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ABSTRACT

This report provides national estimates on energy needs and expenditures of U.S. public school districts. The survey provides estimates of Fiscal Year (FY) 2000 energy expenditures, FY 2001 energy budgets and expenditures, and FY 2002 energy budgets; methods used to cover energy budget shortfalls in FY 2001; and possible reasons for those shortfalls. The survey also explored the cost-saving measures that school districts took in FY 2000, FY 2001, and FY 2002. Finally, the survey examined the extent to which the chief financial officer of the school district (or other district respondent) perceived the school district succeeded in reducing energy usage and cost per unit. The nationally representative sample of approximately 1,000 regular school districts was selected from the 1999-2000 Common Core of Data Local Education Agency Universe file. (EV)

NCES
National Center for Education Statistics

FRSS
Fast Response Survey System

Effects of Energy Needs and Expenditures on U.S. Public Schools

Statistical Analysis Report

U.S. Department of Education
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NCES 2003-018

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Statistical Analysis Report

May 2003

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EXECUTIVE SUMMARY

Since the 1990s, the United States has experienced periods of volatility in energy costs (Joskow 2002). Public schools have not been immune to the increased energy costs associated with these periods. In light of these experiences, the National Center for Education Statistics (NCES) of the U.S. Department of Education undertook the "Effects of Energy Needs and Expenditures on U.S. Public Schools" survey. The survey examined the effects of energy needs on public school districts and was designed to contribute to a better understanding of how increases in energy expenditures influence school district budgeting and actions. It was not designed to assess the role that weather may have played in effecting energy expenditures, to evaluate the utility of various cost-saving measures that districts might employ to reduce energy expenditures, or to examine several other factors that might directly affect energy budgets.

Although the survey of 851 public school districts focused primarily on fiscal year[1] 2001 (FY 01), the questionnaire also gathered data on FY 00 energy expenditures and budgeted FY 02 energy expenditures to examine the financial resources available to districts. Data collection began in November 2001, approximately 4 months after the start of FY 02, thereby allowing districts to report total expenditures from FY 01 and budgets allocated for FY 02.

This report examines the effects of increased energy costs on the country's public school systems. Specifically, the following five topics are addressed:

- energy expenditures in FY 00 and FY 01, and budgeted expenditures for FY 01 and FY 02;
- efforts to reduce energy consumption;
- characteristics of districts with sufficient and insufficient energy budgets for FY 01;
- experiences of districts with energy budget shortfalls; and
- perceptions of school district staff regarding their districts' ability to respond to immediate and future energy needs.

Survey findings indicate that, on average, school districts spent $137 per pupil on energy expenditures in FY 00. For FY 01, they budgeted an 11 percent increase, raising their budgets to $152 per pupil. However, actual FY 01 per pupil energy expenditures, at $166 per pupil, were 22 percent higher than in FY 00. The average district experienced a 9 percent shortfall between what it had budgeted for FY 01 and its actual expenditures. The average school district budgeted $176 per pupil for FY 02 energy needs, or a 6 percent increase over what it actually spent in FY 01. This $24 per pupil increase over FY 01 budgeted costs translated into an increase of about $1 billion in expected costs.

Key findings from the survey are as follows:

Energy expenditures in FY 01

- In FY 01, energy expenditures were nearly $8 billion (table 1).
- From FY 00 to FY 01, when inflation was 3.4 percent[2] (Snyder and Hoffman 2002), per pupil expenditures for energy rose from $137 to $166 (22 percent) (table 2). If energy costs had risen at the rate of inflation, an additional $22 per pupil, or $1 billion, would have been available for school districts.

[1] Throughout this report, the term "fiscal year" is used to specify the calendar period associated with school district finances. School districts often define the fiscal year from July 1 through June 30, with the year referring to the calendar year in which the fiscal year ends. For example, for many districts, fiscal year 2001 began on July 1, 2000, and ended on June 30, 2001. In using this designation of fiscal years, the 2000–2001 school year would cover similar calendar dates as fiscal year 2001.

[2] As measured by the Consumer Price Index adjusted to a school-year basis (July through June).

- Sixty-one percent of public school districts reported a shortfall in energy funding in FY 01 (table 4).

- Eighty-three percent of school districts that had experienced an energy budget shortfall attributed the shortfall to increases in the cost per unit of energy (table 6).

- Small school districts spent the most per pupil in energy expenditures in FY 01, $204 per pupil (table 2). However, both large and midsized school districts were more likely to encounter shortfalls in funding their energy expenditures in FY 01 (table 4).

- Rural districts also spent more per pupil for energy in FY 01 ($190) than urban or suburban districts ($154 and $164, respectively) (table 2).

- School districts in the West spent $149 per pupil on energy, compared with $189 in the Central region (table 2).

Efforts to reduce energy consumption

- During FY 01, school districts took various actions to improve energy efficiency. Forty-seven percent of public school districts renovated or retrofitted existing facilities, 39 percent locked in rates with one or more energy vendors, 29 percent participated in consortia that negotiated prices with third-party energy vendors, 12 percent instituted or increased fees to use facilities, and 7 percent closed schools or sent students home early for at least 1 day.

- During FY 02, 47 percent of the nation's districts renovated or retrofitted existing facilities, 44 percent locked in rates, 33 percent participated in consortia, 15 percent instituted or increased fees to use facilities, and 6 percent closed schools or sent students home early for at least 1 day.

Characteristics of districts with sufficient and insufficient energy budgets for FY 01

- The likelihood of experiencing an insufficient energy budget was lower in small districts than in either midsized or large districts (56 percent compared to 72 and 80 percent, respectively) (table 4).

- Urban school districts were more likely to have insufficient funds than suburban or rural districts (82 percent compared to 60 and 59 percent, respectively) (table 4).

- The likelihood of a shortfall was greatest in districts in the Southeast, where 81 percent of school districts encountered an insufficient energy budget (table 4).

- Districts whose total FY 01 budget averaged $9,000 or more per student were less likely to have insufficient funds allocated for energy needs than districts that budgeted between $6,500 and $8,999 per student (table 4).

Experiences of districts with energy budget shortfalls

- When they encountered budget shortfalls, school districts took a variety of actions (either individually or in combination): 75 percent reallocated funds from other programs, 53 percent used an unappropriated surplus, and 46 percent used a large proportion of the nonpersonnel budget (figure 3).

- Twenty percent of districts experiencing an insufficient energy budget responded by instituting severe austerity measures (figure 3).

- Nineteen percent of districts responding to an energy budget shortfall found that supervisory approval of increased energy funding was not immediately forthcoming (figure 3).

- In response to a shortfall in the energy budget, 8 percent of districts raised school taxes and 8 percent rolled over the underbudgeted amount to the next fiscal year (figure 3).

- Seven percent of districts experiencing an insufficient energy budget used short-term loans to finance the additional funds needed (figure 3).

Perceptions of school district staff regarding their districts' ability to respond to immediate and future energy needs

- Forty-two percent of respondents nationwide agreed or strongly agreed that their school district had successfully reduced energy usage in FY 01 (table 7).

- Thirty-seven percent of all school districts believed they have a long-term energy problem (table 10), and nearly three-quarters believed that "future increases in energy costs pose a major threat to the allocation of district funds to essential areas such as student instruction" (table 11).

It is important to note that many of the district characteristics used for independent analyses are related to each other. For example, in 1999–2000, district enrollment and metropolitan status were related, with urban districts typically being larger than rural districts. Relationships also exist between other analysis variables, such as enrollment size and region, metropolitan status and poverty concentration, and per pupil expenditure and percent of budget allocated for energy. Because of the relatively small sample size used in this study, no attempt has been made to parse out the independent associations of these variables. Their existence, however, should be considered in the interpretation of the data presented in this report.

ACKNOWLEDGMENTS

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At Westat, Debbie Alexander directed the data collection efforts, assisted by Ratna Basavaraju. Rachel Jiang was the programmer. Carol Litman edited the report, which was formatted by Sylvie Warren. Additional word processing support was provided by Catherine Marshall.

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1. INTRODUCTION

Since the 1990s, the United States has experienced periods of volatility in energy costs (Joskow 2002). Public schools have not been immune to the increased energy costs associated with these periods. In 2001, there were anecdotal reports of school districts employing various measures to reduce energy expenditures, including closing school early or not conducting classes on some days (Moore 2001).

In light of these experiences, the National Center for Education Statistics (NCES) of the U.S. Department of Education undertook the "Effects of Energy Needs and Expenditures on U.S. Public Schools" survey. The survey examined the effects of energy needs on public school districts and was designed to contribute to a better understanding of how increases in energy expenditures influence school district budgeting and actions. Specifically, the survey asked about sources of energy used to power or operate district facilities and equipment such as utilities (e.g., natural gas, oil, and other sources of heating, cooling, and electrical power) and fuel (e.g., gasoline, diesel, or other sources). The study is the first national data collection focused exclusively on energy expenditures in public school districts and helps address the absence of current financial information on school district spending for such purposes.

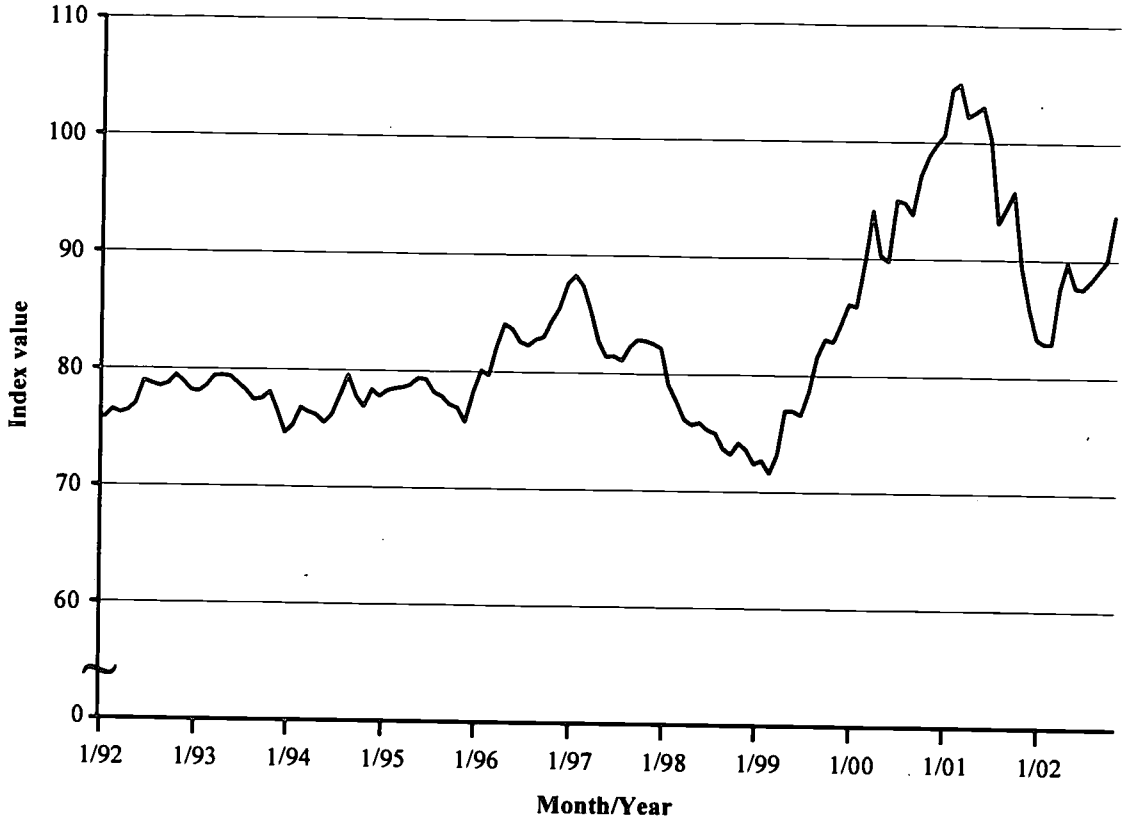
Between 1990 and 2000, total U.S. energy usage increased by about 17 percent, with electricity usage growing even more quickly, by some 25 percent over the decade. Prices for fossil fuels declined some 20 percent over this period, and real electricity prices also fell during the decade. With increasing consumption and declining prices, little new capacity, especially for electricity generation or transmission, was added after 1992. By 1999, rising natural gas prices, tight supplies, and delays in the completion of new generating plants led to markedly higher energy prices. Spot shortages of electricity, particularly in the West, appeared in late 2000 (Joskow 2002).

Figure 1 shows the seasonally adjusted Producer Price Index (PPI) for "finished energy goods" from January 1992 to January 2002 (U.S. Department of Labor 2002a, 2000b). The index, calibrated at 100 in 1982, shows that energy prices remained fairly constant from 1992 through 1995. Beginning in 1996, the country began experiencing more volatility in energy prices. This was especially true from 1999 through 2002 (Snyders 2001). The Bureau of Labor Statistics (BLS) Consumer Price Index (CPI) also has an energy expenditure category and reflects very similar changes over time (Klemmer and Kelley 1998).

The volatility of energy prices is important to school districts because of the amount of energy needed for day-to-day operations. Districts often have older facilities that are not especially energy efficient (Lewis et al. 2000), with the average age of the main instructional buildings of public schools being 40 years. In 29 percent of schools, heating, ventilation, and air conditioning systems are in less than adequate condition, and many have large rooms for gymnasiums and auditoriums, some of which are heated and cooled from early morning to late evening. In addition, the Energy Information Administration (EIA) found that at 26,900 square feet per building, school buildings[1] were much larger than the average commercial buildings (14,500 square feet per building) (U.S. Department of Energy 1999). School districts transport some 24 million students in some 440,000 school buses (School Bus Information Council 2002). Configured with large unmodernized buildings and temporary structures that are used for most of the day and year, and with extensive daily busing, school districts potentially use vast amounts of electricity for cooling and illumination, gas for heating, and vehicle fuel for transporting students.

[1] School buildings include preschools/day care buildings, and elementary, junior, and senior high school buildings.

Figure 1. Seasonally adjusted Producer Price Index (PPI) commodities for finished energy goods: January 1992–January 2002



NOTE: The data are based on the 1982 base period, where the index value is equal to 100. Values above 100 reflect actual increases in the PPI relative to 1982.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Producer Price Index-Commodities, series WPSSOP3510, seasonally adjusted, 1992–2002.

School districts also are vulnerable to rapid increases in energy prices. Budgets are often established and approved a full year in advance of actual expenditures (Weston, Harmer, and Guthrie 1989). As a result, any budget item that was based on a trend line of gradual increases will be underfunded if there is a sharp increase between the time the budget is adopted and the year of actual expenditures. Likewise, there may be a surplus if the district anticipates a continuation of sharp increases that do not materialize.

Finally, the unpredictability of energy prices makes their impact much greater than that implied by the percentage of the budget they ordinarily compose. Previous estimates of average school district energy expenditures are about 3 percent of the total budget and 29 percent of the total maintenance and operations budget. The same survey estimated that U.S. public school districts spent more than $7.8 billion annually for energy resources in the 2000–2001 academic year, up from $6.5 billion in the 1999–2000 academic year (Agron 2001). However, the actual impact of those funds is on "opportunity costs," that is, costs encountered when someone must decide to do one task rather than another task. For school districts faced with an underfunded energy budget, the questions become "What activities will be forgone or reduced to meet the energy costs that surged unexpectedly?" or "What surplus funds, borrowed funds, or increased taxes will be necessary to cover the shortfall?"

Conversely, when school districts designate more funds for energy than are needed, they often lose

the ability to reallocate the funds for other purposes during the budget year. In some cases, school boards must initiate budget amendment resolutions. In some districts, such amendments must be announced at public meetings or published in local media before they can be adopted (Weston, Harmer, and Guthrie 1989).

The "Effects of Energy Needs and Expenditures on U.S. Public Schools" survey focused on fiscal year 2001 (FY 01) energy budgets and expenditures. Nonetheless, the questionnaire also gathered data on FY 00 energy expenditures and budgeted FY 02 energy expenditures to examine the financial resources available to districts. Data collection began in November 2001, approximately 4 months after the start of FY 02, thereby allowing districts to report total expenditures from FY 01 and budgets allocated for FY 02. Additional questions gathered data on methods districts used to respond to energy needs and expenditures, and measures that the district may have instituted to help decrease energy expenditures. Finally, each respondent was asked to describe how the district was prepared for potential increases in energy costs.

Approximately 1,000 public school districts were included in the study sample. Questionnaires were mailed to the superintendent of each district, with a letter requesting that the questionnaire be completed by the chief financial officer (CFO) or other district staff member who was most knowledgeable about energy needs and expenditures. A total of 851 districts responded to the survey, for a weighted response rate of 84 percent.

The questionnaire responses were weighted to produce national estimates that represent all regular public school districts in the United States in 2001.[2] The weights were designed to adjust for the variable probabilities of selection and differential nonresponse. All comparative statements in this report have been tested for statistical significance using t-tests adjusted for multiple comparisons,[3] and are significant at the 0.05 level. Appendix A provides a detailed discussion of the sample and survey methodology.

