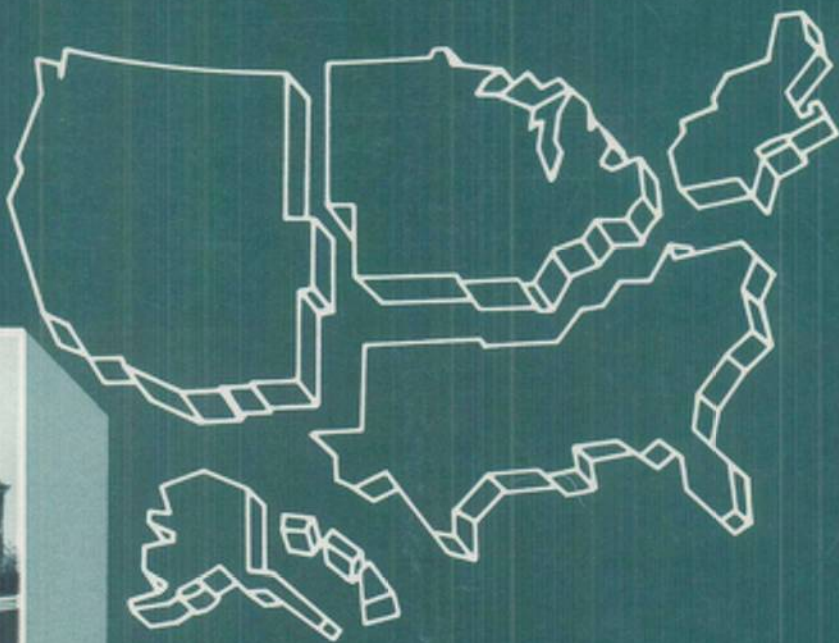


Household Energy Consumption and Expenditures 1987

Part 2: Regional Data



Residential Energy Consumption Survey

EIA

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Note: Title for this report, *Household Energy Consumption and Expenditures 1987, Part 2: Regional Data* has been shortened. Previous editions included the survey and survey period in the title, for example: *Residential Energy Consumption Survey: Consumption and Expenditures, April 1984 Through March 1985*.

Cover Caption: *The single-family home, mobile home, townhouses and apartment buildings are examples of sampled housing units in the Residential Energy Consumption Survey.*



Household Energy Consumption and Expenditures 1987

Part 2: Regional Data

Energy Information Administration
Office of Energy Markets and End Use
U.S. Department of Energy
Washington, DC 20585

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Executive Summary

This report is the third in the series of reports¹ presenting data from the 1987 Residential Energy Consumption Survey (RECS). The 1987 RECS, seventh in a series of national surveys of households and their energy suppliers, provides baseline information on household energy use in the United States. Data from the seven RECS and its companion survey, the Residential Transportation Energy Consumption Survey (RTECS), are made available to the public in published reports such as this one, and on public use data files.²

This report presents data for the four Census regions and nine Census divisions on the consumption of and expenditures for electricity, natural gas, fuel oil and kerosene (as a single category), and liquefied petroleum gas (LPG). Data are also presented on consumption of wood at the Census region level. The emphasis in this report is on graphic depiction of the data. Data from previous RECS surveys are provided in the graphics, which indicate the regional trends in consumption, expenditures, and uses of energy. These graphs present data for the United States and each Census division.

The major findings of this report follow.

Electricity consumption per household in 1987 was the highest in the East South Central Census Division (43.7 million Btu) and lowest in the New England Census Division (22.9 million Btu) and the Middle Atlantic Census Division (23.4 million Btu). (See Appendix E, "U.S. Census Regions and Divisions" for the States that make up these Census divisions.) Major factors in explaining these differences between divisions include:

- The price of electricity is lowest in the East South Central Census Division and highest in the New England and Middle Atlantic Census Divisions.
- Price differences may be one reason that about three times more households use electricity for the high consumption uses such as space heating, central air conditioning, and water heating in the East South Central Census Division than do in the New England and Middle Atlantic Census Divisions. For example, 22 percent of the households in the Middle Atlantic Census Division heat their water with electricity, but in the East South Central Census Division the percentage is 67.

Among households using fuel oil/kerosene, the per household consumption of fuel oil/kerosene has fallen by 30 percent or more in Census divisions outside the Northeast Region between 1981 and 1987. A major reason for this is a decline in the use of fuel oil/kerosene as the main heating fuel.

