

Typical Hours of Operation: From: _____ To: _____
 Monday thru Friday _____
 Saturday _____
 Sunday _____
 Holidays _____

Variations:

Daily _____
 Seasonal _____

Scheduled Building Shutdowns

No. of Days: _____
 Reasons: _____

Floor Space and Usage

Gross Sq. Ft. _____
 Heated Sq. Ft. _____
 Cooled Sq. Ft. _____

STEP 2 ENERGY USE ASSESSMENT (Most Recent 12 Months Period)

Type	Units Consumed(CF, (Kwh,gal.etc.)	Average Cost/ Unit	Total Cost	Supplier/ Source
Natural gas	_____	_____	_____	_____
Electricity	_____	_____	_____	_____
Oil	_____	_____	_____	_____
Other (Specify)	_____	_____	_____	_____
Total Cost	\$ _____			

STEP 3 WHAT HAS BEEN YOUR MOST SUCCESSFUL ADOPTED ENERGY CONSERVATION MEASURE(S) CURRENTLY IN PLACE WHICH WAS INSTALLED WITHIN THE LAST THREE (3) YEARS?

(Use additional pages if needed.)

Type of measure: _____
(Building improvement, equipment replacement, behavioral modification, etc.)
Implementation date: _____ Actual annual energy savings: _____
Cost of measure: _____ Payback period: _____
Method of financing: _____

STEP 4 GOALS AND PLANS

STEP 5 PLANNED ENERGY CONSERVATION MEASURES

(Use additional pages if needed.)

Type of measure: _____
(Building improvement, equipment replacement, behavioral modification, etc.)
Projected implementation date: _____ Projected annual energy savings: _____
Projected cost of measure: _____ Estimated payback period: _____
Method of financing: _____
Implementation considerations: (occupant disruption, environmental benefits, improved lighting levels, increased comfort.)

QUESTIONS

Do you have a written conservation policy? _____
(If yes, please provide a copy or examples.) _____

Have accomplishments been identified? _____

Has an energy audit been conducted at your facility? _____
(If yes, please provide a copy summary or examples.) _____

If yes, by on-site personnel? _____

By energy supplier? _____ By other? _____

What transportation related energy conservation measures have been or plan to be implemented? _____

Appendix B.

Energy Conservation Plan and Goals Results.

ENERGY CONSERVATION PLAN AND GOALS

STEP 1 FACILITY IDENTIFICATION

	AGENCIES		SCHOOL DISTRICTS	
	<u>Number</u>	<u>% of Total</u>	<u>Number</u>	<u>% of Total</u>
TOTAL:	139	100%	91	100%
RESPONDENTS (included in report)	105	76%	59	65%
LATE RESPONDENTS (not included)	5	4%	6	7%

* n - refers to the number of responses to that particular question

FOR EACH FACILITY:

TOTAL NUMBER OF BUILDINGS:

Agencies

<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
60	1	42	1	111	581	2,504

School Districts

<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
57	1	22	16	30	211	1,255

REPORTED WEEKLY HOURS OF OPERATION:

Agencies

<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>
62	40	59	45	31	168

School Districts

<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>
56	36	46	45	7	80

SCHEDULED BUILDING SHUTDOWNS:

Agencies - Not Applicable

School Districts - Summer Recess

29 Districts report building shutdowns during summer recess

FLOOR SPACE AND USAGE (sq. ft.):

Agencies

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
Gross	92	300	426,748	22,456	1,236,295	7,777,000	39,260,832
Heated	64	719	1,061,226	30,160	4,392,565	33,959,222	33,959,222
Cooled	64	719	948,142	25,291	3,937,245	30,340,556	30,345,552

School Districts

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
Gross	38	2,200	686,928	462,324	585,277	1,980,000	26,103,249
Heated	36	2,200	690,533	433,141	591,906	1,980,000	24,859,202
Cooled	36	2,200	635,362	394,614	559,125	1,980,000	22,873,047

STEP 2 ENERGY USE ASSESSMENT (Most Recent 12 Months Period)

UTILITIES:

Agencies - Included below are utility costs for 55 agencies that lease from General Services and 26 agencies that pay utilities directly. The remainder lease and do not pay separate utilities.