Most survey estimates presented in this report are shown by selected district characteristics—district enrollment in 1999–2000 (i.e., less than 2,500, 2,500 to 9,999, 10,000 or more), metropolitan status (i.e., urban, suburban, rural), region (i.e., Northeast, Southeast, Central, West), and poverty concentration (i.e., less than 10 percent of students, 10 to 19 percent, 20 percent or more).[4] In addition, three derived variables were created, and the results are shown by those three characteristics:

- Overall FY 01 budget per pupil indicates the total overall district budget per pupil for FY 01 (i.e., less than $6,500, $6,500 to $8,999, $9,000 or more). For ease of discussion, these categories are referred to as low, mid-level, and high budgets per pupil.

- Energy budget sufficiency status indicates whether the district energy budget for FY 01 was sufficient to cover actual energy expenditures (i.e., sufficient, insufficient).

- Percent of budget allocated for energy indicates the percentage of the FY 01 overall district budget designated for energy needs (i.e., 1 percent or less, 2 percent, 3 percent or more).

These district characteristics are fully described in appendix A.

It is important to note that many of the district characteristics used for independent analyses are related to each other. For example, district enrollment in 1999–2000 and metropolitan status are related, with urban districts typically being larger than rural districts. Relationships also exist

[2] For this survey, regular school districts include those that met the following conditions: not a component of a supervisory union or a local school district component of a supervisory union sharing superintendent and administrative services with other local school districts; not closed since the 1998–99 Common Core of Data (CCD) report; had at least one student enrolled according to the 1999–2000 CCD report; and located within the United States.

[3] The Bonferroni adjustment was used to adjust for multiple comparisons.

[4] Poverty concentration is based on the district-level Title I funding and the proportion of children aged 5–17 in families below the poverty level.

between other analysis variables, such as enrollment size and region, metropolitan status and poverty concentration, and per pupil expenditure and percent of budget allocated for energy. Because of the relatively small sample size used in this study, no attempt has been made to parse out the independent associations. Their existence, however, should be considered in the interpretation of the data presented in this report.

This report is divided into chapters that reflect the major topics addressed in the questionnaire. Chapter 2 describes district energy expenditures in FY 00 and FY 01, energy budgets for FY 01 and FY 02, and efforts taken by districts to reduce energy consumption. Chapter 3 reports on the proportion and characteristics of school districts that had sufficient and insufficient funds in the FY 01 budget to cover energy costs, factors associated with shortfalls in the energy budget, and the level of difficulty experienced by districts with insufficient energy budgets while responding to increased energy costs. District staff perspectives on immediate and future energy needs are presented in chapter 4. The concluding chapter summarizes the findings of the study. A detailed survey methodology (appendix A) and tables of standard errors for all data presented in this report (appendix B) are included as technical appendices. The questionnaire is presented in appendix C.

2. DISTRICT ENERGY BUDGETS AND EXPENDITURES AND EFFORTS TO REDUCE ENERGY CONSUMPTION

This survey is the first to examine the energy budgets and expenditures of public school districts nationwide. The data provide information on energy expenditures in FY 00 and FY 01 overall and by type of need (i.e., for utilities, fuel, and other energy needs), and energy budgets for FY 01 and FY 02, as well as actions taken by school districts to reduce energy expenditures. For example, the survey responses provide answers to the following questions:

- How much did public school districts spend for energy in FY 01? What was the mean energy expenditure per pupil?
- How did district energy expenditures change from FY 00 to FY 01?
- How much did public school districts budget for energy for FY 02? How did their FY 02 budgets compare with their FY 01 expenditures?
- What actions (e.g., locking in future utility rates with vendors, closing school early) did districts take to reduce energy expenditures?

Energy Budgets and Expenditures From FY 00 to FY 02

The questionnaire asked district respondents to report their FY 00 and FY 01 energy expenditures, and their FY 01 and FY 02 energy budgets. Data were reported overall and by type of need: utilities, including heating, cooling, and electrical power; gasoline, diesel, and other fuel to operate vehicles; and any other energy needs.

Overall, public school districts spent about $6 billion for energy needs in FY 00. Districts budgeted approximately $7 billion for energy needs for FY 01 and spent approximately $8 billion. They budgeted about $8 billion for anticipated energy needs for FY 02 (table 1). Table 1 also shows those budgets and expenditures by selected district characteristics. For example:

- In FY 00, small and midsized districts each spent about $2 billion for energy, and large districts spent about $3 billion.
- For FY 01, suburban districts budgeted and spent about $4 billion.
- For FY 02, rural districts budgeted nearly $2 billion.
- For FY 02, districts in the West budgeted nearly $3 billion.

In FY 01, among districts nationwide, 90 percent of energy expenditure were for utilities, 9 percent were for fuel, and 1 percent was for other energy needs (not shown in tables in text).[5,6]

Mean Energy Expenditures Per Pupil From FY 00 to FY 01

Districts were asked to report their energy expenditures in FY 00 and FY 01, and to report student enrollment in the 2000–2001 school year. The mean energy expenditures per pupil were calculated using these survey data.[7] The estimated

[5] Based on FY 01 total energy expenditures.

[6] Estimates and standard errors for all data indicated as "not shown in tables in text" are presented in table B-12 in appendix B.

[7] The mean energy expenditure per pupil for FY 00 and FY 01 were calculated using the mean energy expenditure in FY 00 and FY 01, and district enrollment during the 2000–2001 school year. Districts were asked to report enrollment for the 2000–2001 school year, but not for the 1999–2000 school year (the timeframe corresponding to FY 00). Therefore, the enrollment during the 2000–2001 school year was used to estimate the mean energy expenditure per pupil for FY 00.

Table 1. Total public school district fiscal year (FY) 2000 and FY 2001 energy expenditures and FY 2001 and FY 2002 energy budgets as reported in FY 2002, by selected district characteristics: FY 2000 to FY 2002

District characteristic	Energy expenditures in FY 2000 (in thousands of dollars)	Energy budgets for FY 2001 (in thousands of dollars)	Energy expenditures in FY 2001 (in thousands of dollars)	Energy budgets for FY 2002 (in thousands of dollars)
Total	$6,426,074	$7,126,622	$7,852,912	$8,312,420
District enrollment in 1999–2000				
1 to 2,499	1,388,606	1,634,291	1,744,753	1,877,036
2,500 to 9,999	1,935,604	2,153,806	2,390,040	2,541,897
10,000 or more	3,101,864	3,338,525	3,718,120	3,893,487
Metropolitan status				
Urban	1,702,812	1,844,172	2,091,183	2,193,444
Suburban	3,358,364	3,696,993	4,039,605	4,309,729
Rural	1,364,899	1,585,457	1,723,124	1,809,247
Region				
Northeast	1,414,674	1,565,057	1,685,523	1,757,052
Southeast	1,411,833	1,520,270	1,693,385	1,689,562
Central	1,521,778	1,729,368	1,938,487	2,017,117
West	2,077,788	2,311,927	2,535,518	2,848,689
Poverty concentration[1]				
Less than 10 percent	2,033,404	2,233,046	2,470,603	2,613,162
10 to 19 percent	2,178,677	2,430,168	2,647,565	2,860,221
20 percent or more	2,175,209	2,420,322	2,680,630	2,779,802
Overall fiscal year 2001 budget per pupil				
Low: Less than $6,500	1,769,108	1,943,150	2,116,720	2,303,629
Mid-level: $6,500 to $8,999	2,634,558	2,897,964	3,220,895	3,413,197
High: $9,000 or more	2,011,845	2,274,478	2,503,267	2,582,609
Fiscal year 2001 energy budget sufficiency status[2]				
Sufficient	1,829,566	2,277,965	2,090,132	2,416,979
Insufficient	4,550,034	4,848,657	5,707,773	5,886,499
Percent of budget allocated for energy[3]				
1 percent or less	1,464,106	1,578,164	1,852,479	1,996,603
2 percent	3,042,007	3,355,480	3,656,640	3,907,441
3 percent or more	1,867,167	2,186,408	2,281,123	2,391,769

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Numbers presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. Detail may not sum to totals because of rounding. In addition, no imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Estimated totals using nonimputed data implicitly impute a zero value for all missing data. These zero implicit imputations will mean that the estimates of totals will underestimate the true population totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

percentage change in the mean energy expenditures per pupil was calculated by comparing these data across years. These expenditures and the percentage change in mean energy expenditures per pupil are shown in table 2.

Overall, the mean energy expenditure per pupil was $137 in FY 00 and $166 in FY 01, a 22 percent increase. The expenditure per pupil varied by several district characteristics in both FY 00 and FY 01. The percentage change also differed by district characteristics, including region, FY 01 energy budget sufficiency status, and percent of the FY 01 overall budget allocated for energy.

In both FY 00 and FY 01, the mean energy expenditure per pupil decreased as district enrollment in 1999–2000 increased. In FY 00, the mean ranged from $165 per pupil in small districts to $125 per pupil in large districts; in FY 01, the mean ranged from $204 per pupil in small districts to $150 per pupil in large districts.

The mean per pupil expenditure for energy also varied by metropolitan status in both years. In FY 00, rural districts spent more per pupil for energy than either urban or suburban districts ($153 versus $125 and $137, respectively), and the amount spent per pupil by suburban districts ($137) was higher than the amount spent by urban districts ($125). In FY 01, the difference between rural districts and other districts continued, with rural districts spending an average of $190 per pupil compared with $154 spent by urban districts and $164 spent by suburban districts.

In FY 00 and in FY 01, district energy spending per pupil also varied by region. In both years, districts in the West spent less per pupil for energy than districts in any other region. In FY 00, districts in the West spent $123 per pupil, compared with $136 in the Southeast, $148 in the Central region, and $150 in the Northeast. In FY 01, districts in the West spent $149 per pupil, compared with $163 in the Southeast, $178 in the Northeast, and $189 in the Central region. Additional differences by region were detected in FY 00 and FY 01. In FY 00, energy spending per pupil of districts in the Northeast ($150) was higher than the spending level of districts in the Southeast ($136). In FY 01, a difference was also detected between the mean energy expenditure per pupil of districts in the Southeast ($163) and the amount spent by districts in the Central region ($189). The percent change in the mean energy expenditure per pupil from FY 00 to FY 01 among districts in the Central region was greater than among districts in any other region (27 percent compared with 19 to 21 percent).

In both FY 00 and FY 01, districts with the lowest poverty concentration spent more per pupil for energy than other districts. In FY 00, the low-poverty districts spent $152 per pupil, compared with $134 per pupil in districts with mid-level poverty concentrations and $126 per pupil in districts with the highest level of poverty concentration. The same pattern was detected in FY 01: $185 per pupil was spent in the low-poverty districts, compared with $163 and $155 per pupil in the other districts.

Districts with low overall FY 01 budgets per pupil spent less per pupil for energy than other districts in both FY 00 and FY 01. In FY 00, the districts with low overall FY 01 budget per pupil spent $128 per pupil on energy, compared with $139 per pupil spent by districts with mid-level overall budgets per pupil and $143 per pupil spent by districts with high overall FY 01 budgets per pupil. In FY 01, the districts with low overall FY 01 budgets per pupil spent $152 per pupil on energy, compared with $169 by districts with mid-level overall budgets per pupil and $177 by districts with high overall FY 01 budgets per pupil.

The questionnaire also asked districts to report the overall energy budget for FY 01. Responses to this question were used to classify districts by whether or not the amount budgeted for energy needs in FY 01 was sufficient to cover actual energy expenditures. The change in energy expenditure per pupil from FY 00 to FY 01 was significantly different by sufficiency status. Districts that had allocated sufficient funds for FY 01 energy needs experienced a 14 percent increase in energy expenses per pupil: from $140 in FY 00 to $160 in FY 01. Districts that had not allocated sufficient funds for FY 01 energy needs

Table 2. Mean energy expenditures per pupil of public school districts in fiscal year (FY) 2000 and FY 2001, mean energy budgets per pupil of public school districts in FY 2001 and FY 2002, and percentage difference between various years, by selected district characteristics: FY 2000 to FY 2002

District characteristic	Mean energy expenditures per pupil FY 2000 and FY 2001			Mean energy budgets per pupil FY 2001 and FY 2002			Other percent differences per pupil		
	FY 2000	FY 2001	Percent difference	FY 2001	FY 2002	Percent difference	Energy expenditures in FY 2000 and energy budgets for FY 2001	Energy expenditures in FY 2001 and energy budgets for FY 2001	Energy expenditures in FY 2001 and energy budgets for FY 2002
Total	$137	$166	22	$152	$176	16	11	-9	6
District enrollment in 1999–2000									
1 to 2,499	165	204	24	191	220	15	16	-6	8
2,500 to 9,999	140	173	23	158	184	16	13	-9	6
10,000 or more	125	150	20	135	156	15	8	-10	4
Metropolitan status									
Urban	125	154	23	136	161	18	8	-12	4
Suburban	137	164	20	152	175	15	11	-7	6
Rural	153	190	24	176	202	15	15	-7	6
Region									
Northeast	150	178	19	166	186	12	11	-6	5
Southeast	136	163	20	149	163	10	9	-9	#
Central	148	189	27	169	196	16	14	-11	4
West	123	149	21	136	166	22	11	-9	11
Poverty concentration[1]									
Less than 10 percent	152	185	21	169	194	15	11	-8	5
10 to 19 percent	134	163	21	150	175	17	12	-8	8
20 percent or more	126	155	23	140	161	15	11	-9	4
Overall fiscal year 2001 budget per pupil									
Low: Less than $6,500	128	152	19	140	164	17	10	-8	7
Mid-level: $6,500 to $8,999	139	169	22	153	180	17	10	-10	6
High: $9,000 or more	143	177	24	162	183	13	14	-8	4
Fiscal year 2001 energy budget sufficiency status[2]									
Sufficient	140	160	14	174	184	6	24	9	15
Insufficient	135	169	25	143	173	20	6	-15	2
Percent of budget allocated for energy[3]									
1 percent or less	99	126	27	107	134	25	8	-15	6
2 percent	141	169	20	155	179	16	10	-8	6
3 percent or more	180	219	22	210	229	9	17	-4	4

Rounds to zero.

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures).

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Numbers presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

experienced a 25 percent increase in energy expenses per pupil: from $135 in FY 00 to $169 in FY 01.

Mean energy expenditures per pupil in FY 00 and FY 01 were both positively related to the percentage of the district budget that was allocated for energy needs. In FY 00, the mean was $99 per pupil in districts that allocated 1 percent or less of the overall budget for energy needs, $141 per pupil in districts that allocated 2 percent, and $180 per pupil in districts that allocated 3 percent or more of the overall budget for energy needs. In FY 01, the respective means were $126, $169, and $219 per pupil. The percentage change in mean energy expenditure per pupil from FY 00 to FY 01 was higher among districts that had allocated 1 percent or less of the FY 01 for energy than among districts that had allocated either 2 percent or 3 percent or more (27 percent versus 20 and 22 percent, respectively).

Mean Energy Budgets Per Pupil for FY 01 to FY 02

Table 2 also shows the mean energy budgets per pupil for FY 01 and FY 02, and the percentage change in mean energy budgets per pupil during these years. The mean energy budgets per pupil and the percentage change in the mean energy budget per pupil were calculated using survey data on district energy budgets and district enrollment data for each year.

Overall, the mean energy budget per pupil was $152 for FY 01 and $176 for FY 02, a 16 percent increase. The budget per pupil varied by each of the selected district characteristics for both FY 01 and FY 02. The percentage change differed by region, sufficiency status, and percent of budget allocated for energy.

For both FY 01 and FY 02, the mean energy budget per pupil decreased as district enrollment in 1999–2000 increased. For FY 01, the mean ranged from $191 per pupil in small districts to $135 per pupil in large districts; for FY 02, the mean ranged from $220 per pupil in small districts to $156 per pupil in large districts.

The per pupil energy budget also varied by metropolitan status for both years. For FY 01, urban districts budgeted $136 per pupil, suburban districts budgeted $152, and rural districts budgeted $176. For FY 02, the respective mean energy budgets per pupil were $161, $175, and $202.

The FY 01 and FY 02 mean energy budgets per pupil both varied by region. For FY 01, districts in the West budgeted less per pupil for energy than districts in any other region ($136 versus $149 in the Southeast, $166 in the Northeast, and $169 in the Central region). Also, districts in the Southeast budgeted less than districts in the Northeast and Central regions ($149 versus $166 and $169, respectively). For FY 02, the mean energy budget per pupil was $166 in the West and $163 among districts in the Southeast; districts in both these regions budgeted less for energy than districts in the Northeast ($186) and Central region ($196). The percent change in the mean energy budget per pupil from FY 01 to FY 02 among districts in the West was greater than among districts in any other region (22 percent compared with 10 to 16 percent). The percent change also was greater among districts in the Central region than among districts in the Southeast (16 versus 10 percent, respectively).