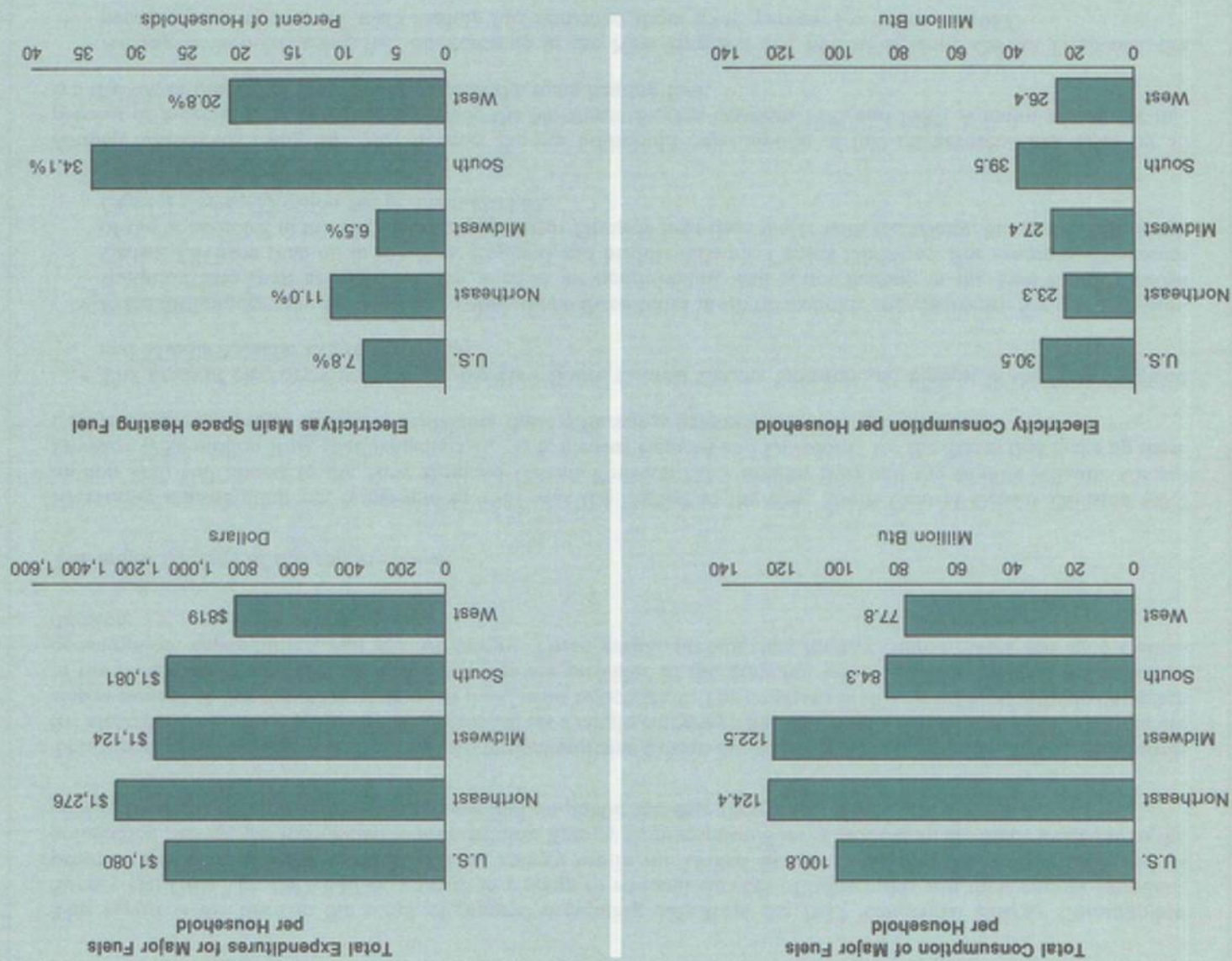
- Among households using fuel oil/kerosene in the New England and Middle Atlantic Census Divisions, the percentage using it as the main heating fuel remained about 85-90 percent from 1981 to 1987.
- Among households that use fuel oil/kerosene in other Census divisions, the percentage using it as their main heating fuel dropped to approximately 50 percent in 1987, despite the fact that fuel oil/kerosene prices have declined by 34 percent from 1981 to 1987. The growth in the number of households using a portable kerosene heater has contributed to this change; portable kerosene heaters are seldom used as the main heating equipment.

The use of energy in households varies considerably from one region of the country to another because of differences in weather conditions and the cost and use of energy. Figure ES1 displays some of these differences.

¹The other two reports are *Housing Characteristics 1987 DOE/EIA-0314(87)*, (Washington, D.C., May 1989) and *Household Consumption and Expenditures 1987, Part I: National Data*, DOE/EIA-0321/1(87), (Washington, D.C., October 1989).

²See Appendix F, "Related EIA Publications on Energy Consumption," for a list of EIA publications and public use tapes available concerning the consumption of energy.

Figure ES1. Comparison Among Census Regions on Selected Indicators of Household Energy Use, 1987



Note: Geographic areas are Census regions. See Appendix E for a map showing each region.
Source: Energy Information Administration, Office of Energy Markets and End Use, the 1987 Residential Energy Consumption Survey.

Introduction

The *Household Energy Consumption and Expenditures 1987, Part 2: Regional Data* is the third report produced from the 1987 Residential Energy Consumption Survey (RECS) data. It is prepared by the Energy End Use Division (EEUD) of the Office of Energy Markets and End Use (EMEUE), Energy Information Administration (EIA). The EIA collects and publishes comprehensive data on energy consumption in the household sector through the RECS.

Background

The data for this report are based on both the household interviews from the 1987 RECS, conducted in the fall of 1987, and on energy billing data collected from the households' energy suppliers in early 1988. The billing data cover a 12-month period from January 1987 through December 1987. The 1987 RECS represents 90.5 million households in the 50 States and the District of Columbia.