Electricity

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
kwh	68	10,728	10,041,878	1,548,019	25,678,403	144,073,654	682,847,733
\$	70	448	494,231	64,804	1,224,500	6,515,503	34,596,141

Natural Gas

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
cf	58	0	6,858,892	6,351	48,239,932	367,676,412	397,816,734
\$	59	1	153,799	3,505	402,888	1,964,296	9,074,149

Liquefied Petroleum (Propane)

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
gal	6	28	78,029	4,157	164,788	412,526	468,173
\$	7	31	47,966	21,945	83,630	233,694	335,762

Oil

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
gal	33	7	13,577	401	34,990	190,468	448,057
\$	33	4	6,623	227	14,637	66,282	218,562

Coal

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
ton	1	--	--	--	--	--	1,619
\$	1	--	--	--	--	--	863,257

Waste Oil

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
gal	1	--	--	--	--	--	1,493
\$	1	--	--	--	--	--	0

School Districts

Electricity

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
kwh	35	138,650	6,648,511	4,407,268	6,061,477	20,105,312	358,244,807
\$	40	20,996	481,003	319,845	427,329	1,591,962	44,394,315

Natural Gas

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
cf	29	482	786,909	38,667	2,719,596	13,816,303	22,820,374
\$	32	496	33,304	24,602	27,510	111,095	1,065,722

Liquefied Petroleum (Propane)

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
gal	10	269	5,081	4,772	4,058	14,698	50,807
\$	12	306	7,004	6,542	6,278	20,000	84,045

Oil

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
gal	26	372	33,040	16,873	41,556	161,565	859,052
\$	28	277	26,996	14,113	34,683	134,885	755,051

Coal

	<u>*n</u>	<u>Minimum</u>	<u>Average</u>	<u>Median</u>	<u>Std. Dev.</u>	<u>Maximum</u>	<u>Total</u>
ton	1	--	--	--	--	--	312
\$	1	--	--	--	--	--	30,600

STEP 3 WHAT HAS BEEN YOUR MOST SUCCESSFUL ADOPTED ENERGY CONSERVATION MEASURE(S) CURRENTLY IN PLACE WHICH WAS INSTALLED WITHIN THE LAST THREE (3) YEARS?

(Use additional pages if needed.)

Type of measure: _____ (see discussion in narrative)

(building improvement, equipment replacement, behavioral modification, etc.)

Implementation date: _____ Actual annual energy savings: _____

Cost of measure: _____ Payback period: _____

Method of financing: _____

STEP 4 GOALS AND PLANS

_____ (see discussion in narrative)

STEP 5 PLANNED ENERGY CONSERVATION MEASURES

(Use additional pages if needed.)

Type of measure: _____ (see discussion in narrative)

(building improvement, equipment replacement, behavioral modification, etc.)

Projected implementation date: _____ Projected annual energy savings: _____

Projected cost of measure: _____ Estimated payback period: _____

Method of financing: _____

Implementation considerations: (occupant disruption, environmental benefits, improved lighting levels, increased comfort.)

QUESTIONS

Do you have a written conservation policy? _____ AGENCIES: 11. SCHOOL DISTRICTS: 14.

(If yes, please provide a copy or examples.) _____

Have accomplishments been identified? _____

Has an energy audit been conducted at your facility? _____ AGENCIES: 14. SCHOOL DISTRICTS: 26.

(If yes, please provide a copy summary or examples.) _____

If yes, by on-site personnel? _____

By energy supplier? _____ By other? _____

What transportation related energy conservation measures have been or plan to be implemented? _____

(see discussion in narrative)

Appendix C.

Figures.