Districts with the lowest poverty concentration budgeted more per pupil for energy than other districts for both FY 01 and FY 02. For FY 01, the low-poverty districts budgeted $169 per pupil, compared with $150 per pupil in districts with mid-level poverty concentrations and $140 per pupil in districts with the highest level of poverty concentration. The same pattern was detected for FY 02: $194 per pupil was budgeted in the low-poverty districts, compared with $175 in mid-level poverty districts and $161 in districts with the highest poverty concentrations. However, for FY 02, the difference detected between districts with mid-level poverty concentrations and those with the highest poverty concentration was also significant.

Districts with low overall FY 01 budgets per pupil budgeted less per pupil for energy than other districts for both FY 01 and FY 02. For FY 01, districts with low overall budgets per pupil spent

$140 per pupil, compared with $153 per pupil spent by districts with mid-level budgets and $162 per pupil spent by districts with high budgets per pupil. For FY 02, districts with low overall budgets per pupil spent $164 per pupil, compared with $180 spent by districts with mid-level budgets and $183 spent by districts with high budgets per pupil.

The FY 01 and FY 02 mean energy budgets per pupil were lower among districts that experienced a shortfall in the FY 01 energy budget than among districts that budgeted sufficient funds for FY 01 energy needs. For FY 01, districts that had experienced a shortfall had a mean energy budget of $143 per pupil, compared with $174 per pupil among districts with sufficient energy budgets. For FY 02, the mean energy budget per pupil among districts that experienced a shortfall was $173, compared with $184 per pupil in districts that had sufficient FY 01 energy budgets. On average, there was a greater percentage increase in the mean energy budget per pupil from FY 01 to FY 02 among districts that had experienced a shortfall in FY 01 than among districts that had sufficient energy funds in FY 01 (20 percent versus 6 percent).

The mean energy budget per pupil was positively related to the percentage of the FY 01 district budget that was allocated for energy needs. For FY 01, the mean was $107 per pupil in districts that allocated 1 percent or less of the overall budget for energy needs, $155 in districts that allocated 2 percent, and $210 in districts that allocated 3 percent or more of the overall budget for energy needs. Similar differences were detected in the means for FY 02, which ranged from $134 to $229 per pupil.

There was a negative relationship between the percentage of the FY 01 district budget allocated for energy needs and the percentage change in mean energy budget per pupil from FY 01 to FY 02. The increase in mean energy budget per pupil among districts that had allocated 1 percent or less of the FY 01 district budget for energy was 25 percent, compared to 16 percent among districts that had allocated 2 percent and 9 percent among districts that had allocated 3 percent or more.

Differences Between Energy Budgets and Expenditures

Districts might be expected to consider their energy expenditures from one fiscal year as they develop their energy budgets for the subsequent year. Table 2 shows the relationships between FY 00 energy expenditures and FY 01 budgets, between FY 01 energy budgets and FY 01 expenditures, and between FY 01 energy expenditures and FY 02 budgets.

On average, district energy budgets for FY 01 were 11 percent higher than the energy expenditures in FY 00, with FY 00 expenditures averaging $137 per pupil and FY 01 budgets averaging $152 per pupil. The difference between FY 00 energy expenditures and FY 01 energy budgets varied by several district characteristics:

- Small school districts budgeted 16 percent more and midsized districts budgeted 13 percent more for energy needs for FY 01 than they had spent for energy in FY 00. Both these differences were significantly larger than the 8 percent difference reflected in the budgets of large districts.

- Districts with sufficient FY 01 energy budgets had instituted budgets reflecting a larger increase in energy funding than districts that experienced a shortfall in FY 01 (24 versus 6 percent).

- The FY 01 energy budgets of districts that allocated 3 percent or more of the overall budget to energy needs reflected a 17 percent increase above their FY 00 energy expenditures. This was a larger difference than that reflected in the budgets of districts that allocated 1 percent or less or 2 percent of the overall FY 01 budget to energy needs (8 and 10 percent, respectively).

For FY 01, public school districts nationwide budgeted 9 percent less for energy needs than they had expended in FY 01, corresponding to $166 per pupil in FY 01 expenditures and $152 per pupil for FY 01 budgets. On average, districts with

sufficient energy budgets spent 9 percent less than they budgeted, while those with insufficient energy budgets spent 15 percent more than budgeted. The difference also varied by the percentage of the district budget allocated for energy needs. The shortfall in FY 01 energy budgets was smaller among districts that allocated a greater share of their overall budget for energy needs, ranging from 15 percent among districts that allocated the smallest portion of their budgets to energy to 4 percent among districts that allocated the largest portion of their budgets to energy.

Nationwide, the mean energy expenditure per pupil in FY 01 was $166, and the mean energy budget per pupil for FY 02 was $176. This corresponds to a difference of 6 percent between FY 01 district energy expenditures and FY 02 district energy budgets. This difference varied by region, with the FY 02 mean energy budget among districts in the West being 11 percent higher than the FY 01 mean energy expenditure. Differences among districts in other regions were smaller: 5 percent in the Northeast, and 4 percent in the Central region.

The difference between the FY 01 mean energy expenditure and FY 02 mean energy budget also varied by FY 01 energy budget sufficiency status. Districts that had experienced an energy budget shortfall in FY 01 instituted FY 02 energy budgets that were, on average, 2 percent higher than the FY 01 mean energy expenditure. Districts that had sufficient funds allocated for FY 01 energy needs instituted FY 02 mean energy budgets that were, on average, 15 percent higher than the FY 01 expenditures.

Efforts to Reduce Energy Expenditures

In 2001, there were anecdotal reports of school districts employing various measures to reduce energy expenditures (Moore 2001). Respondents were asked about several actions that the districts might have taken each year in FY 01 and FY 02: renovating or retrofitting facilities, locking in rates with energy vendors, participating in consortia that negotiated prices with third-party energy vendors, instituting or increasing fees to use facilities, and closing school or sending students home early (table 3).

During FY 01, nearly half (47 percent) of public school districts overall renovated or retrofitted existing facilities to improve energy efficiency. The proportion of districts that renovated or retrofitted facilities increased with district size: 40 percent of small districts, 63 percent of midsized districts, and 75 percent of large districts took this action. Districts that allocated sufficient funds for energy needs in FY 01 were less likely than districts with insufficient funds to have renovated or retrofitted existing facilities (42 versus 51 percent, respectively).

Locking in rates with one or more energy providers to reduce energy expenditures was another option taken by some school districts. Thirty-nine percent of all public school districts locked in rates with one or more energy vendors in FY 01. Suburban districts (44 percent) and rural districts (37 percent) were more likely to have taken this action than urban districts (22 percent).

Districts in the West (9 percent) were less likely than districts in any other region to have locked in rates, and districts in the Southeast (34 percent) were less likely than districts in the Central region or in the Northeast to have taken this action (52 percent and 60 percent, respectively).

The likelihood that a district locked in rates with energy vendors in FY 01 also varied by poverty concentration and FY 01 budget per pupil. Districts with the lowest level of poverty were more likely than districts with higher levels to have taken this action (51 percent, compared with 37 percent of districts with mid-level poverty concentration and 34 percent of districts with the highest poverty concentration). Twenty-seven percent of districts with low budgets per pupil locked in rates, compared with 41 percent of districts with mid-level budgets per pupil and 46 percent of districts with high budgets per pupil.

Table 3. Percent of public school districts using various measures to reduce energy expenditures, by selected district characteristics: Fiscal years 2001 and 2002

District characteristic	Measures taken in fiscal year 2001[1]				
	Renovated/ retrofitted facilities	Locked in rates	Participated in consortia	Instituted/ increased fees to use facilities	Closed schools/ sent students home early
Total	47	39	29	12	7
District enrollment in 1999–2000					
1 to 2,499	40	38	26	9	8
2,500 to 9,999	63	44	39	18	7
10,000 or more	75	38	30	29	6
Metropolitan status					
Urban	53	22	25	13	3
Suburban	51	44	45	16	7
Rural	43	37	17	8	8
Region					
Northeast	46	60	68	11	4
Southeast	59	34	10	13	11
Central	48	52	29	10	8
West	44	9	9	15	7
Poverty concentration[2]					
Less than 10 percent	50	51	42	17	6
10 to 19 percent	53	37	30	10	7
20 percent or more	42	34	18	11	9
Overall fiscal year 2001 budget per pupil					
Low: Less than $6,500	55	27	18	14	8
Mid-level: $6,500 to $8,999	46	41	27	11	8
High: $9,000 or more	44	46	40	11	6
Fiscal year 2001 energy budget sufficiency status[3]					
Sufficient	42	40	30	10	9
Insufficient	51	39	29	13	7
Percent of budget allocated for energy[4]					
1 percent or less	47	44	38	10	7
2 percent	51	42	33	13	7
3 percent or more	44	33	19	11	8

See notes at end of table.

Table 3. Percent of public school districts using various measures to reduce energy expenditures, by selected district characteristics: Fiscal years 2001 and 2002—Continued

District characteristic	Measures taken in fiscal year 2002[1]				
	Renovated/ retrofitted facilities	Locked in rates	Participated in consortia	Instituted/ increased fees to use facilities	Closed schools/ sent students home early
Total	47	44	33	15	6
District enrollment in 1999–2000					
1 to 2,499	41	42	31	12	7
2,500 to 9,999	59	50	42	22	5
10,000 or more	74	44	32	37	4
Metropolitan status					
Urban	55	27	28	22	1
Suburban	49	48	50	21	6
Rural	44	42	21	10	7
Region					
Northeast	47	64	70	15	5
Southeast	56	35	10	11	8
Central	44	55	33	11	7
West	48	18	17	23	5
Poverty concentration[2]					
Less than 10 percent	47	56	46	21	6
10 to 19 percent	51	43	35	13	6
20 percent or more	45	38	22	13	7
Overall fiscal year 2001 budget per pupil					
Low: Less than $6,500	49	34	23	17	7
Mid-level: $6,500 to $8,999	45	45	31	15	7
High: $9,000 or more	47	51	44	14	4
Fiscal year 2001 energy budget sufficiency status[3]					
Sufficient	40	42	33	14	7
Insufficient	52	45	34	16	5
Percent of budget allocated for energy[4]					
1 percent or less	44	48	41	15	4
2 percent	50	46	36	15	6
3 percent or more	45	40	25	16	7

[1]Data reflect measures that were taken during the first half of FY 02 or that were anticipated during the fiscal year, since data collection was completed before the end of the fiscal year.

[2]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[3]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[4]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Respondents were able to select as many answers as applied. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

School districts sometimes participate in consortia to negotiate prices with third-party vendors; these prices are typically at lower rates than could be obtained by individual districts. During FY 01, 29 percent of public school districts nationwide participated in consortia. The likelihood that districts participated in consortia varied by nearly all the district characteristics selected for analysis:

- Midsized districts were more likely to participate in consortia than small districts: 39 percent compared with 26 percent.
- Nearly half (45 percent) of suburban districts participated in consortia, compared with 25 percent of urban districts and 17 percent of rural districts.
- Sixty-eight percent of districts in the Northeast participated in consortia. In contrast, districts in the West and Southeast (9 and 10 percent, respectively) were less likely than districts in the Central region (29 percent) to participate in consortia.
- The likelihood of participating in consortia decreased as poverty concentration increased, ranging from 42 percent of low-poverty districts to 18 percent of high-poverty districts.
- Participating in consortia increased as the overall FY 01 budget per pupil increased. Eighteen percent of districts with low budgets per pupil and 27 percent of districts with mid-level budgets per pupil participated in consortia, whereas 40 percent of districts with high budgets per pupil did so.
- Finally, the likelihood of participating in consortia varied by FY 01 budget allocation for energy needs. Districts that allocated 1 percent (38 percent) and districts that allocated 2 percent (33 percent) of the budget to energy needs were both more likely to participate than districts that allocated the highest proportion for energy (19 percent).

One way that school districts can offset costs is to charge fees to groups that use school facilities such as meeting rooms, physical fitness facilities or gymnasiums, and auditoriums. During FY 01, 12 percent of districts nationwide instituted or increased fees charged to use school facilities. The likelihood that districts took this action increased with district size, ranging from 9 percent in small districts to 29 percent in large districts. In addition, the likelihood varied by metropolitan status, with 16 percent of suburban districts compared with 8 percent of rural districts taking this action.

The questionnaire asked about one other method to reduce energy expenditures: closing schools or sending students home early on at least one school day. During FY 01, 7 percent of public school districts nationwide used this method. Rural districts (8 percent) were more likely than urban districts (3 percent) to close schools or send students home early.

Districts also were asked to indicate if they were using any of these cost-saving measures in FY 02.[8] Overall, 47 percent of school districts renovated or retrofitted facilities in FY 02 to decrease energy expenditures. As in FY 01, the likelihood that districts renovated or retrofitted facilities in FY 02 increased with district size, ranging from 41 percent of small districts to 74 percent of large districts. In addition, the likelihood of renovating or retrofitting facilities varied by whether the district had budgeted sufficient funds in FY 01 to cover energy needs. Forty percent of districts that had sufficient energy budgets in FY 01 renovated or retrofitted facilities in FY 02, compared with 52 percent of districts that had experienced a shortfall in FY 01.

Forty-four percent of all public school districts locked in rates with one or more energy vendors in FY 02, and the differences by district characteristics seen in FY 01 remained in FY 02:

- Suburban districts (48 percent) and rural districts (42 percent) were more likely to have

[8] Data collection began in November 2001, approximately 4 months after the start of FY 02. Therefore, responses to questions about cost-saving measures in FY 02 reflect district experiences during the first few months of the fiscal year and are not directly comparable to data from FY 00 and FY 01.

taken this action than urban districts (27 percent).

- Districts in the West (18 percent) were least likely to have locked in rates. Thirty-five percent of districts in the Southeast had locked in rates, compared with 55 percent in the Central region and 64 percent in the Northeast.

- Among districts with a poverty concentration of less than 10 percent, 56 percent locked in rates with energy vendors in FY 02. This was a larger proportion than either the proportion of districts with mid-level or high poverty concentrations that locked in rates (43 and 38 percent, respectively).

- Districts with low overall FY 01 budgets per pupil were less likely than other districts to lock in rates for FY 02 (34 versus 45 and 51 percent, respectively).

One-third (33 percent) of public school districts nationwide participated in consortia during FY 02. Midsized districts (42 percent) were more likely to participate in consortia than small districts (31 percent).

Again in FY 02, the proportion of districts participating in consortia differed by metropolitan status and region. One-half (50 percent) of suburban districts participated in consortia, compared with 28 percent of urban districts and 21 percent of rural districts. In addition, a greater percentage of districts in the Northeast (70 percent) participated in consortia than in any other region. Districts in the Southeast and West (10 and 17 percent, respectively) were less likely than districts in the Central region (33 percent) and Northeast to participate in consortia.

Other patterns in the likelihood of participating in consortia that were observed in FY 01 were also detected in FY 02:

- As poverty concentration increased, the likelihood of participating in consortia decreased, ranging from 46 percent of low-poverty districts to 22 percent of high-poverty districts.

- Districts with the highest overall FY 01 budgets per pupil were more likely to participate in consortia than other districts; 23 percent of districts with low budgets per pupil, 31 percent of districts with mid-level budgets per pupil, and 44 percent of districts with high budgets per pupil participated in consortia.

- Forty-one percent of districts that allocated the lowest proportion and 36 percent of districts that allocated 2 percent of the FY 01 budget to energy needs participated in consortia, compared with 25 percent of districts that allocated the highest proportion for energy.

Another measure used to reduce energy expenditures was the institution or increase of fees charged to use school facilities, with 15 percent of districts nationwide taking this step in FY 02. As in FY 01, the likelihood of instituting or increasing fees was related to district size and metropolitan status. In FY 02, the likelihood ranged from 12 percent of small districts to 37 percent of large districts. In addition, rural districts (10 percent) were less likely to use fees as a means of decreasing energy expenses than suburban districts (21 percent). Unlike in FY 01, the use of fees in FY 02 varied by region: 23 percent of districts in the West, compared with 11 percent in both the Southeast and Central regions took this step.

In FY 02, efforts to reduce energy expenditures led 6 percent of public school districts to close schools or send students home early on at least 1 day. Urban districts were less likely than either suburban or rural school districts to take this measure (1 percent compared with 6 and 7 percent, respectively).

3. ENERGY BUDGET SUFFICIENCY AND INSUFFICIENCY IN FISCAL YEAR 2001

Results from the survey provide information about the sufficiency of public school districts' budgets to cover energy expenditures in FY 01. The data address questions such as the following:

- How many districts experienced energy budget surpluses and how many experienced shortfalls in FY 01? How large were the surpluses and shortfalls?
- To what factors did districts attribute energy budget shortfalls?
- How difficult was it for districts with shortfalls to respond to increased energy costs, and why did they find it difficult to respond?

Characteristics of Districts With Sufficient and Insufficient Energy Budgets for FY 01

The questionnaire asked districts to report the total energy budget for FY 01 and the total energy expenditures in that year. As shown in table 4, 61 percent of public school districts experienced a shortfall in the FY 01 energy budget; these districts spent an average of about $653,500 (not shown in tables in text) for energy needs during that year. The mean shortfall among these districts amounted to $25 per pupil. Among the 39 percent of public school districts that had sufficient funds allocated for energy for FY 01, there was an average surplus of $14 per pupil in funds initially budgeted for energy needs.