The RECS is a national multistage probability sample survey currently conducted on a triennial basis. The 1987 RECS is the seventh survey in the series. Previous RECS were conducted annually from 1978 to 1982 and then in 1984. The RECS data are collected in two stages. During the first stage, household and housing-unit characteristics data are collected via a personal interview with the householder. At the end of that interview, the respondent is asked to sign an authorization form allowing the suppliers of energy to that household to release household billing information to the survey contractor. The second stage is a mail survey requesting energy consumption and expenditure information from the suppliers of energy to the household. The RECS includes both a longitudinal component that measures energy changes over time and a subsample that provides information on residential vehicles. The longitudinal component collects data on the same housing units in two subsequent surveys. The transportation subsample is drawn from the RECS. Additional vehicle-related data are then collected in the Residential Transportation Energy Consumption Survey (RTECS) and reported in the publication titled *Household Vehicles Energy Consumption 1988*, to be published in January 1990. The EIA also conducts energy consumption surveys in the commercial and manufacturing sectors. See Appendix F, "Related EIA

Publications on Energy Consumption," for a listing of publications from the RECS and other EIA surveys in the residential transportation, commercial, and manufacturing sectors.

This report contains household energy consumption, expenditure, and price data for four Census regions and nine Census divisions. The Census division is the smallest geographic area for which RECS data are available (data for individual States are not available from RECS).

Housing Characteristics 1987 was the first report based on the 1987 RECS. It focused on the energy-related characteristics of housing units such as the type, size, and age of the structure; fuels and equipment used for main and secondary sources of heat, air-conditioning equipment, appliances, insulation and retrofits, thermostat settings, and use of air-conditioning equipment. Demographic data on the households and climate data were also included.

The second report in the series, *Household Energy Consumption and Expenditures 1987, Part 1: National Data*, published October 1989, covered national-level household energy consumption, expenditures, and the prices households pay for electricity, natural gas, fuel oil and kerosene, and liquefied petroleum gas. Data on wood consumption are also included as well as statistically derived estimates of consumption and expenditures for the four end uses of residential energy: space heating, air conditioning, water heating, and appliance operation.

The data in this report are published to provide objective, accurate energy information for a wide audience including Congress, Federal and State agencies, industry, and the general public. The data were collected and published by the EIA to fulfill its responsibilities as specified in the Federal Energy Administration Act of 1974 (Public Law 93-275), as amended.

The statistics published in this report are based on a sample from the population of all occupied housing units in the United States as of November 1987. As in all sample surveys, the numbers are estimates rather than exact measures for the population. As described in Appendix C, "Quality of the Data," the accuracy of each estimate is indicated by the relative standard error (RSE). The RSE is easily calculated from information provided on each table in the "Detailed Statistics" sec-

tion of this report. The reader is encouraged to calculate the RSE for the estimates of interest, in order to determine how precise the estimate is. No estimates were published in the "Detailed Statistics" section that were based on fewer than 10 sample households or that had a RSE greater than 50 percent.

Consumption of energy is reported for all fuels in terms of energy (Btu) delivered to the site of use. No adjustment was made for the primary fuels consumed to generate electricity, to process natural gas, to pump and distill crude oil into petroleum products such as fuel oil, or to deliver any of these fuels to the household.

The EIA gratefully acknowledges the cooperation of the respondents in supplying the information used to produce the estimates in this report.

Organization of the Report

The following major section of this report presents trends in energy consumption and expenditures for the

total United States and for each of the nine Census divisions. A graphic overview is presented for each of the geographic areas. The next major section of the report, "Detailed Statistics," contains extensive cross-tabulations of housing characteristics and energy consumption and expenditures for each of the Census regions and Census divisions.

Appendix A describes how the survey was conducted. Appendix B contains the data used in constructing the graphs and preparing the summaries of trends. (This appendix will be useful for those wishing to cite numbers for the trends displayed in the graphic overviews.) Procedures for calculating RSE's are located in Appendix C, "Quality of the Data." Climate Zone and Census Regions and Divisions maps are located in Appendices D and E, respectively. A list of related EIA publications is located in Appendix F. The titles of the data collection forms are listed in Appendix G. Definition of the terms used in this report are located in the "Glossary."

Change in Annual Consumption Period

Beginning with the 1987 RECS, the annual period for the collection of RECS consumption data has changed. Consumption data are now collected for the calendar year (January through December of the report year). Previous RECS collected consumption data for the 12-month period of April through March. For example, the 1984 RECS reports contained consumption data for April 1984 through March 1985. The change in the annual consumption period was made to make the RECS consumption estimates more consistent with other EIA data systems that are based on data for a calendar year.

The change to a calendar year basis could increase the potential bias of the estimates of total energy consumption and total energy expenditures because of a change in the midpoint of the consumption period. The change should not affect the estimates of average consumption or average expenditures. (See Appendix C, "Quality of the Data" for further discussion.) The length of the consumption period remains the same; data collection schedules have been adjusted to collect data for the January through December period. Consumption data stated in this report were collected for the 12-month period beginning in January 1987. (See Appendix C, *Energy Price and Expenditure Data Report 1970-1980 State and U.S. Total*, July 1983, DOE/EIA-0376 for a comparison of the two data collection periods based on adjustment of the April through March collection period to the January through December collection period.)

Trends in Energy Consumption and Expenditures

This section of the report presents, for the United States and each of the nine Census divisions, 2 pages of graphic material. The first page is a background page showing the States comprising the geographic area, changes in heating and cooling degree-days between 1984 and 1987, end-use expenditures for all fuels (electricity, natural gas, fuel oil/kerosene, and LPG) and for electricity by itself, and a brief summary of the trends displayed on the second page. Heating and cooling degree-days are indications of how much heating or cooling may be required to maintain comfort levels in the home. (See the "Glossary" for a more detailed definition.)