STATE AGENCIES – ENERGY USE COMPARISON

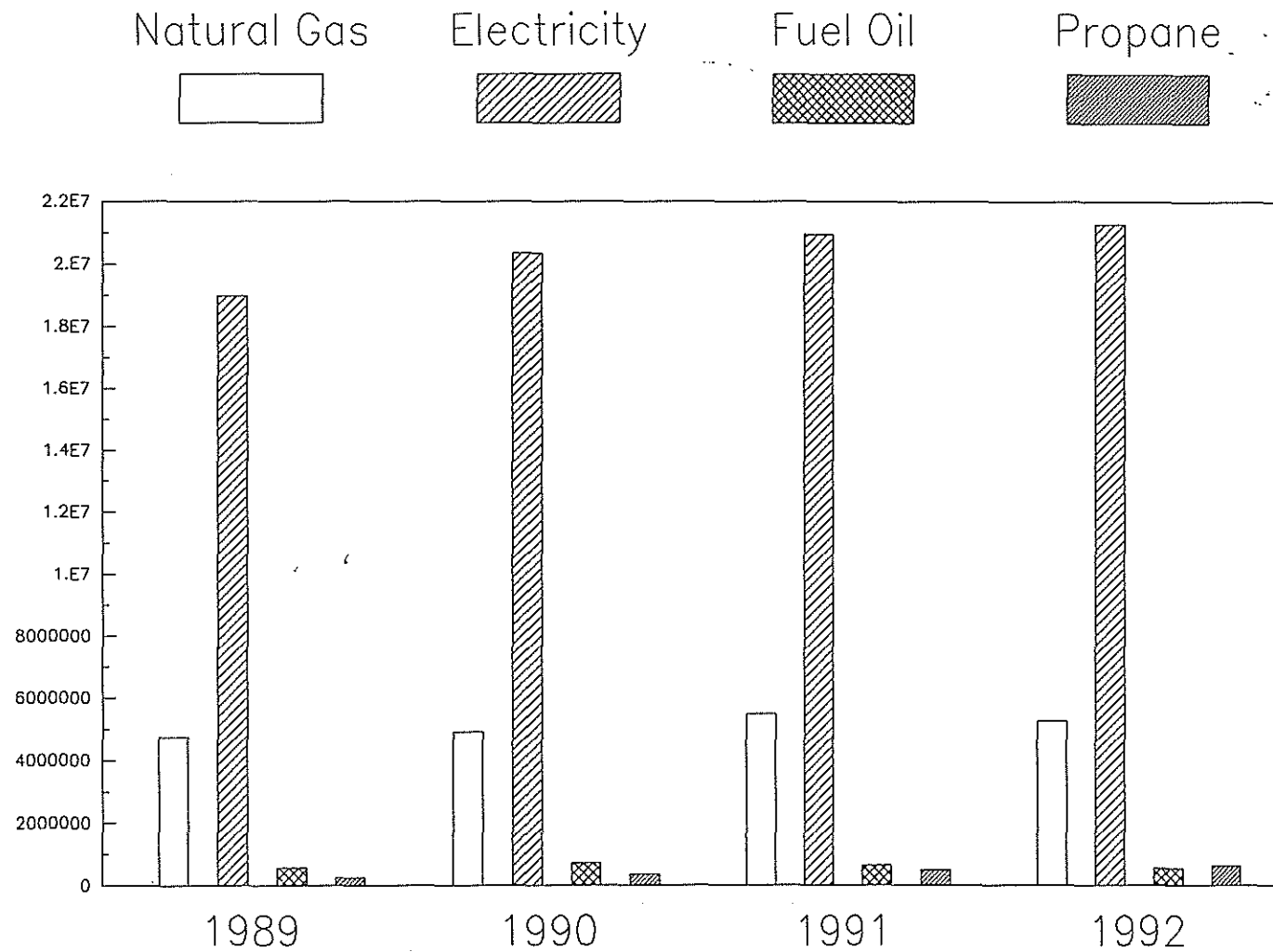


Figure 1

STATE AGENCIES — ENERGY COSTS