The likelihood that districts experienced an energy budget shortfall in FY 01 varied by district size, with small districts less likely to have experienced a shortfall than either midsized or large ones (56 percent compared with 72 and 80 percent, respectively). Among the districts that had experienced a shortfall, however, the mean shortfall per pupil was higher in both small and midsized districts than in large districts ($36 and $28 versus $21 per pupil).

The likelihood of a shortfall also varied by metropolitan status and region. Urban school districts were more likely to have insufficient funds than suburban or rural districts (82 percent compared with 60 and 59 percent, respectively). Among these districts, the mean energy shortfall per pupil was lower in suburban ($23 per pupil) than in rural districts ($32 per pupil).

Districts in the Southeast were the most likely to experience a shortfall; 81 percent of districts in the Southeast had insufficient funds, compared with 57 percent in the Northeast, 58 percent in the Central region, and 61 percent in the West. However, the size of district shortfalls in the Central region tended to be higher than in any other region ($35 per pupil, compared with $24 per pupil in both the Northeast and West and $20 per pupil in the Southeast).

Districts with overall FY 01 budgets per pupil in the mid-level range were more likely than those with overall budgets in the high range to have insufficient energy budgets. That is, 65 percent of districts with mid-level overall budgets per pupil for FY 01 had insufficient funds allocated for energy needs, compared to 52 percent of districts with high overall budgets per pupil.

Districts that allocated 3 percent or more of the overall budget to energy needs were less likely to experience a shortfall than districts that allocated less to energy needs. About half (49 percent) of districts that allocated 3 percent or more had insufficient funds to cover energy expenditures, compared with about two-thirds of districts that allocated either 1 percent or less or 2 percent of their overall budget to energy needs (69 and 68 percent, respectively).

Table 4. Percent of public school districts with sufficient energy budgets and the mean energy budget surplus per pupil in fiscal year (FY) 2001, and the percent of public school districts with insufficient energy budgets and the mean energy budget shortfall per pupil in FY 2001, by selected district characteristics: FY 2001

District characteristic	Districts with sufficient energy budgets in FY 2001[1]		Districts with insufficient energy budgets in FY 2001[2]	
	Percent with sufficient energy budgets	Mean energy budget surplus per pupil	Percent with insufficient energy budgets	Mean energy budget shortfall per pupil
Total	39	$14	61	$25
District enrollment in 1999–2000				
1 to 2,499	44	23	56	36
2,500 to 9,999	28	14	72	28
10,000 or more	20	10	80	21
Metropolitan status				
Urban	18	10	82	26
Suburban	40	13	60	23
Rural	41	21	59	32
Region				
Northeast	43	16	57	24
Southeast	19	10	81	20
Central	42	18	58	35
West	39	13	61	24
Poverty concentration[3]				
Less than 10 percent	45	16	55	31
10 to 19 percent	41	13	59	23
20 percent or more	33	14	67	24
Overall fiscal year 2001 budget per pupil				
Low: Less than $6,500	36	12	64	28
Mid-level: $6,500 to $8,999	35	13	65	27
High: $9,000 or more	48	18	52	27
Percent of budget allocated for energy[4]				
1 percent or less	31	7	69	23
2 percent	32	12	68	26
3 percent or more	51	23	49	28

[1]Data are based on the estimated number of regular public school districts with sufficient budgets—5,600. Poverty concentration was missing for 2 cases and overall fiscal year budget per pupil was missing for 1 case in the sample. Those cases were included in the total and in analysis by other district characteristics.

[2]Data are based on the estimated number of regular public school districts with insufficient budgets—8,700. Poverty concentration was missing for 9 cases, overall fiscal year budget per pupil was missing for 2 cases, and budget allocated for energy was missing for 2 cases in the sample. Those cases were included in the totals and in analysis by other district characteristics.

[3]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[4]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

As noted above, the likelihood of an energy budget shortfall varied with district size and percentage of budget allocated for energy. Hence, it follows that the likelihood of an energy budget surplus varied by both of these district characteristics. Small districts were more likely than either midsized or large districts to experience a surplus (44 percent, compared with 28 and 20 percent, respectively). The size of the mean energy budget surplus per pupil was higher among the small districts than among the large districts ($23 versus $10 per pupil).

The proportion of districts that experienced an energy budget surplus was higher among those that allocated 3 percent or more of the budget to energy needs than among those that allocated less to energy: 51 percent, compared with 31 percent of districts that allocated 1 percent or less and 32 percent of districts that allocated 2 percent to energy. The size of the mean energy budget surplus per pupil increased with the percentage of the district budget allocated to energy needs, ranging from $7 per pupil among districts that allocated 1 percent or less to $23 per pupil among districts that allocated 3 percent or more.

Further examination of the relative size of energy budget surpluses and shortfalls revealed few differences by district characteristics (table 5). Using the median surplus and the median shortfall reported on this survey to categorize districts (small surplus/shortfall vs. large surplus/shortfall), comparisons were made by district characteristics. Among districts that had experienced a surplus, only one difference was detected in the size of the surplus: 57 percent of small districts compared with 40 percent of midsized districts experienced a large surplus. Among districts that experienced a shortfall:

- Small districts were more likely than large districts to experience a large shortfall (54 percent versus 37 percent).
- Districts that had allocated 1 percent or less of the overall budget to energy needs were more likely to experience a large shortfall than districts that had allocated a higher proportion of the overall budget to energy needs (67 percent versus 42 and 48 percent, respectively).

Factors Associated With Insufficient Funds for Energy Needs in FY 01

Respondents from the 61 percent of districts that had experienced a shortfall were asked to identify the main reason why the original[9] FY 01 energy budget was insufficient. Table 6 shows the primary factors associated with shortfalls as identified by district respondents: increased unit costs for energy (83 percent), increased need for energy due to adverse weather conditions (8 percent), increased need for energy due to construction (5 percent), and other causes (4 percent).

The likelihood that districts identified increased unit costs of energy as the primary reason for the shortfall varied by district size. Eighty percent of small districts cited increased unit costs, compared with 91 percent of large districts.

The likelihood that districts identified adverse weather as the main reason for the shortfall varied by several district characteristics:

- Small districts (11 percent) were more likely than other districts (3 percent of both midsized and large districts) to cite weather as the main factor.
- Twelve percent of rural districts identified weather as the main reason, compared with 3 percent of urban districts and 4 percent of suburban districts.
- Districts with low overall FY 01 budgets per pupil were less likely to attribute the insufficiency to adverse weather than districts with mid-level budgets per pupil (3 versus 11 percent, respectively).

[9] During pretesting, it was learned that school districts often revise the budget after the start of a fiscal year in response to unexpected occurrences. One example that often led to changes was unforeseen energy expenditures. Therefore, the questionnaire asked about the "original" district budget for energy.

Table 5. Percent of public school districts with budget surpluses and budget shortfalls in fiscal year (FY) 2001, by size and selected district characteristics: FY 2001

District characteristic	Districts with sufficient energy budgets for FY 2001[1]		Districts with insufficient energy budgets for FY 2001[2]	
	Smaller surplus[3]	Larger surplus[4]	Smaller shortfall[3]	Larger shortfall[4]
Total	46	54	49	51
District enrollment in 1999–2000				
1 to 2,499	43	57	46	54
2,500 to 9,999	60	40	56	44
10,000 or more	60	40	63	37
Metropolitan status				
Urban	44	56	52	48
Suburban	50	50	53	47
Rural	43	57	46	54
Region				
Northeast	56	44	51	49
Southeast	68	32	62	38
Central	41	59	49	51
West	42	58	42	58
Poverty concentration[5]				
Less than 10 percent	48	52	47	53
10 to 19 percent	48	52	50	50
20 percent or more	43	57	48	52
Overall fiscal year 2001 budget per pupil				
Low: Less than $6,500	43	57	53	47
Mid-level: $6,500 to $8,999	48	52	46	54
High: $9,000 or more	45	55	51	49
Fiscal year 2001 energy budget sufficiency status[6]				
Sufficient	46	54	†	†
Insufficient	†	†	49	51
Percent of budget allocated for energy[7]				
1 percent or less	52	48	33	67
2 percent	52	48	52	48
3 percent or more	39	61	58	42

† Not applicable.

[1]Data are based on the estimated number of regular public school districts with sufficient budgets—5,600. Poverty concentration was missing for 2 cases and overall fiscal year budget was missing for 1 case in the sample. Those cases were included in the total and in analysis by other district characteristics.

[2]Data are based on the estimated number of regular public school districts with insufficient budgets—8,700. Poverty concentration was missing for 9 cases, overall fiscal year budget per pupil was missing for 2 cases, and budget allocated for energy was missing for 2 cases in the sample. Those cases were included in the totals and in analysis by other district characteristics.

[3]Public school districts classified as having a smaller surplus or smaller shortfall included those districts falling below the median energy budget in sufficiency or insufficiency.

[4]Public school districts classified as having a larger surplus or larger shortfall included those districts with the median energy budget and those above the median energy budget in sufficiency or insufficiency.

[5]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[6]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[7]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

Table 6. Percent of public school districts with insufficient energy budgets for fiscal year (FY) 2001, by primary factors in shortfall and selected district characteristics: FY 2001

District characteristic	Increased per unit cost of energy	Increased amount of energy needed due to adverse weather	Increased amount of energy needed due to construction of new schools	Other
Total	83	8	5	4
District enrollment in 1999–2000				
1 to 2,499	80	11	4	5
2,500 to 9,999	88	3	8	2
10,000 or more	91	3	4	2
Metropolitan status				
Urban	84	3	12	1
Suburban	88	4	5	3
Rural	78	12	4	5
Region				
Northeast	88	4	7	0
Southeast	86	4	5	5
Central	80	11	4	5
West	81	9	6	5
Poverty concentration[1]				
Less than 10 percent	87	7	5	1
10 to 19 percent	81	6	7	6
20 percent or more	80	12	3	5
Overall fiscal year 2001 budget per pupil				
Low: Less than $6,500	85	3	7	6
Mid-level: $6,500 to $8,999	81	11	5	4
High: $9,000 or more	84	10	4	2
Percent of budget allocated for energy[2]				
1 percent or less	88	2	8	3
2 percent	82	10	4	4
3 percent or more	79	10	6	4

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

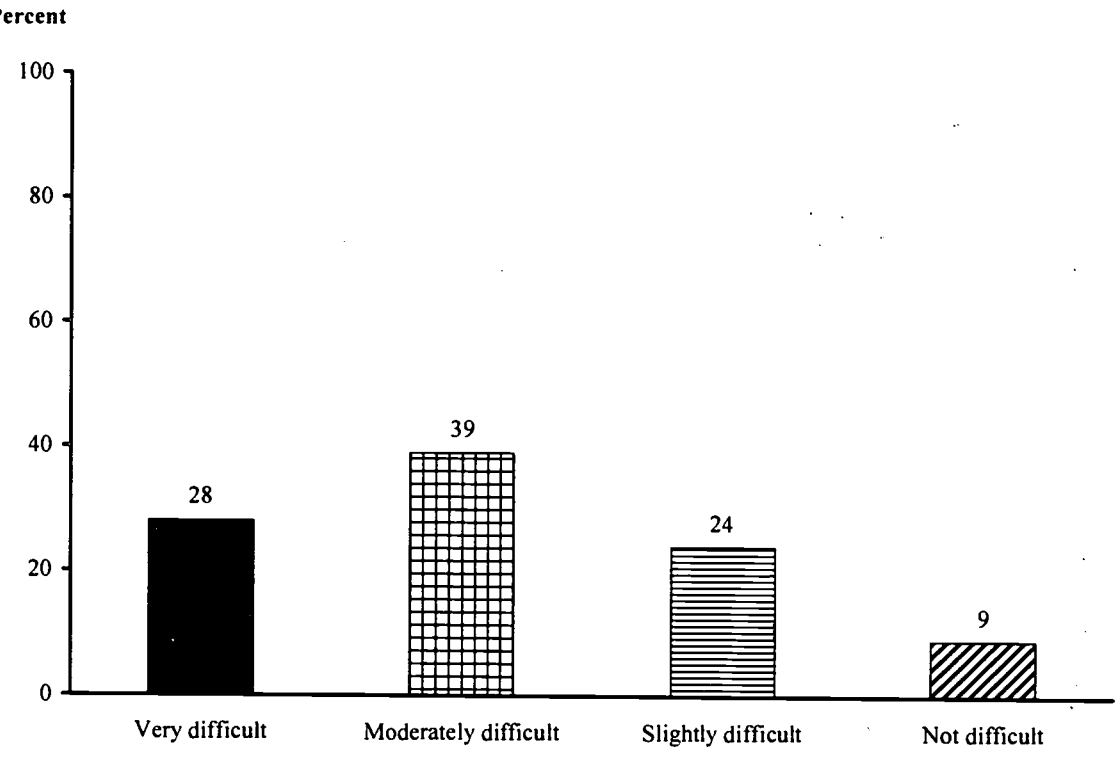
NOTE: Percentages presented in this table are based on the estimated number of regular public school districts with insufficient budgets—8,700. Poverty concentration was missing for 9 cases, overall fiscal year budget per pupil was missing for 2 cases, and budget allocated for energy was missing for 2 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81. 2001.

Level of Difficulty and Reasons for Difficulty in Responding to Increased Energy Costs

The 61 percent of districts that had experienced a shortfall reported various levels of difficulty in responding to increased energy costs in FY 01. Twenty-eight percent indicated that it was very difficult to respond, 39 percent found it moderately difficult, 24 percent reported that it was slightly difficult, and 9 percent said that it was not difficult (figure 2).

Figure 2. Percent of public school districts with insufficient energy budgets for fiscal year (FY) 2001 reporting various levels of difficulty responding to the insufficiency: FY 2001



NOTE: Percentages presented in this figure are based on the estimated number of regular public school districts with insufficient budgets—8,700.

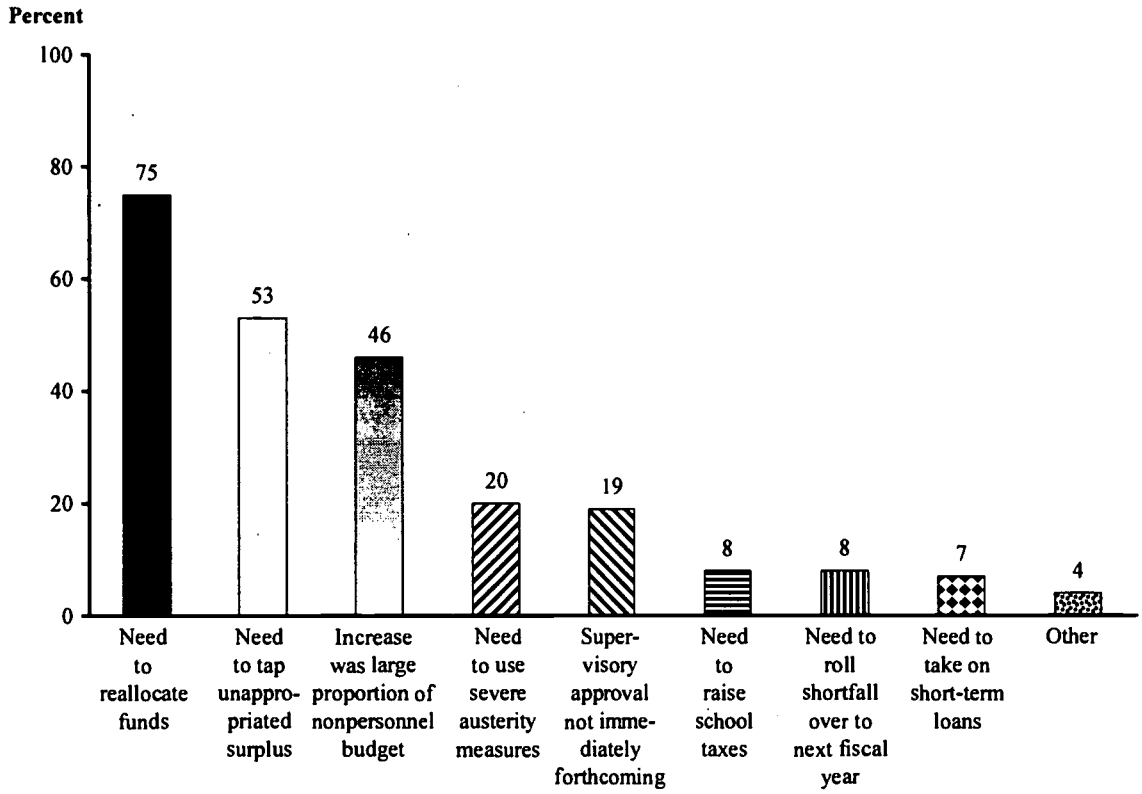
SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

The questionnaire asked districts that had insufficient funds allocated for energy needs to report why responding to increased energy costs was difficult. As shown in figure 3, districts reported various individual reasons or combinations of reasons for the difficulty:

- Three-quarters (75 percent) of the districts that experienced a shortfall were unable to garner additional funds and had to reallocate funds from other programs.
- About half (53 percent) tapped unappropriated surpluses.
- About half (46 percent) used a large proportion of the nonpersonnel budget.