The second page displays graphs on trends in consumption and expenditures and the uses of each fuel. These

graphs are interrelated and designed to provide the reader with a quick overview of the Census division. Some of the graphs present aggregate consumption (quadrillion Btu) and expenditures (billion dollars). Other graphs show the consumption and expenditures on a per household basis calculated for households that use the particular fuel. Additional graphs display some of the major uses of each fuel that will clarify the trends in consumption per household. These graphs are based on households that use the particular fuel. For example, the decrease in fuel oil and kerosene consumption per household among households that use fuel oil/kerosene, is explained, in part, by the graph that shows that relatively fewer households are using fuel oil or kerosene as their main space-heating fuel.

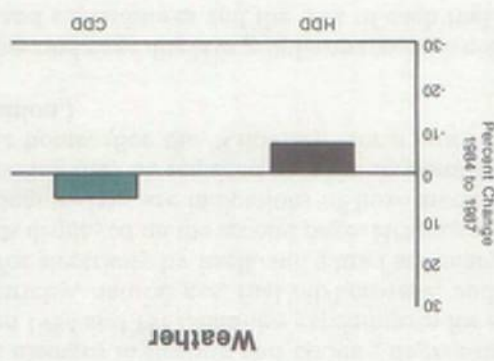
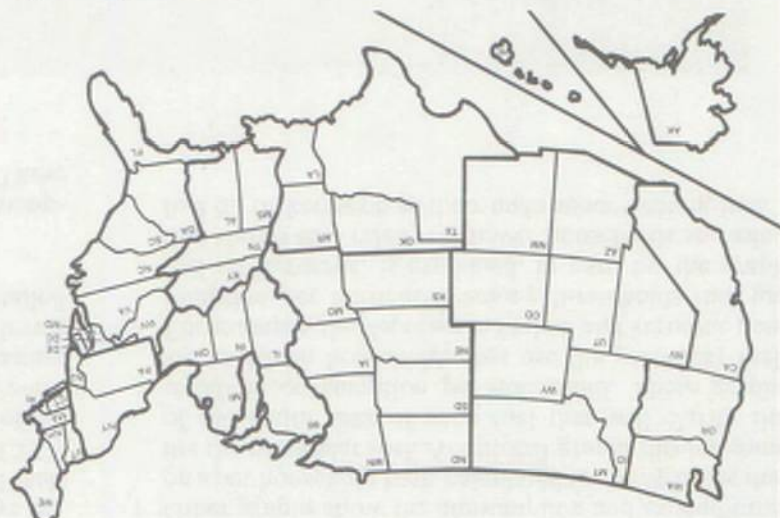


This dome house is a unique single-family home, which is an example of one of the households in the Northeast Census Region that was sampled in the Residential Energy Consumption Survey.

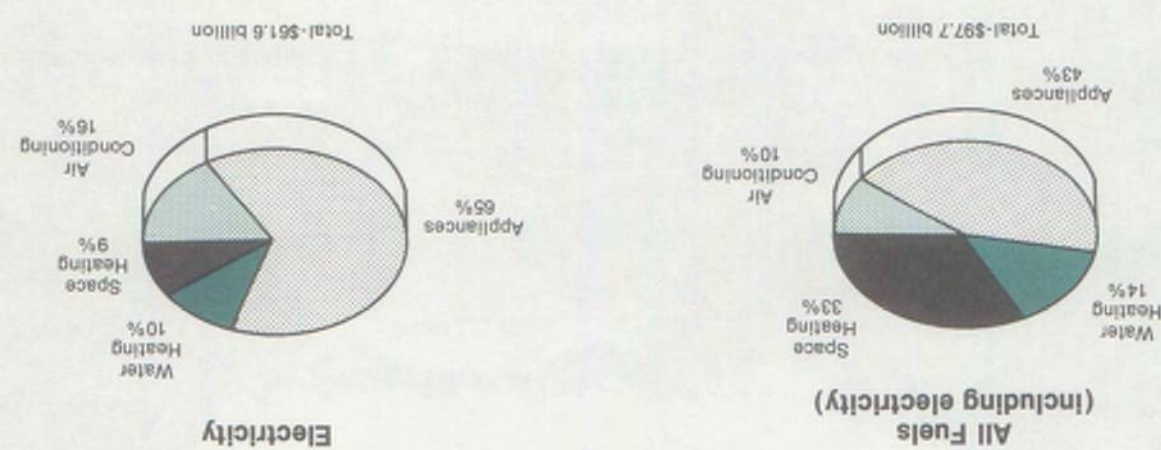
United States Households

- Total electricity consumption has been stable from 1978 to 1984 but increased from 1984 to 1987. Electricity use per household decreased from 1978 to 1984, but showed an increase in 1987. The weather probably was a major contributor to this increase. Other factors included an increased prevalence of electricity for space heating, central air conditioning, frost-free refrigerators, and clothes dryers.

- Total consumption and per household use of natural gas and fuel oil or kerosene declined from 1978 to 1987. The decline in fuel oil/ kerosene consumption is related to the lower percentage of households that use it as their main heating fuel. The decline is also related to increased use of portable kerosene heaters that are seldom used as the main heating equipment. The decline in natural gas consumption is not related to a change in the role of natural gas in heating--the proportion of households using it as the main heating fuel remained constant.