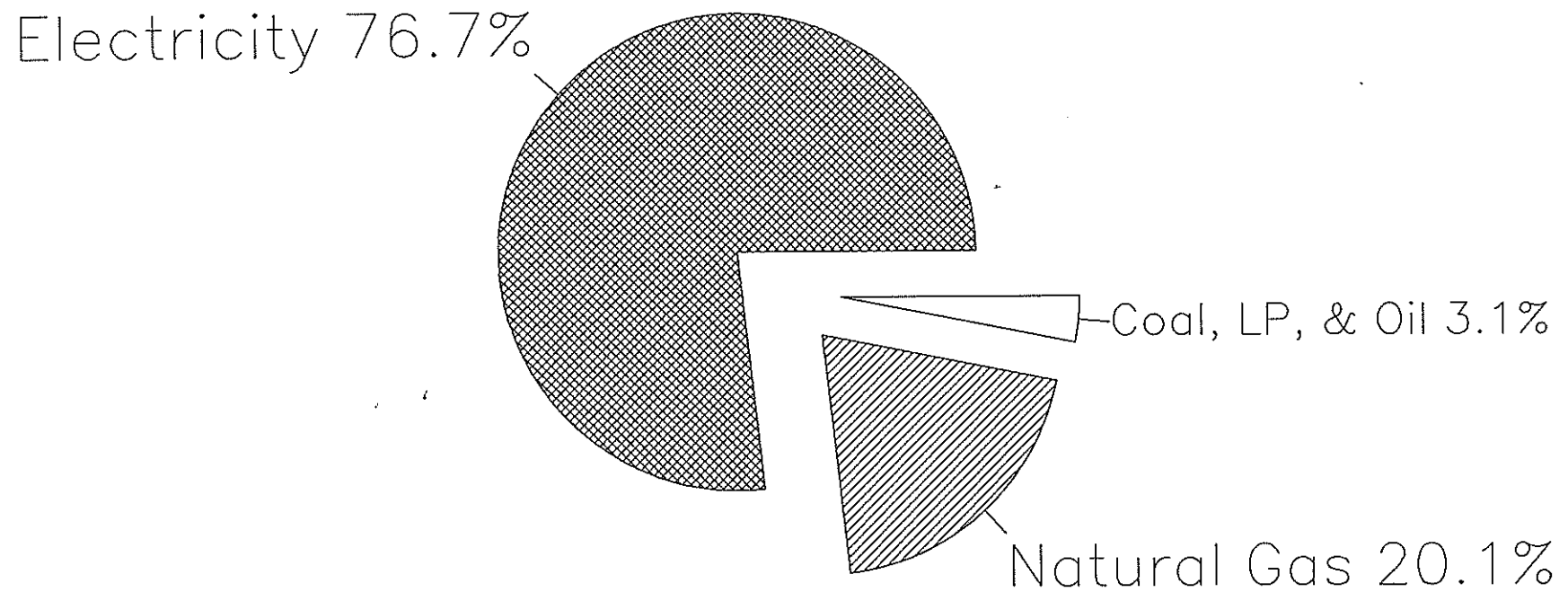


Figure 2

SCHOOL DISTRICTS – ENERGY COSTS

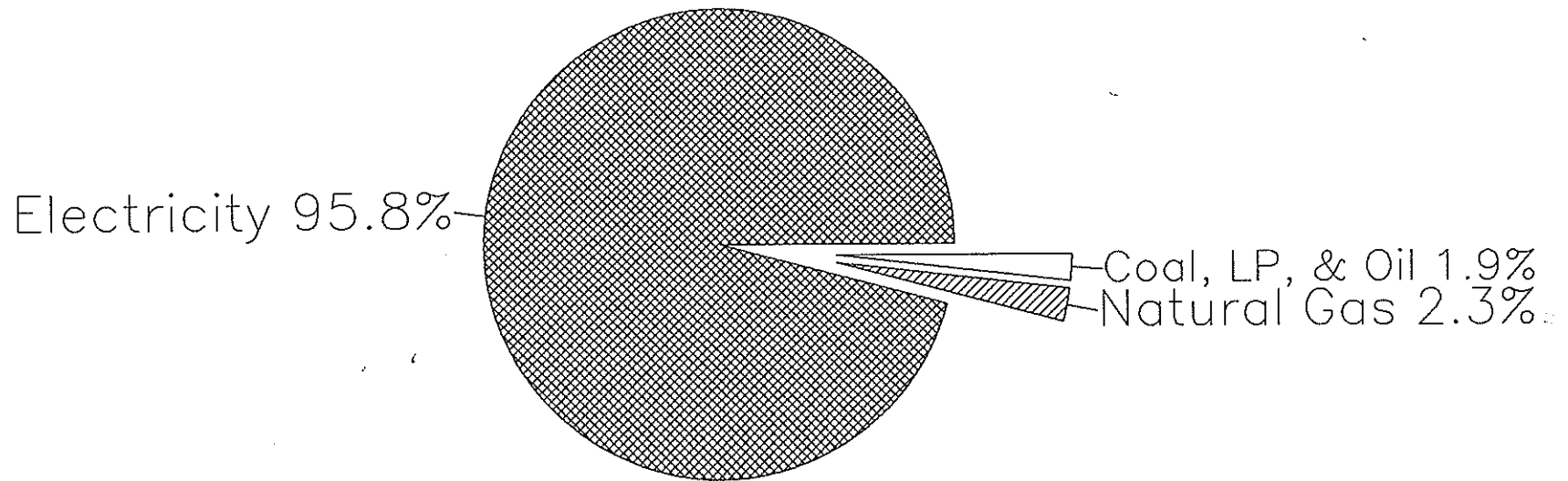


Figure 3