Other reasons why districts found it difficult to respond to increased energy costs included the need to institute severe austerity measures (20 percent), reluctance to approve increases in the level of energy funding by authorities (i.e., administrative approval not immediately forthcoming) (19 percent), the need to raise school taxes (8 percent), the need to roll the shortfall over to the next fiscal year (8 percent), and the need to use short-term loans to finance the shortfall (7 percent). About 4 percent indicated that some other measure had been taken to respond to the situation.

Figure 3. Percent of public school districts with insufficient energy budgets for fiscal year (FY) 2001 reporting various reasons for difficulty responding to the insufficiency: FY 2001



NOTE: Percentages presented in this figure are based on the estimated number of regular public school districts with insufficient budgets—8,700. Respondents were able to select as many answers as applied.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

4. DISTRICT PREPAREDNESS FOR IMMEDIATE AND FUTURE ENERGY NEEDS

In addition to questioning districts about actions taken in the past, the survey asked respondents to indicate the degree to which they believed their districts were prepared for future energy needs. Responses to these questions help answer questions such as the following:

- How successful did district respondents feel their districts had been at reducing their energy usage or energy expenditures?

- To what extent did district respondents feel their districts faced immediate or long-term energy problems? How much did they think increased future energy costs threatened their districts? Did these perceptions vary by district characteristics?

The questionnaire included a series of questions asking respondents the extent to which they agreed or disagreed with five statements. The statements focused on the success of district efforts to reduce energy usage and cost per unit of energy, immediate and long-term energy problems faced by the district, and the threat to district funding posed by future increases in energy costs.

First, respondents were asked how much they agreed or disagreed with the statement "Our district has successfully reduced energy usage." Overall, 42 percent of districts agreed or strongly agreed with this statement (table 7). Respondents from small districts were less likely to agree or strongly agree than respondents from either midsized or large districts (37 versus 53 and 63 percent, respectively). The likelihood that respondents agreed or strongly agreed also varied by region: 53 percent of respondents from districts in the Northeast expressed this view, compared with 34 percent of respondents from districts in the West.

Twenty-nine percent of respondents overall agreed or strongly agreed with the statement "Our district has successfully reduced the cost per unit of energy" (table 8). Respondents from suburban school districts (35 percent) were more likely to express this opinion than were respondents from urban districts (17 percent).

The likelihood that respondents agreed or strongly agreed with the statement also varied by region. A higher proportion of respondents from districts in the Northeast (44 percent) than respondents from districts in the Southeast (22 percent) or West (15 percent) thought that their districts had successfully reduced the cost per unit of energy. Also, the proportion of respondents from districts in the West who agreed or strongly agreed with the statement was lower than the proportion of respondents from districts in the Central region (34 percent) who expressed this view.

The likelihood that respondents agreed or strongly agreed that their districts had successfully reduced the cost per unit of energy varied by overall FY 01 budget per pupil. Twenty-two percent of respondents from districts with low budgets per pupil and 27 percent of respondents from districts with mid-level budgets per pupil agreed or strongly agreed, compared with 39 percent of respondents from districts with high budgets per pupil.

Next, respondents were asked to indicate their level of agreement or disagreement with the statement "Our district has an immediate energy problem." Nineteen percent of respondents agreed or strongly agreed with this statement (table 9). The likelihood that respondents indicated that a problem existed was greater among large districts (33 percent) than among small or midsized districts (18 and 21 percent, respectively).

Table 7. Percent of public school districts agreeing, neither agreeing nor disagreeing, and disagreeing with the statement "Our district has successfully reduced energy usage," by selected district characteristics: Fiscal year 2001

District characteristic	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Total	42	33	25
District enrollment in 1999–2000			
1 to 2,499	37	36	27
2,500 to 9,999	53	25	22
10,000 or more	63	21	16
Metropolitan status			
Urban	42	36	22
Suburban	45	32	22
Rural	39	33	28
Region			
Northeast	53	28	20
Southeast	45	32	22
Central	41	34	24
West	34	35	31
Poverty concentration[1]			
Less than 10 percent	47	32	21
10 to 19 percent	44	36	20
20 percent or more	37	30	33
Overall fiscal year 2001 budget per pupil			
Low: Less than $6,500	44	29	27
Mid-level: $6,500 to $8,999	41	34	25
High: $9,000 or more	41	35	24
Fiscal year 2001 energy budget sufficiency status[2]			
Sufficient	47	32	21
Insufficient	38	34	27
Percent of budget allocated for energy[3]			
1 percent or less	44	31	25
2 percent	46	35	20
3 percent or more	36	33	31

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

Table 8. Percent of public school districts agreeing, neither agreeing nor disagreeing, and disagreeing with the statement "Our district has successfully reduced the cost per unit of energy," by selected district characteristics: Fiscal year 2001

District characteristic	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Total	29	28	43
District enrollment in 1999–2000			
1 to 2,499	28	28	44
2,500 to 9,999	34	27	39
10,000 or more	28	31	41
Metropolitan status			
Urban	17	29	54
Suburban	35	27	38
Rural	26	28	45
Region			
Northeast	44	29	27
Southeast	22	24	53
Central	34	29	37
West	15	26	58
Poverty concentration[1]			
Less than 10 percent	34	32	34
10 to 19 percent	32	29	39
20 percent or more	25	24	51
Overall fiscal year 2001 budget per pupil			
Low: Less than $6,500	22	30	48
Mid-level: $6,500 to $8,999	27	25	48
High: $9,000 or more	39	30	31
Fiscal year 2001 energy budget sufficiency status[2]			
Sufficient	33	31	36
Insufficient	27	26	47
Percent of budget allocated for energy[3]			
1 percent or less	26	33	42
2 percent	35	25	40
3 percent or more	25	28	47

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

Table 9. Percent of public school districts agreeing, neither agreeing nor disagreeing, and disagreeing with the statement "Our district has an immediate energy problem," by selected district characteristics: Fiscal year 2001

District characteristic	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Total	19	37	43
District enrollment in 1999–2000			
1 to 2,499	18	40	43
2,500 to 9,999	21	31	47
10,000 or more	33	31	36
Metropolitan status			
Urban	37	26	36
Suburban	21	32	47
Rural	16	43	41
Region			
Northeast	15	34	51
Southeast	17	28	55
Central	21	33	47
West	21	50	29
Poverty concentration[1]			
Less than 10 percent	15	41	43
10 to 19 percent	19	35	46
20 percent or more	21	39	40
Overall fiscal year 2001 budget per pupil			
Low: Less than $6,500	22	34	44
Mid-level: $6,500 to $8,999	21	37	42
High: $9,000 or more	15	40	45
Fiscal year 2001 energy budget sufficiency status[2]			
Sufficient	14	35	52
Insufficient	23	39	38
Percent of budget allocated for energy[3]			
1 percent or less	22	36	42
2 percent	20	35	45
3 percent or more	18	40	42

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

Respondents from districts with sufficient funds to cover their FY 01 energy expenditures were less likely than respondents from districts without sufficient funds (14 versus 23 percent) to agree or strongly agree with the statement.

Respondents also were asked how much they agreed or disagreed with the statement "Our district has a long-term energy problem." Overall, 37 percent of the respondents agreed or strongly agreed with this statement (table 10). Nearly half (49 percent) of respondents from large districts expressed this view, compared with 37 percent of the respondents from small districts and 34 percent of respondents from midsized districts. Respondents from districts in the West (44 percent) were more likely than respondents from districts in the Southeast (27 percent) to believe that there were long-term problems. Forty-two percent of respondents from districts with insufficient FY 01 energy budgets, compared with 29 percent of respondents from districts with sufficient FY 01 energy budgets, agreed or strongly agreed that their districts had long-term energy problems.

The final statement presented to respondents asked about the effects of hypothetical increases in energy costs on the allocation of district funds. Nearly three-quarters (72 percent) of district respondents agreed or strongly agreed with the statement "Future increases in energy costs pose a major threat to the allocation of district funds to essential areas such as student instruction" (table 11).

Table 10. Percent of public school districts agreeing, neither agreeing nor disagreeing, and disagreeing with the statement "Our district has a long-term energy problem," by selected district characteristics: Fiscal year 2001

District characteristic	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Total	37	31	32
District enrollment in 1999–2000			
1 to 2,499	37	32	31
2,500 to 9,999	34	30	36
10,000 or more	49	27	24
Metropolitan status			
Urban	54	24	22
Suburban	36	29	35
Rural	36	34	30
Region			
Northeast	31	33	36
Southeast	27	38	35
Central	37	27	35
West	44	33	22
Poverty concentration[1]			
Less than 10 percent	33	34	33
10 to 19 percent	40	28	33
20 percent or more	36	35	29
Overall fiscal year 2001 budget per pupil			
Low: Less than $6,500	36	33	31
Mid-level: $6,500 to $8,999	38	31	31
High: $9,000 or more	37	31	32
Fiscal year 2001 energy budget sufficiency status[2]			
Sufficient	29	33	38
Insufficient	42	31	27
Percent of budget allocated for energy[3]			
1 percent or less	40	26	34
2 percent	36	33	32
3 percent or more	36	33	30

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

Table 11. Percent of public school districts agreeing, neither agreeing nor disagreeing, and disagreeing with the statement "Future increases in energy costs pose a major threat to the allocation of district funds to essential areas such as student instruction," by selected district characteristics: Fiscal year 2001

District characteristic	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Total	72	14	14
District enrollment in 1999–2000			
1 to 2,499	72	13	15
2,500 to 9,999	73	17	11
10,000 or more	75	10	15
Metropolitan status			
Urban	81	4	15
Suburban	73	15	12
Rural	70	15	15
Region			
Northeast	63	18	19
Southeast	72	13	15
Central	72	14	15
West	79	12	9
Poverty concentration[1]			
Less than 10 percent	72	16	11
10 to 19 percent	71	16	13
20 percent or more	73	11	15
Overall fiscal year 2001 budget per pupil			
Low: Less than $6,500	72	13	15
Mid-level: $6,500 to $8,999	74	14	12
High: $9,000 or more	70	15	15
Fiscal year 2001 energy budget sufficiency status[2]			
Sufficient	69	15	16
Insufficient	75	13	13
Percent of budget allocated for energy[3]			
1 percent or less	72	15	13
2 percent	72	14	14
3 percent or more	73	13	14

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

5. SUMMARY

To the extent that energy commodities are not predictable in their price volatility, school district budgets are vulnerable to rapid increases in energy commodity costs. School district budgets are often established and approved a full year in advance of actual expenditures, and any item that was budgeted based on a trend line of gradual increases will be underfunded if there is a sharp increase in cost between the time the budget is adopted and the costs are incurred. In the fall of 2001, in response to continuing increases in FY 00 prices for electricity, natural gas, and fuel, there were reports indicating that some school districts reduced or eliminated discretionary busing and extracurricular activities, while others transferred funds from other budget areas to cover energy costs (Moore 2001).

The National Center for Education Statistics undertook this study to examine the effects of energy needs on public schools and to better understand how increases in energy expenditures influence school district budgeting and actions. Although the survey focused primarily on FY 01, the questionnaire also gathered data on FY 00 energy expenditures and budgeted FY 02 energy expenditures to understand the financial resources available to districts.

Results from the survey provide information on the overall and per pupil energy budget and expenditures of public school districts nationwide. For example, in FY 00, school districts spent an average of $137 per pupil on energy expenditures (table 2). For FY 01, although districts increased their energy budgets over prior year expenditures by 11 percent, they still experienced a 9 percent shortfall between their budgeted and actual energy expenditures. Nationwide, public school districts spent nearly $8 billion for energy in FY 01 (table 1).

Sixty-one percent of public school districts experienced insufficient energy budgets in FY 01 (table 4). These districts spent an average of about $653,500 (not shown in tables in text) for energy needs, and they experienced an average shortfall of 15 percent (table 2). They budgeted $143 per pupil and actually spent $169 per pupil, i.e., $25 per pupil more than anticipated.

Most (83 percent) of the districts that had allocated insufficient funds to cover energy expenses in FY 01 attributed the shortfall primarily to increases in the cost per unit of energy; 8 percent attributed it to adverse weather conditions (table 6). Three-quarters (75 percent) of the districts that had a shortfall reallocated funds from other programs, 53 percent tapped unappropriated surpluses, and 46 percent used a large proportion of the nonpersonnel budget to cover some energy costs (figure 3).

School districts with sufficient energy budgets for FY 01 had actual per pupil expenditures in FY 01 of $160 per pupil, 14 percent higher than they had been in FY 00 (table 2). These districts, which had increased their FY 01 energy budgets per pupil 24 percent beyond their FY 00 expenditures, experienced a 9 percent surplus between what they had budgeted for FY 01 and their actual expenditures. Their actual expenditures of $160 per pupil were $14 per pupil less than they had anticipated.

For FY 02, districts nationwide budgeted more than $8 billion for energy needs (table 1), that is, $176 per pupil (table 2). On average, there was a greater percentage increase in the mean energy budget per pupil from FY 01 to FY 02 among districts that had experienced a shortfall in FY 01 than among districts that had sufficient energy funds in FY 01 (20 percent versus 6 percent, respectively). The difference between the FY 01 mean energy expenditure per pupil and FY 02 mean energy budget per pupil also varied by FY 01 energy budget sufficiency status. Districts that had experienced an energy budget shortfall in FY 01 instituted FY 02 energy budgets per pupil that were, on average, 2 percent higher than the FY 01 mean energy expenditure per pupil. Districts that had sufficient funds allocated for FY 01 energy

needs instituted FY 02 mean energy budgets per pupil that were, on average, 15 percent higher than the FY 01 expenditures per pupil.

School districts took various measures to reduce energy needs and expenditures in FY 02 (table 3). Forty-seven percent of districts nationwide renovated or retrofitted existing facilities, 44 percent locked in rates with one or more energy vendors, 33 percent participated in consortia that negotiated prices with third-party energy vendors, 15 percent instituted or increased fees to use facilities, and 6 percent closed schools or sent students home early on at least 1 day.

Survey respondents were asked to report their opinion on how successfully their districts had prepared for future energy expenditures.

- Forty-two percent of respondents nationwide agreed with the statement "Our district has successfully reduced energy usage" (table 7).
- When asked to react to the statement "Our district has successfully reduced cost per unit of energy," 29 percent of respondents agreed (table 8).
- Nineteen percent of respondents agreed that their district had an immediate energy problem (table 9), and 37 percent agreed that their district had a long-term energy problem (table 10).
- Nearly three-quarters (72 percent) agreed with the statement "Future increases in energy costs pose a major threat to the allocation of district funds to essential areas such as student instruction" (table 11).

REFERENCES

Agron, J. (2001). Energy Costs Overheat School Budgets. *American School and University, 73* (9).

Joskow, P.L. (2002). U.S. Energy Policy During the 1990s. *Current History, 101* (653).

Klemmer, K.A., and Kelley, J.L. (1998). Comparing PPI Energy Indexes to Alternative Data Sources. *Monthly Labor Review, 121* (12): 33–41. U.S. Department of Labor. Washington, DC: Bureau of Labor Statistics.

Lewis, L., Snow, K., Farris, E., Smerdon, B., Cronen, S., and Kaplan, J. (2000). *Condition of America's Public School Facilities: 1999* (NCES 2000–032). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Moore, D.P. (2001). Utilities Expenditure Report. *School Planning & Management, 40* (11): 17.

School Bus Information Council. (2002). Available: http://www.schoolbusinfo.org/keystats.htm

Snyder, T.D., and Hoffman, C.M. (2002). *Digest of Education Statistics, 2001* (NCES 2002–130). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Snyders, W.F. (2001). Producer Prices in 2000: Energy Goods Continue to Climb. *Monthly Labor Review, 124* (7): 25–36. U.S. Department of Labor. Washington, DC: Bureau of Labor Statistics.

U.S. Department of Energy. (1999). *A Look at Building Activities in the 1999 Commercial Buildings Energy Consumption Survey.* Available: http://www.eia.doe.gov/emeu/cbecs/pba99/intro.html

U.S. Department of Labor. (2002a). Producer Price Index-Commodities, series WPSSOP3510, seasonally adjusted, 1992–2002. Washington, DC: Bureau of Labor Statistics.

U.S. Department of Labor. (2002b). A Note on Seasonally Adjusted and Unadjusted Data. *News.* 19 July. Washington, DC: Bureau of Labor Statistics.

Weston, S.P., Harmer, W.G., and Guthrie, J.W. (1989). *Making Sense of School Budgets: A Citizen's Guide to Local Public Education Spending.* Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, Programs for the Improvement of Practice.

Wilson, T. (2002). Consumer Inflation Lower in 2001: Energy and Apparel Prices Declined. *Monthly Labor Review*, 41–45. U.S. Department of Labor. Washington, DC: Bureau of Labor Statistics.