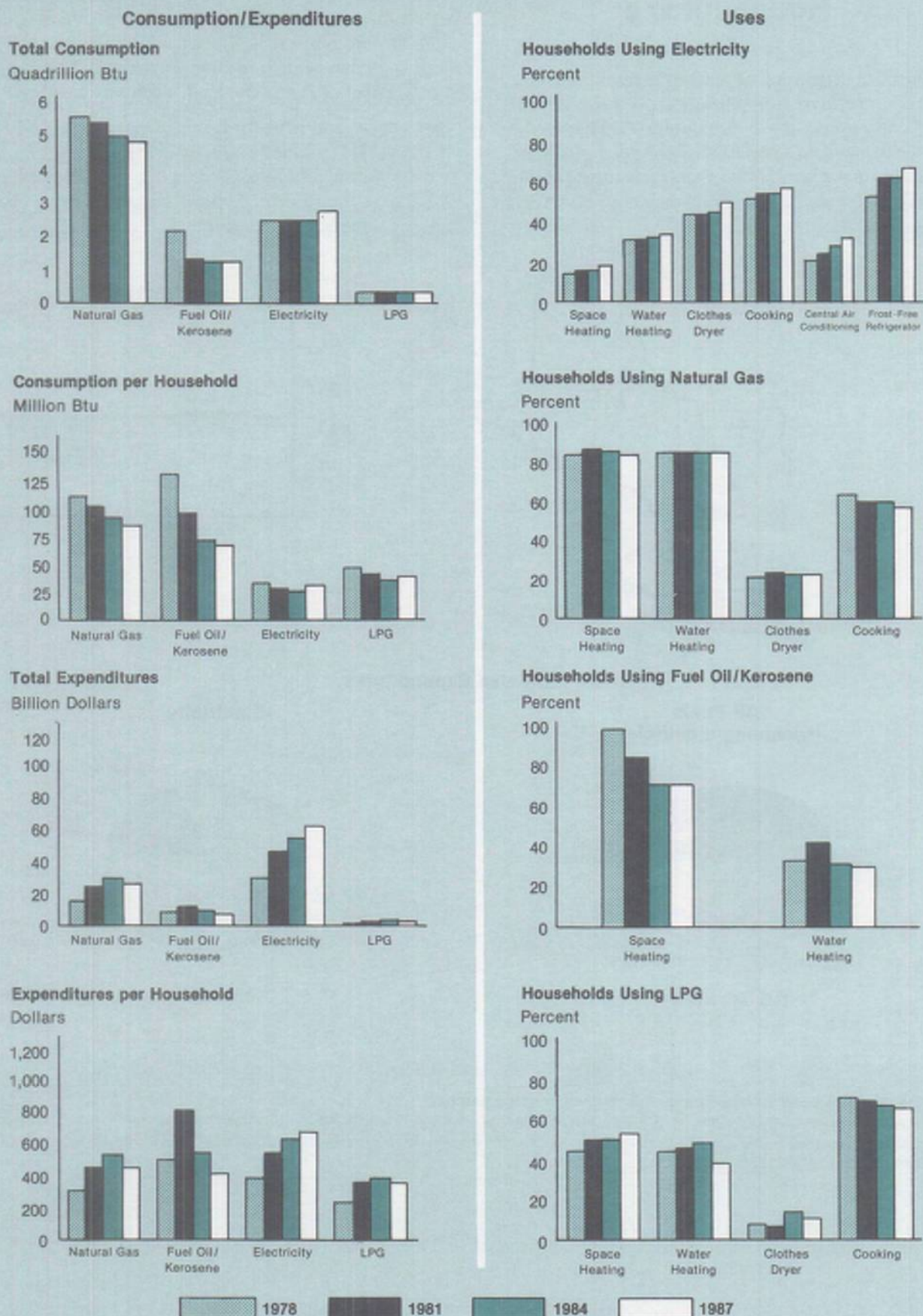


End-Use Expenditures



Note: See Appendix B for a listing of data used in these graphs.
 Sources: The weather data are from the National Atmospheric and Oceanic Administration; the end-use expenditures data are from Tables 23 and 25, Energy Information Administration, *Household Energy Consumption and Expenditures 1987, Part I: National Data*, EIA-0321/1(87).

Figure 1. United States Household Energy Trends

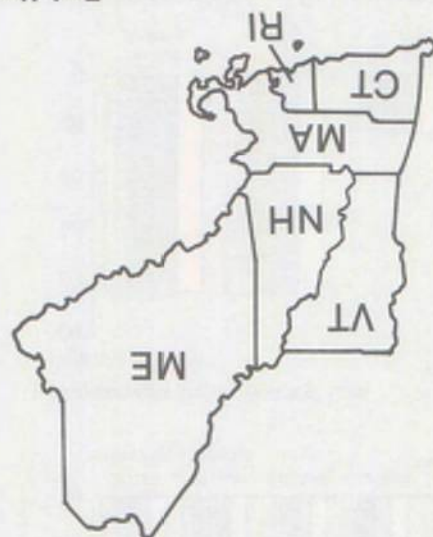


Notes: • Per household consumption and expenditures are for households using the fuel. • Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role. • See Appendix B for a listing of data used in these graphs.
Sources: Energy Information Administration, Office of Energy Markets and End Use, the 1978, 1981, 1984, and 1987 Residential Energy Consumption Surveys.

New England Census Division Households

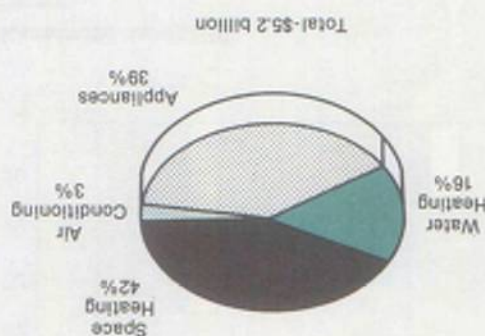
- Total consumption of fuel oil/kerosene and electricity showed little change from 1981 to 1987. Total natural gas consumption declined somewhat during this period. Consumption per household among households that use natural gas, fuel oil/kerosene, or electricity has not shown any

- Expenditures for fuel oil/kerosene declined from 1981 to 1987 both in aggregate and on a per household basis. This is due mainly to decreases in the price of fuel oil/kerosene, which has decreased by one-third.
- A relatively high percentage of homes that use fuel oil/kerosene continue to use it as the main space-heating fuel--approximately 10 percent use fuel oil/kerosene as a secondary heating fuel.

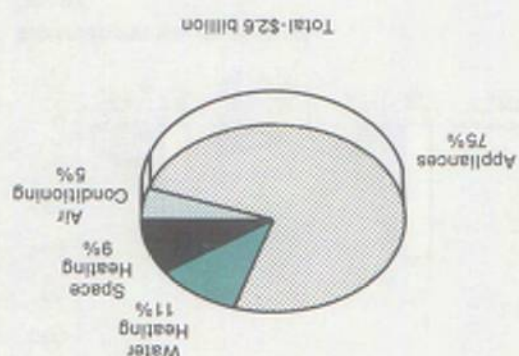


End-Use Expenditures

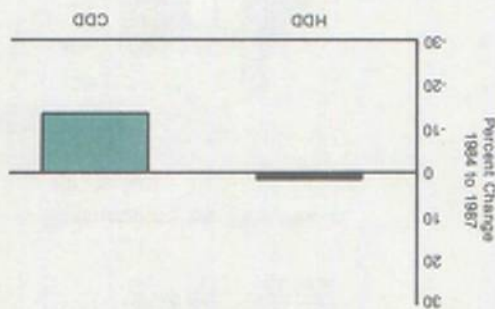
All Fuels (including electricity)