Appendix A

Survey Methodology

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Fast Response Survey System

The Fast Response Survey System (FRSS) was established in 1975 by the National Center for Education Statistics (NCES), U.S. Department of Education. FRSS collects data from state education agencies, local education agencies, public and private elementary and secondary schools, public school teachers, and public libraries. It is designed to collect small amounts of issue-oriented data with minimal burden on respondents and within a relatively short timeframe. Surveys are generally limited to three pages of questions, with a response burden of about 30 minutes per respondent. Sample sizes are relatively small (usually about 1,000 to 1,500 respondents per survey) so that data collection can be completed quickly. Data are weighted to produce national estimates of the sampled education sector. The sample size permits limited breakouts by classification variables. However, as the number of categories within the classification variables increases, the sample size within categories decreases, which results in larger sampling errors for the breakouts by classification variables.

Sample Selection

The sample for the FRSS survey on the effects of energy needs and expenditures on U.S. public schools consisted of 1,000 regular public school districts in the 50 states and the District of Columbia. The sample was selected from the 1999–2000 NCES Common Core of Data (CCD) Local Education Agency Universe (LEA) file. The initial sampling frame consisted of almost 17,000 district records. This was reduced to include only those districts that met all of the following conditions:

- The district was a local school district that was not a component of a supervisory union or a local school district component of a supervisory union sharing superintendent and administrative services with other local school districts (these are called "regular" school districts by NCES and CCD).
- The district had not closed since the 1998–99 CCD report.
- The district had at least one student enrolled according to the 1999–2000 CCD report.
- The district was located within the United States (all districts in outlying territories were excluded).

The district sampling frame was stratified by district size (less than 1,000, 1,000 to 2,499, 2,500 to 9,999, 10,000 to 99,999, and 100,000 or more), metropolitan status (urban, suburban, rural), region (Northeast, Southeast, Central, West), and poverty concentration[10] (less than 10 percent, 10 to 19 percent, 20 to 29 percent, and 30 percent or more). After the stratum sample sizes were determined, a sample of 1,000 districts was selected systematically from the sorted file using independent random starts.

Respondents and Response Rates

Questionnaires and cover letters were mailed in early November 2001. The cover letter indicated that the survey was designed to be completed by the district chief financial officer (CFO) or other person in the district who was most knowledgeable about the requested information on energy needs and expenditures. The respondent section on the front of the questionnaire indicated that 55 percent of the questionnaires were completed by CFOs, 28 percent were completed by district superintendents or assistant superintendents, 12 percent were completed by district facilities managers, and 5 percent were completed by others.

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[10] Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the Bureau of the Census and contained in "U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) Small Area Income and Poverty Estimates, Title I Eligibility Database, 1999." The No Child Left Behind Act of 2001 directs the Department of Education to distribute Title I basic and concentration grants directly to school districts on the basis of the most recent estimates of children in poverty. For income year 1999, estimates were derived for districts according to their 2001–02 boundaries based on Census 2000 data and model-based estimates of poverty for all counties. For detailed information on the methodology used to create these estimates, please refer to www.census.gov/hhes/www/saipe.html.

Telephone followup was conducted from late November 2001 through February 2002 with districts that did not respond to the initial questionnaire mailing. Of the 1,000 districts selected for the sample, 4 were found to be out of the scope of the survey. This left a total of 996 eligible districts in the sample. Completed questionnaires were received for 851 districts, or 85 percent of the eligible districts (table A-1). The weighted response rate was 84 percent. Weighted item nonresponse rates for individual questionnaire items ranged from 0 to 2 percent.[11] Imputation for item nonresponse was not implemented.

Table A-1. Unweighted and weighted response rates and standard errors, by selected district characteristics

District characteristic	Unweighted estimates		Weighted estimates[1]	
	Response rate	Standard error	Response rate	Standard error
Total	85.4	1.12	84.4	1.27
District enrollment in 1999–2000				
1 to 2,499	85.8	1.66	84.4	1.78
2,500 to 9,999	83.2	2.05	83.2	2.15
10,000 or more	88.1	2.19	88.1	2.37
Metropolitan status				
Urban	84.4	3.23	78.9	5.36
Suburban	84.3	1.65	82.9	1.99
Rural	87.3	1.72	86.2	1.94
Region				
Northeast	83.3	2.59	81.7	3.24
Southeast	91.1	2.21	91.6	2.16
Central	84.6	2.01	84.8	2.24
West	84.7	2.11	83.2	2.72
Poverty concentration[2]				
Less than 10 percent	83.6	2.13	83.5	2.65
10 to 19 percent	84.9	1.88	82.1	2.55
20 percent or more	88.8	1.79	89.6	2.02

[1]The base weight was used to determine the weighted response rates.

[2]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

NOTE: Data for poverty concentration were missing for 11 cases. No imputation was performed in cases where information on poverty concentration was missing. Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

[11]The base weight was used to determine the weighted item nonresponse rates.

Sampling and Nonsampling Errors

The responses were weighted to produce national estimates (table A-2). The weights were designed to adjust for the variable probabilities of selection and differential nonresponse. The findings in this report are estimates based on the sample selected and, consequently, are subject to sampling variability.

The survey estimates are also subject to nonsampling errors that can arise because of nonobservation (nonresponse or noncoverage) errors, errors of reporting, and errors made in data collection. These errors can sometimes bias the data. Nonsampling errors may include such problems as misrecording of responses; incorrect editing, coding, and data entry; differences related to the particular time the survey was conducted; or errors in data preparation. While general sampling theory can be used in part to determine how to estimate the sampling variability of a statistic, nonsampling errors are not easy to measure and, for measurement purposes, usually require that an experiment be conducted as part of the data collection process or that data external to the study be used.

To minimize the potential for nonsampling errors, the questionnaire was pretested with respondents similar to those who completed the survey. During the design of the survey and the survey pretest, an effort was made to check for consistency of interpretation of questions and to eliminate ambiguous items. The questionnaire and instructions were extensively reviewed by the National Center for Education Statistics. Manual and machine editing of the questionnaire responses were conducted to check the data for accuracy and consistency. Cases with missing or inconsistent items were recontacted by telephone. Data were keyed with 100 percent verification.

Variances

The standard error is a measure of the variability of estimates due to sampling. It indicates the variability of a sample estimate that would be obtained from all possible samples of a given design and size. Standard errors are used as a measure of the precision expected from a particular sample. If all possible samples were surveyed under similar conditions, intervals of 1.96 standard errors below to 1.96 standard errors above a particular statistic would include the true population parameter being estimated in about 95 percent of the samples. This is a 95 percent confidence interval. For example, the estimated percentage of districts that locked in rates with one or more energy providers during fiscal year 2001 is 39.1 percent, and the estimated standard error is 2.3 percent. The 95 percent confidence interval for the statistic extends from [39.1 – (2.3 times 1.96)] to [39.1 + (2.3 times 1.96)], or from 34.6 to 43.6 percent. Tables of standard errors for each table and figure in the report are provided in appendix B.

Estimates of standard errors were computed using a technique known as jackknife replication. As with any replication method, jackknife replication involves constructing a number of subsamples (replicates) from the full sample and computing the statistic of interest for each replicate. The mean square error of the replicate estimates around the full sample estimate provides an estimate of the variances of the statistics. To construct the replications, 50 stratified subsamples of the full sample were created and then dropped individually to define 50 jackknife replicates. A computer program (WesVarPC) was used to calculate the estimates of standard errors.

The test statistics used in the analysis were calculated using the jackknife variances and thus appropriately reflected the complex nature of the sample design. In particular, an adjusted chi-square test using Satterthwaite's approximation to the design effect was used in the analysis of the two-way tables. Finally, Bonferroni adjustments were made to control for multiple comparisons where appropriate. For example, for an "experiment-wise" comparison involving g pairwise comparisons, each difference was tested at the 0.05/g significance level to control for the fact that g differences were simultaneously tested. The Bonferroni adjustment results in a more conservative critical value being used when

Table A-2. Number and percent of responding public school districts in the study sample and estimated number and percent of public school districts the sample represents, by selected district characteristics

District characteristic	Respondent sample		National estimate	
	Number	Percent	Number	Percent
Total	851	100	14,423	100
District enrollment in 1999–2000				
1 to 2,499	380	45	10,513	73
2,500 to 9,999	278	33	3,090	21
10,000 or more	193	23	820	6
Metropolitan status				
Urban	108	13	912	6
Suburban	413	49	5,916	41
Rural	330	39	7,595	53
Region				
Northeast	174	20	2,909	20
Southeast	153	18	1,567	11
Central	275	32	5,770	40
West	249	29	4,176	29
Poverty concentration[1]				
Less than 10 percent	254	30	4,114	29
10 to 19 percent	309	36	5,221	36
20 percent or more	277	33	4,591	32
Overall fiscal year 2001 budget per pupil				
Low: Less than $6,500	258	30	3,768	26
Mid-level: $6,500 to $8,999	355	42	6,175	43
High: $9,000 or more	235	28	4,413	31
Fiscal year 2001 energy budget sufficiency status[2]				
Sufficient	274	32	5,572	39
Insufficient	569	67	8,734	61
Percent of budget allocated for energy[3]				
1 percent or less	179	21	2,789	19
2 percent	397	47	6,150	43
3 percent or more	265	31	5,316	37

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Detail may not sum to totals because of rounding. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. These cases were included in the totals and in the analysis by other district characteristics. Detail may not sum to totals because of rounding. In addition, no imputation was performed in cases where information on district characteristics was missing. Estimated totals using nonimputed data implicitly impute a zero value for all missing data. These zero implicit imputations will mean that the estimates of total will underestimate the true population totals. Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

judging statistical significance. This means that comparisons that would have been significant with a critical value of 1.96 may not be significant with the more conservative critical value. For example, the critical value for comparisons between any two of the four regions is 2.64, rather than 1.96. This means that there must be a larger difference between the estimates being compared to detect a statistically significant difference.

However, the information presented in table 2 is complicated by the presence of a small amount of missing data. For example, the mean energy expenditures per pupil for FY 2000 are based on the 841 cases where we have total expenditure and enrollment figures for FY 2000. Similarly, the mean energy expenditures for FY 2001 are based on the 847 cases where we have total expenditure and enrollment figures for FY 2001. The same procedures were used for mean energy budgets per pupil for FY 2001 and FY 2002.

Although the amount of missing data for each year was relatively small, when 2 years were paired for difference calculations, the resulting N was smaller than for each year separately. If the differences were calculated only on data from districts that provided complete information, the differences in some instances would not be identical to the arithmetic differences calculated from the ratios in the table. This discrepancy, though trivial, might be confusing.

Definitions of Analysis Variables

District enrollment in 1999–2000 — Total number of students enrolled during the 1999–2000 school year, as indicated in the 1999–2000 CCD file:

1 to 2,499
2,500 to 9,999
10,000 or more

Metropolitan status — As defined in the 1999–2000 Common Core of Data (CCD):

Urban – a large or midsized central city of a Metropolitan Statistical Area (MSA)

Suburban – serves a noncentral city of an MSA

Rural – serves a non-MSA

Geographic region — One of four regions used by the Bureau of Economic Analysis of the U.S. Department of Commerce, the National Assessment of Educational Progress, and the National Education Association. Obtained from the 1999–2000 CCD.

Northeast – Connecticut, District of Columbia, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont

Southeast – Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia

Central – Iowa, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, North Dakota, Nebraska, Ohio, South Dakota, and Wisconsin

West – Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, New Mexico, Nevada, Oklahoma, Oregon, Texas, Utah, Washington, and Wyoming

Poverty concentration — Poverty estimates for school districts were based on Title I data provided to the U.S. Department of Education by the Bureau of the Census and contained in "U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS) Small Area Income and Poverty Estimates, Title I Eligibility Database, 1999." The No Child Left Behind Act of 2001 directs the Department of Education to distribute Title I basic and concentration grants directly to school districts on the basis of the most recent estimates of children in poverty. For income year 1999, estimates were derived for districts according to their 2001–02 boundaries based on Census 2000 data and model-based estimates of poverty for all counties. For detailed information on the methodology used to create

these estimates, please refer to www.census.gov/hhes/www/saipe.html. This item served as a measurement of the concentration of poverty in the district. Data were missing for 11 cases in the sample.

Less than 10 percent
10 to 19 percent
20 percent or more

Overall fiscal year 2001 budget per pupil — This was based on responses to question 1b (overall budget for fiscal year 2001) and question 8a (district enrollment as of October 1, 2000). Data were missing for three cases in the sample. The questionnaire defined overall budget as including amounts for all programs and activities conducted by the district such as the general operating funds, physical plant and equipment repair, construction, capital outlay, student activities, cafeteria and food service, transportation, federal programs such as Title I, and insurance/liability.

Low – Less than $6,500
Mid-level – $6,500 to $8,999
High – $9,000 or more

Fiscal year 2001 energy budget sufficiency status — This was based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Data were missing for eight cases in the sample.

Sufficient – FY 01 budget for energy was equal to or greater than FY 01 energy expenditures

Insufficient – FY 01 budget for energy was less than FY 01 energy expenditures

Percent of budget allocated for energy — This was based on responses to question 1b (overall budget for FY 01) and 2d, part 1 (FY 01 budgeted energy expenditures). Data were missing for 10 cases in the sample.

1 percent or less – includes districts that allocated less than 1.5 percent for energy

2 percent – includes those that allocated from 1.5 percent to less than 2.5 percent for energy

3 percent or more – includes those that allocated 2.5 percent or more for energy

It is important to note that many of the school characteristics used for independent analyses are related to each other. For example, district enrollment in 1999–2000 and region are related, with districts in the Southeast typically being larger than districts in other regions. Relationships also exist between other analysis variables, such as enrollment size and region, metropolitan status and poverty concentration, and per pupil expenditure and percent of budget allocated for energy. Because of the relatively small sample size used in this study, it is difficult to separate the independent effects of these variables. Their existence, however, should be considered in the interpretation of the data presented in this report.

Definitions of Other Created Variables Used in the Analysis

Mean energy expenditure per pupil — The mean energy expenditure per pupil in FY 00 and FY 01 were calculated using the mean energy expenditure in FY 00 and FY 01, and district enrollment during the 2000–2001 school year. Districts were asked to report enrollment for the 2000–2001 school year, but not for the 1999–2000 school year (the timeframe corresponding to FY 00). Therefore, the enrollment during the 2000–2001 school year was used to estimate the mean energy expenditure per pupil in FY 00.

Change in mean energy expenditure per pupil — The percentage change in mean energy expenditure per pupil from FY 00 to FY 01 was calculated using the mean energy expenditure per pupil calculated in each year, and is based on cases for which data from both years were available.

Mean energy budget per pupil — The mean energy budget per pupil for FY 01 and FY 02 were calculated using the mean energy budget for FY 01 and FY 02, and district enrollment during the

2000–2001 and 2001–02 school years, respectively.

Change in mean energy budget per pupil —The percentage change in mean energy budget per pupil from FY 01 to FY 02 was calculated using the mean energy budget per pupil calculated for each year, and is based on cases for which data from both years were available.

Small/large surplus — A small surplus was defined as an energy budget surplus below the median surplus ($7 per student) among districts that had sufficient funds allocated for energy in FY 01. A large surplus was defined as an energy budget surplus at or above the median surplus.

Small/large shortfall — A small shortfall was defined as an energy budget shortfall below the median surplus ($18 per student) among districts that had insufficient funds allocated for energy in FY 01. A large shortfall was defined as an energy budget shortfall at or above the median shortfall.

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Appendix B

Standard Error Tables

Table of Contents for Standard Error Tables

Table of Contents for Standard Error Tables (continued)

Table B-1. Standard errors for table 1: Total public school district fiscal year (FY) 2000 and FY 2001 energy expenditures and FY 2001 and FY 2002 energy budgets as reported in FY 2002, by selected district characteristics: FY 2000 to FY 2002

District characteristic	Energy expenditures in FY 2000 (in thousands of dollars)	Energy budgets for FY 2001 (in thousands of dollars)	Energy expenditures in FY 2001 (in thousands of dollars)	Energy budgets for FY 2002 (in thousands of dollars)
Total	173,247	197,605	209,248	205,156
District enrollment in 1999–2000				
1 to 2,499	48,431	61,635	63,059	61,906
2,500 to 9,999	63,888	76,061	76,567	87,280
10,000 or more	135,026	143,559	161,109	158,420
Metropolitan status				
Urban	130,773	135,047	158,735	157,898
Suburban	122,900	130,326	144,630	139,853
Rural	58,435	67,261	65,971	76,282
Region				
Northeast	132,783	130,463	145,120	141,423
Southeast	98,344	108,499	120,841	111,887
Central	92,170	104,357	119,381	116,242
West	160,253	178,101	195,500	206,254
Poverty concentration[1]				
Less than 10 percent	105,077	109,260	124,031	114,923
10 to 19 percent	83,740	92,253	91,384	99,280
20 percent or more	105,438	115,869	128,749	135,712
Overall fiscal year 2001 budget per pupil				
Low: Less than $6,500	145,013	162,221	176,680	177,689
Mid-level: $6,500 to $8,999	165,769	177,334	195,411	204,107
High: $9,000 or more	130,137	138,584	155,710	161,329
Fiscal year 2001 energy budget sufficiency status[2]				
Sufficient	146,946	175,883	161,803	186,530
Insufficient	165,578	186,523	211,100	201,528
Percent of budget allocated for energy[3]				
1 percent or less	110,236	120,616	144,097	151,778
2 percent	153,965	167,475	180,765	191,051
3 percent or more	179,715	208,288	222,418	226,727

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Numbers presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. Detail may not sum to totals because of rounding. In addition, no imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Estimated totals using nonimputed data implicitly impute a zero value for all missing data. These zero implicit imputations will mean that the estimates of totals will underestimate the true population totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 2001.