Electricity

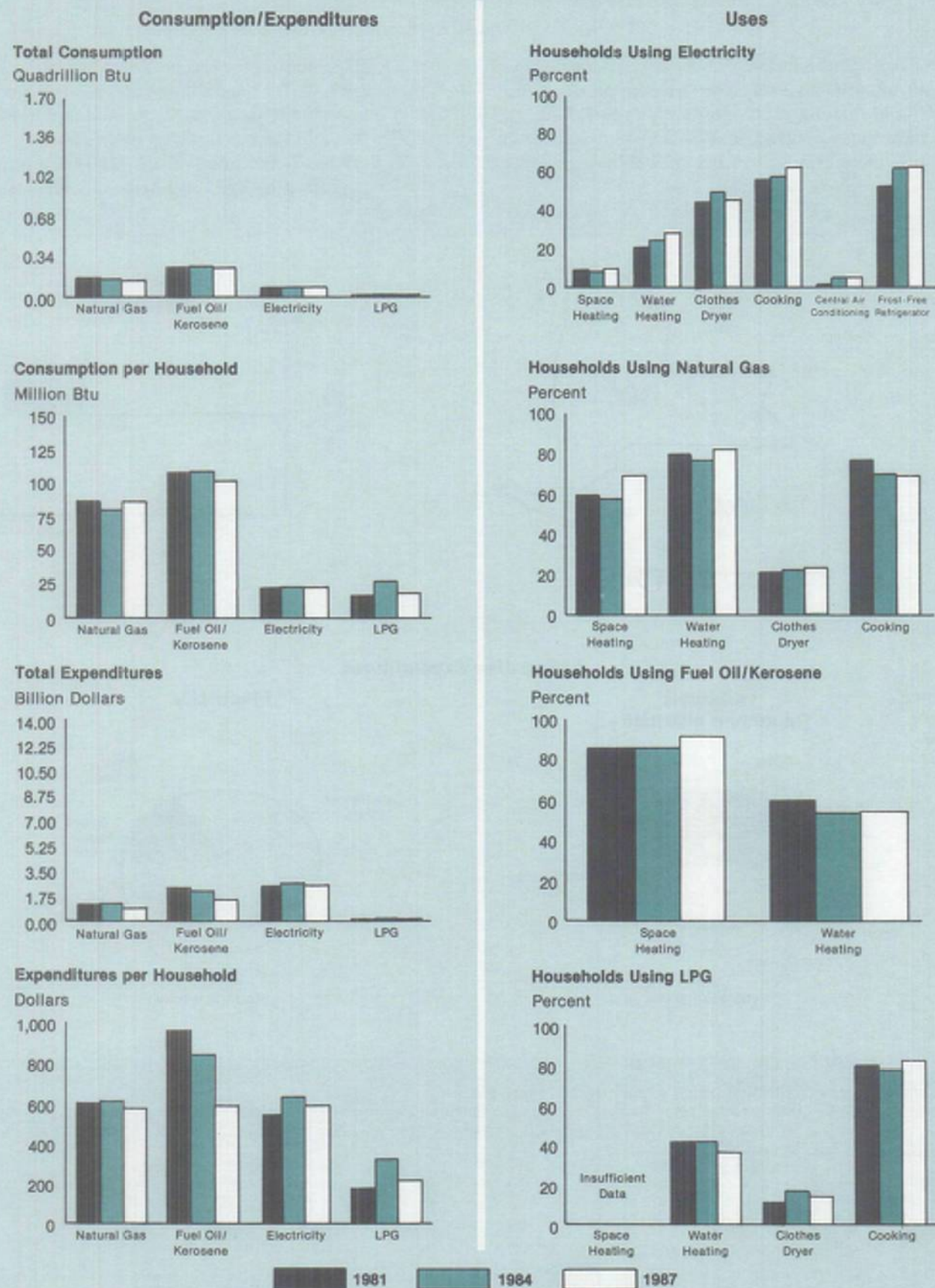


Weather



Note: See Appendix B for a listing of data used in these graphs. Sources: The weather data are from the National Atmospheric and Oceanic Administration; the end-use expenditures data are from Tables 23 and 25, Energy Information Administration, Household Energy Consumption and Expenditures 1987, Part I; National Data, EIA-0321/1(87).

Figure 2. New England Census Division Household Energy Trends

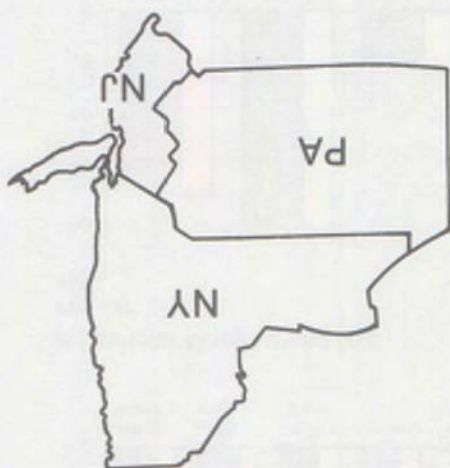


Notes: • Per household consumption and expenditures are for households using the fuel. • Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role. • See Appendix B for a listing of data used in these graphs.

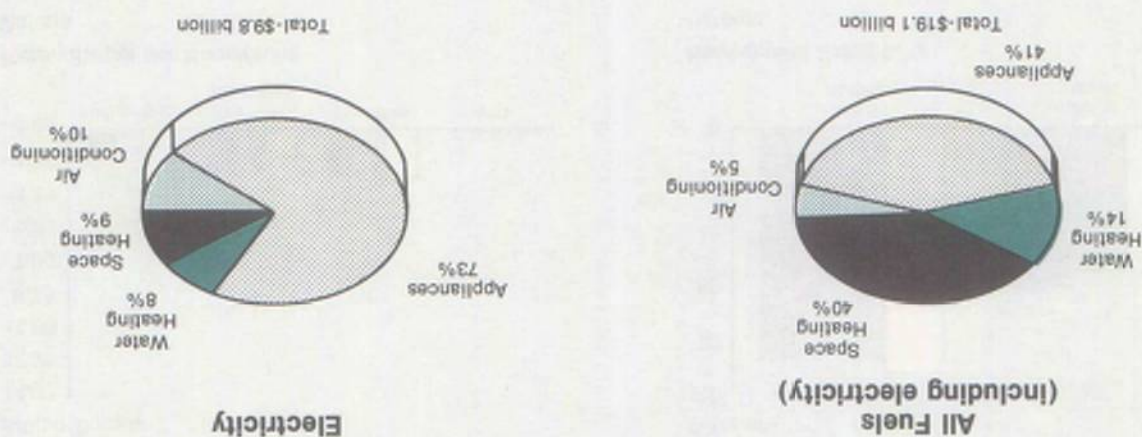
Sources: Energy Information Administration, Office of Energy Markets and End Use, the 1981, 1984, and 1987 Residential Energy Consumption Surveys.

Middle Atlantic Census Division Households

- Total consumption of fuel oil/kerosene declined from 1981 to 1987 and consumption per household among households that use fuel oil/kerosene declined in 1984 but remained at essentially the same level in 1987. A relatively

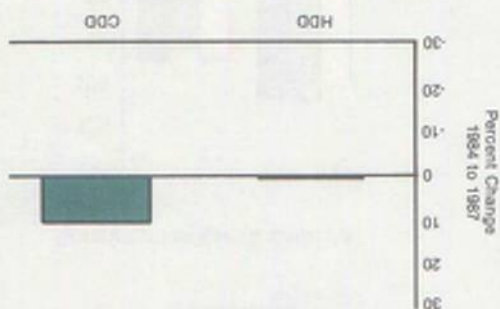


End-Use Expenditures



- Expenditures for fuel oil/kerosene declined from 1981 to 1987 both in aggregate and on a per household basis (based on households that use fuel oil/kerosene). This is due mainly to decreases in the price of fuel oil/kerosene, which decreased by one-third between 1981 and 1987. kerosene continue to use it as the main space-heating fuel—approximately 10 percent use fuel oil/kerosene as a secondary heating fuel.