Table B-2. Standard errors for table 2: Mean energy expenditures per pupil of public school districts in fiscal year (FY) 2000 and FY 2001, mean energy budgets per pupil of public school districts in FY 2001 and FY 2002, and percentage difference between various years, by selected district characteristics: FY 2000 to FY 2002

District characteristic	Mean energy expenditures per pupil FY 2000 and FY 2001			Mean energy budgets per pupil FY 2001 and FY 2002			Other percent differences per pupil		
	FY 2000	FY 2001	Percent difference	FY 2001	FY 2002	Percent difference	Energy expenditures in FY 2000 and energy budgets for FY 2001	Energy expenditures in FY 2001 and energy budgets for FY 2001	Energy expenditures in FY 2001 and energy budgets for FY 2002
Total	1.7	2.1	0.7	2.1	2.2	0.9	0.6	0.8	0.8
District enrollment in 1999–2000									
1 to 2,499	3.7	5.4	1.4	5.5	4.7	1.4	0.9	1.6	1.1
2,500 to 9,999	4.0	4.5	1.1	4.4	5.1	1.4	1.3	1.4	1.4
10,000 or more	2.1	2.8	1.0	2.3	2.2	1.3	0.9	1.0	1.2
Metropolitan status									
Urban	3.8	4.7	1.4	3.9	4.1	2.1	1.7	1.8	1.8
Suburban	2.3	3.0	1.1	2.6	2.8	0.9	0.9	1.0	0.9
Rural	3.7	4.6	1.4	5.5	5.0	1.5	1.2	1.7	1.2
Region									
Northeast	4.6	5.5	2.1	4.8	5.7	1.5	1.5	1.6	1.3
Southeast	2.4	3.1	1.2	2.8	2.7	1.4	1.3	1.3	1.3
Central	3.0	3.7	1.4	4.2	4.3	1.3	1.3	1.8	1.4
West	2.8	3.5	1.0	3.5	3.1	1.7	1.2	1.1	1.5
Poverty concentration[1]									
Less than 10 percent	3.0	4.0	1.5	3.6	4.2	1.5	1.2	1.6	1.3
10 to 19 percent	2.5	2.8	1.1	2.9	2.9	1.4	1.1	1.2	1.1
20 percent or more	2.9	3.5	1.1	3.5	3.4	1.4	1.1	1.3	1.5
Overall fiscal year 2001 budget per pupil									
Low: Less than $6,500	3.4	4.2	1.0	3.9	3.9	1.7	1.3	1.4	1.7
Mid-level: $6,500 to $8,999	2.5	3.2	1.2	2.8	3.2	1.5	1.0	1.3	1.4
High: $9,000 or more	3.5	3.8	1.5	4.1	4.1	1.2	1.2	1.7	1.2
Fiscal year 2001 energy budget sufficiency status[2]									
Sufficient	3.8	4.6	1.2	5.1	5.3	0.9	1.5	0.7	1.2
Insufficient	2.0	2.6	0.8	2.3	2.5	1.3	0.7	0.8	0.9
Percent of budget allocated for energy[3]									
1 percent or less	2.0	3.0	1.4	2.4	2.8	1.7	0.9	1.5	1.4
2 percent	2.2	2.5	0.9	2.6	2.9	1.2	1.0	1.0	1.2
3 percent or more	4.8	6.2	1.2	6.2	6.8	1.0	1.0	1.3	1.4

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures).

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Numbers presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 20011.

Table B-3. Standard errors for table 3: Percent of public school districts using various measures to reduce energy expenditures, by selected district characteristics: Fiscal years 2001 and 2002

District characteristic	Measures taken in fiscal year 2001[1]				
	Renovated/ retrofitted facilities	Locked in rates	Participated in consortia	Instituted/ increased fees to use facilities	Closed schools/ sent students home early
Total	2.0	2.3	1.8	1.1	1.0
District enrollment in 1999–2000					
1 to 2,499	2.6	2.9	2.2	1.5	1.4
2,500 to 9,999	2.9	3.2	3.0	2.2	1.6
10,000 or more	3.5	3.5	3.4	3.5	1.8
Metropolitan status					
Urban	7.3	3.9	5.4	3.2	1.7
Suburban	3.2	3.2	3.0	2.2	1.6
Rural	2.5	3.1	2.0	1.6	1.7
Region					
Northeast	5.2	4.1	4.6	2.8	1.9
Southeast	4.8	4.9	2.3	2.7	3.0
Central	3.8	3.9	3.3	1.8	1.6
West	3.7	2.4	2.3	2.5	2.1
Poverty concentration[2]					
Less than 10 percent	3.6	3.6	3.2	3.0	2.0
10 to 19 percent	3.6	4.0	3.1	1.9	1.6
20 percent or more	3.2	3.1	2.3	2.1	2.6
Overall fiscal year 2001 budget per pupil					
Low: Less than $6,500	3.6	3.4	2.7	2.8	2.0
Mid-level: $6,500 to $8,999	2.8	3.4	2.7	1.8	1.7
High: $9,000 or more	4.4	4.0	3.2	2.6	1.8
Fiscal year 2001 energy budget sufficiency status[3]					
Sufficient	3.5	3.5	2.6	2.0	2.0
Insufficient	2.4	3.0	2.4	1.4	1.3
Percent of budget allocated for energy[4]					
1 percent or less	5.3	5.2	5.4	2.1	2.5
2 percent	2.6	3.5	2.8	2.0	1.7
3 percent or more	4.0	3.7	2.3	2.1	1.9

See notes at end of table.

Table B-3. Standard errors for table 3: Percent of public school districts using various measures to reduce energy expenditures, by selected district characteristics: Fiscal years 2001 and 2002—Continued

District characteristic	Measures taken in fiscal year 2002[1]				
	Renovated/ retrofitted facilities	Locked in rates	Participated in consortia	Instituted/ increased fees to use facilities	Closed schools/ sent students home early
Total	2.0	1.9	1.8	1.2	0.9
District enrollment in 1999–2000					
1 to 2,499	2.4	2.5	2.4	1.7	1.2
2,500 to 9,999	3.1	3.4	3.1	2.4	1.3
10,000 or more	3.0	3.7	3.5	3.6	1.5
Metropolitan status					
Urban	8.0	5.3	5.5	5.1	0.6
Suburban	2.9	2.9	3.0	2.6	1.6
Rural	2.7	2.8	2.3	1.5	1.5
Region					
Northeast	4.3	4.0	3.9	3.1	2.0
Southeast	4.8	4.8	2.3	2.7	2.7
Central	3.3	3.3	3.5	1.9	1.6
West	3.9	3.1	3.0	3.0	2.0
Poverty concentration[2]					
Less than 10 percent	3.7	3.2	3.3	3.4	1.9
10 to 19 percent	3.7	3.8	3.4	2.1	1.4
20 percent or more	3.8	2.9	2.4	2.2	2.1
Overall fiscal year 2001 budget per pupil					
Low: Less than $6,500	3.8	3.1	2.7	3.1	2.0
Mid-level: $6,500 to $8,999	3.0	3.3	2.8	2.3	1.6
High: $9,000 or more	4.4	3.9	3.4	2.9	1.5
Fiscal year 2001 energy budget sufficiency status[3]					
Sufficient	3.3	3.6	3.1	2.2	1.8
Insufficient	2.6	2.5	2.4	1.7	1.2
Percent of budget allocated for energy[4]					
1 percent or less	5.0	4.7	5.4	3.2	2.0
2 percent	3.0	3.6	2.9	2.3	1.7
3 percent or more	3.6	3.5	2.5	2.4	1.8

[1]Data reflect measures that were taken during the first half of FY 02 or that were anticipated during the fiscal year, since data collection was completed before the end of the fiscal year.

[2]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[3]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[4]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 20011.

Table B-4. Standard errors for table 4: Percent of public school districts with sufficient energy budgets and the mean energy budget surplus per pupil in fiscal year (FY) 2001, and the percent of public school districts with insufficient energy budgets and the mean energy budget shortfall per pupil in FY 2001, by selected district characteristics: FY 2001

District characteristic	Districts with sufficient energy budgets in FY 2001[1]		Districts with insufficient energy budgets in FY 2001[2]	
	Percent with sufficient energy budgets	Mean energy budget surplus per pupil	Percent with insufficient energy budgets	Mean energy budget shortfall per pupil
Total	2.4	1.3	2.4	1.1
District enrollment in 1999–2000				
1 to 2,499	3.2	3.2	3.2	2.4
2,500 to 9,999	2.3	2.5	2.3	2.1
10,000 or more	3.0	1.7	3.0	1.4
Metropolitan status				
Urban	5.4	2.5	5.4	2.6
Suburban	3.2	1.6	3.2	1.3
Rural	3.3	3.6	3.3	2.4
Region				
Northeast	5.2	3.7	5.2	2.4
Southeast	3.6	2.4	3.6	1.3
Central	4.5	3.5	4.5	2.1
West	3.4	2.0	3.4	1.9
Poverty concentration[3]				
Less than 10 percent	3.7	2.5	3.7	2.5
10 to 19 percent	3.8	1.7	3.8	1.6
20 percent or more	3.5	2.6	3.5	1.5
Overall fiscal year 2001 budget per pupil				
Low: Less than $6,500	3.8	2.4	3.8	1.6
Mid-level: $6,500 to $8,999	3.0	1.5	3.0	2.0
High: $9,000 or more	4.3	3.3	4.3	2.1
Percent of budget allocated for energy[4]				
1 percent or less	5.1	1.2	5.1	1.8
2 percent	3.1	1.7	3.1	1.6
3 percent or more	3.4	3.6	3.4	2.7

[1]Data are based on the estimated number of regular public school districts with sufficient budgets—5,600. Poverty concentration was missing for 2 cases and overall fiscal year budget per pupil was missing for 1 case in the sample. Those cases were included in the total and in analysis by other district characteristics.

[2]Data are based on the estimated number of regular public school districts with insufficient budgets—8,700. Poverty concentration was missing for 9 cases, overall fiscal year budget per pupil was missing for 2 cases, and budget allocated for energy was missing for 2 cases in the sample. Those cases were included in the totals and in analysis by other district characteristics.

[3]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[4]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 20011.

Table B-5. Standard errors for table 5: Percent of public school districts with budget surpluses and budget shortfalls in fiscal year (FY) 2001, by size and selected district characteristics: FY 2001

District characteristic	Districts with sufficient energy budgets for FY 2001[1]		Districts with insufficient energy budgets for FY 2001[2]	
	Smaller surplus[3]	Larger surplus[4]	Smaller shortfall[3]	Larger shortfall[4]
Total	3.1	3.1	2.8	2.8
District enrollment in 1999–2000				
1 to 2,499	3.5	3.5	3.8	3.8
2,500 to 9,999	5.8	5.8	4.0	4.0
10,000 or more	7.5	7.5	3.4	3.4
Metropolitan status				
Urban	21.8	21.8	9.1	9.1
Suburban	5.3	5.3	4.1	4.1
Rural	3.7	3.7	4.0	4.0
Region				
Northeast	6.7	6.7	6.6	6.6
Southeast	9.7	9.7	5.4	5.4
Central	4.9	4.9	4.2	4.2
West	7.0	7.0	5.1	5.1
Poverty concentration[5]				
Less than 10 percent	6.4	6.4	5.0	5.0
10 to 19 percent	7.3	7.3	4.8	4.8
20 percent or more	6.4	6.4	4.6	4.6
Overall fiscal year 2001 budget per pupil				
Low: Less than $6,500	7.7	7.7	4.3	4.3
Mid-level: $6,500 to $8,999	5.0	5.0	3.5	3.5
High: $9,000 or more	6.3	6.3	5.4	5.4
Fiscal year 2001 energy budget sufficiency status[6]				
Sufficient	3.1	3.1	†	†
Insufficient	†	†	2.8	2.8
Percent of budget allocated for energy[7]				
1 percent or less	11.0	11.0	4.7	4.7
2 percent	6.2	6.2	3.9	3.9
3 percent or more	4.0	4.0	4.8	4.8

† Not applicable.

[1]Data are based on the estimated number of regular public school districts with sufficient budgets—5,600. Poverty concentration was missing for 2 cases and overall fiscal year budget was missing for 1 case in the sample. Those cases were included in the total and in analysis by other district characteristics.

[2]Data are based on the estimated number of regular public school districts with insufficient budgets—8,700. Poverty concentration was missing for 9 cases, overall fiscal year budget per pupil was missing for 2 cases, and budget allocated for energy was missing for 2 cases in the sample. Those cases were included in the totals and in analysis by other district characteristics.

[3]Public school districts classified as having a smaller surplus or smaller shortfall included those districts falling below the median energy budget in sufficiency or insufficiency.

[4]Public school districts classified as having a larger surplus or larger shortfall included those districts with the median energy budget and those above the median energy budget in sufficiency or insufficiency.

[5]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[6]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[7]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 20011.

Table B-6. Standard errors for table 6: Percent of public school districts with insufficient energy budgets for fiscal year (FY) 2001, by primary factors in shortfall and selected district characteristics: FY 2001

District characteristic	Increased per unit cost of energy	Increased amount of energy needed due to adverse weather	Increased amount of energy needed due to construction of new schools	Other
Total	1.9	1.3	1.2	1.2
District enrollment in 1999–2000				
1 to 2,499	2.8	2.1	1.5	1.7
2,500 to 9,999	2.5	1.2	1.9	1.0
10,000 or more	2.1	1.3	1.5	1.2
Metropolitan status				
Urban	7.1	2.2	7.0	0.6
Suburban	2.6	1.7	1.9	1.3
Rural	3.2	2.7	1.5	1.9
Region				
Northeast	3.8	2.6	3.0	0.3
Southeast	4.0	2.3	1.9	2.2
Central	3.4	2.7	1.9	2.3
West	4.2	3.4	1.9	2.6
Poverty concentration[1]				
Less than 10 percent	3.8	2.7	2.4	0.6
10 to 19 percent	3.6	2.4	2.1	2.6
20 percent or more	3.2	3.1	0.9	2.1
Overall fiscal year 2001 budget per pupil				
Low: Less than $6,500	3.1	1.3	2.6	2.4
Mid-level: $6,500 to $8,999	3.3	2.4	1.6	2.0
High: $9,000 or more	4.3	3.3	2.6	1.8
Percent of budget allocated for energy[2]				
1 percent or less	4.0	1.3	3.3	2.0
2 percent	2.9	2.3	1.3	1.8
3 percent or more	3.7	3.3	2.0	1.9

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts with insufficient budgets—8,700. Poverty concentration was missing for 9 cases, overall fiscal year budget per pupil was missing for 2 cases, and budget allocated for energy was missing for 2 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 20011.

Table B-7. Standard errors for table 7: Percent of public school districts agreeing, neither agreeing nor disagreeing, and disagreeing with the statement "Our district has successfully reduced energy usage," by selected district characteristics: Fiscal year 2001

District characteristic	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Total	2.2	2.2	1.9
District enrollment in 1999–2000			
1 to 2,499	2.8	2.8	2.6
2,500 to 9,999	3.3	2.9	2.3
10,000 or more	3.0	3.0	2.5
Metropolitan status			
Urban	7.0	7.4	5.8
Suburban	2.6	3.3	3.2
Rural	3.3	2.6	2.4
Region			
Northeast	5.5	4.7	4.3
Southeast	4.8	5.3	4.2
Central	3.5	3.9	3.1
West	3.6	3.8	3.6
Poverty concentration[1]			
Less than 10 percent	3.4	3.6	3.2
10 to 19 percent	3.9	4.0	3.1
20 percent or more	3.7	3.5	3.7
Overall fiscal year 2001 budget per pupil			
Low: Less than $6,500	4.0	3.3	3.6
Mid-level: $6,500 to $8,999	3.3	3.3	2.7
High: $9,000 or more	4.0	4.4	3.9
Fiscal year 2001 energy budget sufficiency status[2]			
Sufficient	4.2	4.3	3.6
Insufficient	2.6	2.3	2.7
Percent of budget allocated for energy[3]			
1 percent or less	5.2	5.2	6.0
2 percent	3.0	2.5	2.4
3 percent or more	3.5	3.2	3.7

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 20011.

Table B-8. Standard errors for table 8: Percent of public school districts agreeing, neither agreeing nor disagreeing, and disagreeing with the statement "Our district has successfully reduced the cost per unit of energy," by selected district characteristics: Fiscal year 2001

District characteristic	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Total	1.8	2.0	2.2
District enrollment in 1999–2000			
1 to 2,499	2.3	2.6	2.8
2,500 to 9,999	3.0	2.6	2.9
10,000 or more	3.1	3.1	3.8
Metropolitan status			
Urban	3.6	6.8	8.1
Suburban	2.8	3.0	3.2
Rural	2.7	2.7	2.8
Region			
Northeast	5.4	5.5	4.3
Southeast	4.7	4.1	5.3
Central	3.2	3.2	3.6
West	2.8	3.2	3.5
Poverty concentration[1]			
Less than 10 percent	3.0	4.1	4.0
10 to 19 percent	3.1	3.7	3.6
20 percent or more	3.2	2.8	3.6
Overall fiscal year 2001 budget per pupil			
Low: Less than $6,500	3.5	3.4	3.6
Mid-level: $6,500 to $8,999	2.7	2.7	3.9
High: $9,000 or more	3.6	4.1	3.6
Fiscal year 2001 energy budget sufficiency status[2]			
Sufficient	3.0	3.7	3.8
Insufficient	2.2	2.3	2.6
Percent of budget allocated for energy[3]			
1 percent or less	4.4	4.5	5.0
2 percent	2.8	3.1	3.1
3 percent or more	3.3	3.2	4.1

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 20011.

Table B-9. Standard errors for table 9: Percent of public school districts agreeing, neither agreeing nor disagreeing, and disagreeing with the statement "Our district has an immediate energy problem," by selected district characteristics: Fiscal year 2001

District characteristic	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Total	1.4	1.9	2.0
District enrnllment in 1999–2000			
1 to 2,499	1.8	2.5	2.4
2,500 to 9,999	2.5	2.5	3.2
10,000 or more	3.8	3.5	3.8
Metropolitan status			
Urban	8.2	5.9	7.1
Suburban	2.1	2.6	3.0
Rural	2.0	3.1	2.8
Reginn			
Northeast	3.0	3.8	4.6
Southeast	3.8	4.5	5.1
Central	2.7	2.6	3.2
West	2.7	3.7	3.3
Poverty concentration[1]			
Less than 10 percent	2.6	4.0	4.1
10 to 19 percent	2.5	3.1	3.4
20 percent or more	2.7	3.3	3.2
Overall fiscal year 2001 budget per pupil			
Low: Less than $6,500	2.9	3.8	4.2
Mid-level: $6,500 to $8,999	2.5	3.1	3.5
High: $9,000 or more	2.8	3.6	3.5
Fiscal year 2001 energy budget sufficiency status[2]			
Sufficient	2.4	3.3	3.5
Insufficient	2.0	2.5	2.3
Percent of budget allocated for energy[3]			
1 percent or less	4.1	5.5	5.4
2 percent	2.2	2.5	2.8
3 percent or more	2.8	4.2	3.6

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 20011.

Table B-10. Standard errors for table 10: Percent of public school districts agreeing, neither agreeing nor disagreeing, and disagreeing with the statement "Our district has a long-term energy problem," by selected district characteristics: Fiscal year 2001

District characteristic	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Total	2.2	2.1	2.1
District enrollment in 1999–2000			
1 to 2,499	2.7	2.8	2.8
2,500 to 9,999	3.2	3.4	3.0
10,000 or more	3.6	2.6	3.3
Metropolitan status			
Urban	7.5	5.6	5.5
Suburban	3.0	2.4	3.2
Rural	2.7	3.0	2.9
Region			
Northeast	4.8	4.2	4.7
Southeast	4.1	4.3	5.0
Central	3.6	3.3	3.6
West	3.7	4.0	3.1
Poverty concentration[1]			
Less than 10 percent	3.4	3.9	3.7
10 to 19 percent	4.0	3.2	3.8
20 percent or more	3.3	3.1	3.5
Overall fiscal year 2001 budget per pupil			
Low: Less than $6,500	3.8	4.1	4.0
Mid-level: $6,500 to $8,999	3.3	3.3	3.5
High: $9,000 or more	3.8	4.0	3.2
Fiscal year 2001 energy budget sufficiency status[2]			
Sufficient	3.6	3.6	3.4
Insufficient	2.9	2.6	2.2
Percent of budget allocated for energy[3]			
1 percent or less	4.8	4.5	4.7
2 percent	3.4	3.1	3.2
3 percent or more	3.3	4.0	3.7

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 20011.

Table B-11. Standard errors for table 11: Percent of public school districts agreeing, neither agreeing nor disagreeing, and disagreeing with the statement "Future increases in energy costs pose a major threat to the allocation of district funds to essential areas such as student instruction," by selected district characteristics: Fiscal year 2001

District characteristic	Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree
Total	2.3	1.6	1.7
District enrollment in 1999–2000			
1 to 2,499	3.1	2.3	2.1
2,500 to 9,999	2.5	1.9	1.8
10,000 or more	3.3	2.4	2.7
Metropolitan status			
Urban	5.6	1.9	5.4
Suburban	3.1	2.3	1.8
Rural	2.9	2.2	2.7
Region			
Northeast	5.5	3.6	3.9
Southeast	3.8	3.0	3.0
Central	3.3	2.4	3.3
West	3.8	2.6	2.2
Poverty concentration[1]			
Less than 10 percent	3.5	2.9	2.6
10 to 19 percent	4.0	3.0	2.9
20 percent or more	3.1	2.4	2.9
Overall fiscal year 2001 budget per pupil			
Low: Less than $6,500	3.5	2.7	3.1
Mid-level: $6,500 to $8,999	3.6	2.7	2.1
High: $9,000 or more	3.9	3.2	2.8
Fiscal year 2001 energy budget sufficiency status[2]			
Sufficient	3.4	2.9	2.8
Insufficient	2.7	1.9	1.9
Percent of budget allocated for energy[3]			
1 percent or less	5.1	3.1	3.5
2 percent	3.3	2.5	2.6
3 percent or more	3.2	2.2	2.4

[1]Poverty concentration is based on Census Bureau data on the percentage of children ages 5–17 in families below the poverty level within districts in 1996–97.

[2]Fiscal year 2001 energy budget sufficiency status is based on responses to question 2d, part 1 (fiscal year 2001 budgeted energy expenditures) and part 2 (fiscal year 2001 actual energy expenditures). Districts were classified as having sufficient or insufficient funds allocated to meet their FY 2001 energy needs.

[3]The categories used for percent of budget allocated for energy reflect the following ranges: 1 percent or less includes districts that allocated less than 1.5 percent for energy; 2 percent includes those that allocated from 1.5 percent to less than 2.5 percent for energy; and 3 percent or more includes those that allocated 2.5 percent or more for energy.

NOTE: Percentages presented in this table are based on the estimated number of regular public school districts—14,400. Poverty concentration was missing for 11 cases, overall fiscal year budget per pupil was missing for 3 cases, fiscal year sufficiency status was missing for 8 cases, and budget allocated for energy was missing for 10 cases in the sample. Those cases were included in the totals and in analyses by other district characteristics. No imputation was performed in cases where information on district characteristics (e.g., poverty concentration) was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Effects of Energy Needs and Expenditures on U.S. Public Schools," FRSS 81, 20011.

Table B-12. Standard errors for figures and for data not shown in tables in text: Fiscal years (FY) 2001 and 2002

Item	Estimate	Standard error
Figure 2: Percent of public school districts with insufficient energy budgets for fiscal year (FY) 2001 reporting various levels of difficulty responding to the insufficiency: FY 2001		
Very difficult	28	2.3
Moderately difficult	39	2.6
Slightly difficult	24	2.3
Not difficult	9	1.5
Figure 3: Percent of public school districts with insufficient energy budgets for fiscal year (FY) 2001 reporting various reasons for difficulty responding to the insufficiency: FY 2001		
Need to reallocate funds	75	2.7
Need to tap unappropriated surplus	53	3.3
Increase was large proportion of nonpersonnel budget	46	3.0
Need to use severe austerity measures	20	2.4
Supervisory approval not immediately forthcoming	19	2.4
Need to raise school taxes	8	1.7
Need to roll shortfall over to next fiscal year	8	1.4
Need to take on short-term loans	7	1.8
Other	4	1.4
Chapter 2: Percent of public school districts' energy expenditures in fiscal year (FY) 2001, by type of energy: FY 2001		
Utilities (heating, cooling, and electrical power)	90	0.3
Fuel (gasoline, diesel, other fuel to operate vehicles)	9	0.3
Other	1	0.1
Chapter 2: Percent of public school districts' energy expenditures in fiscal year (FY) 2002, by type of energy: FY 2002		
Utilities (heating, cooling, and electrical power)	90	0.3
Fuel (gasoline, diesel, other fuel to operate vehicles)	9	0.3
Other	1	0.1
Chapter 3: Average district energy expenditure in fiscal year (FY) 2001, among districts with insufficient energy budgets: FY 2001	$653,500	$29,200

NOTE: No imputation was performed in cases where information on district characteristics was missing or where districts did not provide information on the survey (e.g., item nonresponse). Ratios (averages) using nonimputed data will implicitly impute the cell ratio for all missing data within the cell. This can cause inconsistencies in the estimates between tables.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, Survey on the "Effects of Energy Needs and Expenditures on U.S. Public Schools: 1999–2001," FRSS 81, 2001.

Appendix C

Questionnaire

U.S. DEPARTMENT OF EDUCATION
NATIONAL CENTER FOR EDUCATION STATISTICS
WASHINGTON, D.C. 20006-5651

EFFECTS OF ENERGY NEEDS AND EXPENDITURES ON U.S. PUBLIC SCHOOLS

FAST RESPONSE SURVEY SYSTEM

FORM APPROVED
O.M.B. NO.: 1850-0733
EXPIRATION DATE: 7/2002

This survey is authorized by law (P.L. 103-382). While participation in this survey is voluntary, your cooperation is critical to make the results of this survey comprehensive, accurate, and timely.

Please provide the following information:

Name of person completing form: _____ Telephone: _____

Title/position: _____ E-Mail: _____

This questionnaire asks about three fiscal years: FY 2000, FY 2001, and FY 2002. Most school districts define a fiscal year as the period of time spanning July 1 through June 30. Using this definition, the three fiscal years covered in this questionnaire are defined as:

FY 2000 = July 1, 1999, through June 30, 2000
FY 2001 = July 1, 2000, through June 30, 2001
FY 2002 = July 1, 2001, through June 30, 2002

What is the month and day of the start of your district's fiscal year? _____/_____

What is the month and day of the end of your district's fiscal year? _____/_____

Please use this time period as you complete this questionnaire.

AFFIX LABEL

If the above district information is incorrect, please update it directly on the label.

THANK YOU. PLEASE KEEP A COPY OF THIS SURVEY FOR YOUR RECORDS.

PLEASE RETURN COMPLETED FORM TO:	IF YOU HAVE ANY QUESTIONS, CONTACT:
Tim Smith (716624) WESTAT 1650 Research Boulevard Rockville, Maryland 20850-3195	Tim Smith at Westat 800-937-8281, ext. 2305 or 240-314-2305 Fax: 800-254-0984 E-mail: timsmith@westat.com

FRSS Form No.81, 11/2001

DEFINITIONS FOR THIS SURVEY

District Facilities – **A piece of land, a building site, a building, or part of a building owned by and/or used for activities of a local education agency (that is, a school district or equivalent organizational unit).**

Energy – **Includes all sources used to power or operate district facilities and equipment such as utilities (for example, natural gas, oil, and other sources of heating, cooling, and electrical power) and fuel (for example, gasoline, diesel, or other sources).**

Total Overall Budget – **Includes amounts for all programs and activities conducted by the district such as the general operating funds, physical plant and equipment repair, construction, capital outlay, student activities, cafeteria and food service, transportation, Federal programs such as Title I, and insurance/liability.**

- **Budgets and Expenditures** – This section asks for information on your district's original budgets and actual expenditures during FY 2000 through FY 2002.

1. At the start of the fiscal year, what was your district's original <u>total overall budget</u> for:

   a. FY 2000 ..... $ _____.00

   b. FY 2001 ..... $ _____.00

   c. FY 2002 ..... $ _____.00

- In **Column A**, please record the amount your district <u>actually spent</u> for the specified energy needs in FY 2000.

  In **Column B**, record how much was originally budgeted at the start of FY 2001 and how much was <u>actually spent</u> during FY 2001.

  In **Column C**, record how much was originally budgeted at the start of FY 2002.

Type of energy need	A. FY 2000	B. FY 2001		C. FY 2002
	Actual expenditures	Budgeted expenditures	Actual expenditures	Budgeted expenditures
a. Utilities for district facilities (heating, cooling, and electrical power)?	$ _____.00	$ _____.00	$ _____.00	$ _____.00
b. Gasoline, diesel, and other fuel to operate vehicles?	$ _____.00	$ _____.00	$ _____.00	$ _____.00
c. Other energy needs?	$ _____.00	$ _____.00	$ _____.00	$ _____.00
d. Total energy needs *(sum of lines a-c)*?	$ _____.00	$ _____.00	$ _____.00	$ _____.00

If your district's original total energy budget at the start of FY 2001 was sufficient to cover your energy costs (that is, total actual expenditures on line d) does not exceed budgeted expenditures on line d) in column B), please check this box ☐ and skip to question 6. Otherwise, please continue with question 3.

- **Fiscal Year 2001 Experiences** – The next questions ask about FY 2001.

3. What was the <u>main</u> reason your <u>original</u> total energy budget at the start of FY 2001 was not sufficient to cover your energy costs? *(Circle one.)*

   Increases in the per unit cost of energy (for example, increased price per gallon or price per kilowatt) 1
   Increases in the amount of energy needed due to construction of new schools 2
   Increases in the amount of energy needed as a result of adverse weather conditions 3
   Other *(specify)* _____ 4

4. How difficult was it for your district to respond to the increase in energy costs during FY 2001? *(Circle one.)*

Very difficult	1	
Moderately difficult	2	
Slightly difficult	3	*(Skip to question 6)*
Not difficult	4	*(Skip to question 6)*

5. Which of these statements describe why it was difficult for your district? *(Circle one response on each line.)*

		Yes	No
a.	No new funds were available and money had to be reallocated from other programs (not surplus)	1	2
b.	No new funds were available and money had to be obtained through severe austerity measures	1	2
c.	School taxes had to be raised to cover the shortfall	1	2
d.	The school district had to borrow funds on a short-term basis	1	2
e.	The increase was a large proportion of the non-personnel budget	1	2
f.	The shortfall had to be rolled over into the next fiscal year	1	2
g.	The source of approval (for example, the school board, county, or city) did not wish to approve an increase in funds (or did so reluctantly)	1	2
h.	The unappropriated surplus had to be tapped to cover the shortfall	1	2
i.	Other *(specify)* _____	1	2

- **Cost-Saving Measures** – The next questions ask about cost-saving measures that your district might have used at some time during this year or the past several years.

6. Please indicate if your district has used the following measures to decrease energy expenditures in each fiscal year. *(Circle one response in each column on each line.)*

Cost-saving measure	A. Used in FY 2000 or before		B. Used in FY 2001		C. Used in FY 2002	
	Yes	No	Yes	No	Yes	No
a. Participated in a consortium that negotiated prices with third-party energy vendors	1	2	1	2	1	2
b. Locked in rates with one or more energy vendors	1	2	1	2	1	2
c. Renovated or retrofitted existing facilities to improve energy efficiency	1	2	1	2	1	2
d. Closed schools or sent students home early on at least one regular school day	1	2	1	2	1	2
e. Instituted or increased fees charged to use school facilities	1	2	1	2	1	2
f. Instituted other district-wide conservation measures to cut back on energy use	1	2	1	2	1	2
g. Other measures *(specify)* _____	1	2	1	2	1	2

7. To what extent do you agree or disagree with the following statements about your district's energy expenditures? *(Circle one response on each line.)*

Statement	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
a. Our district has successfully reduced energy usage	1	2	3	4	5
b. Our district has successfully reduced the cost per unit of energy	1	2	3	4	5
c. Our district has an immediate energy problem	1	2	3	4	5
d. Our district has a long-term energy problem	1	2	3	4	5
e. Future increases in energy costs pose a major threat to the allocation of district funds to essential areas such as student instruction	1	2	3	4	5

- **District Characteristics** – This section asks for some information on district characteristics.

8. Please record your district's enrollment as of October 1 (or the nearest date) for each of the following years.

   a. October 1, 2000 ..... _____ students
   b. October 1, 2001 ..... _____ students

9. What percent of the students in your district were eligible for free or reduced-price lunch as of:

   a. October 1, 2000 ..... _____ percent of students
   b. October 1, 2001 ..... _____ percent of students

10. Please record any additional comments regarding your district's experience with rising expenditures below.

_____

_____

_____

THANK YOU. PLEASE KEEP A COPY FOR YOUR RECORDS.

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