Weather



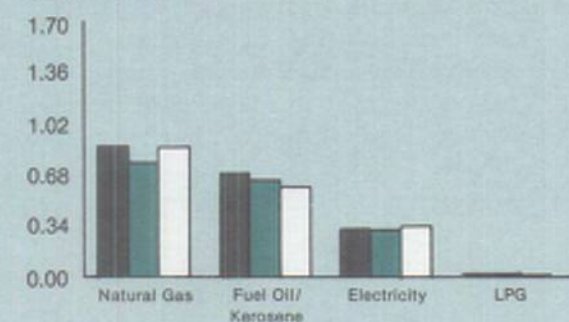
Note: See Appendix B for a listing of data used in these graphs. Sources: The weather data are from the National Atmospheric and Oceanic Administration; the end-use expenditures data are from Tables 23 and 25, Energy Information Administration, *Household Energy Consumption and Expenditures 1987, Part I: National Data*, EIA-0321/1 (87).

Figure 3. Middle Atlantic Census Division Household Energy Trends

Consumption/Expenditures

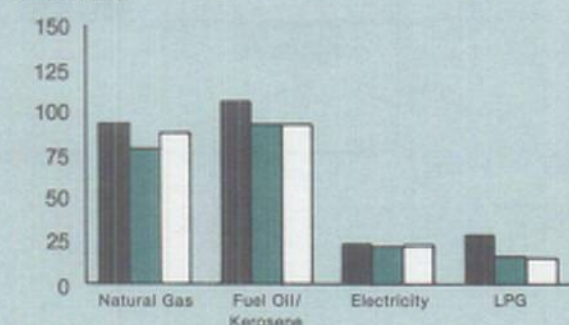
Total Consumption

Quadrillion Btu



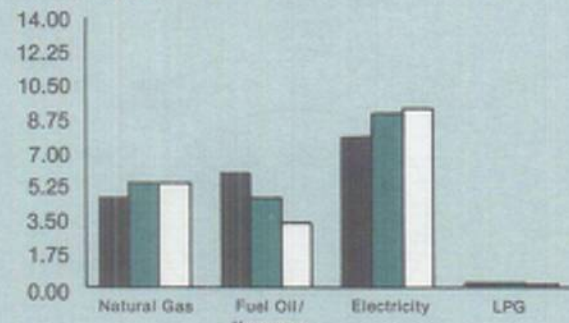
Consumption per Household

Million Btu



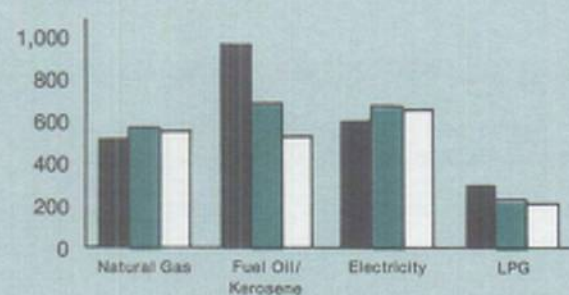
Total Expenditures

Billion Dollars



Expenditures per Household

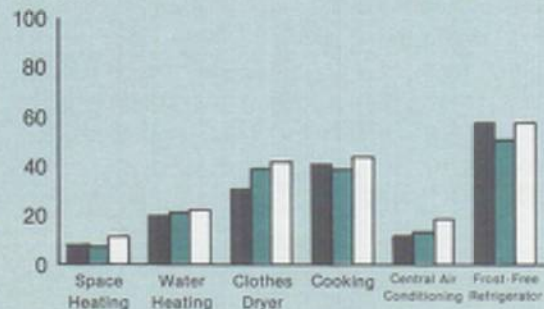
Dollars



Uses

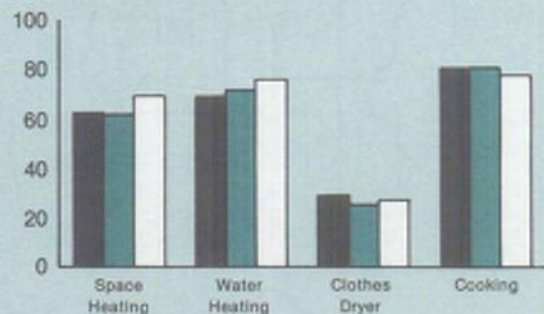
Households Using Electricity

Percent



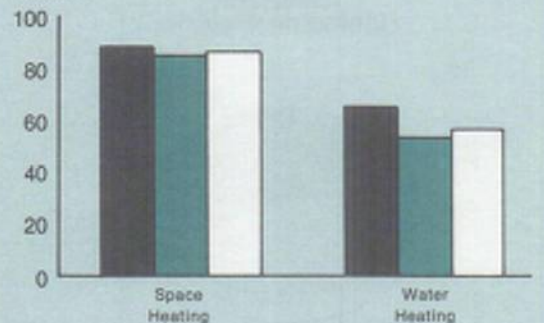
Households Using Natural Gas

Percent



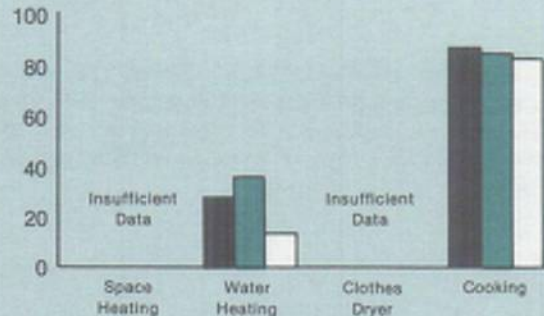
Households Using Fuel Oil/Kerosene

Percent



Households Using LPG

Percent



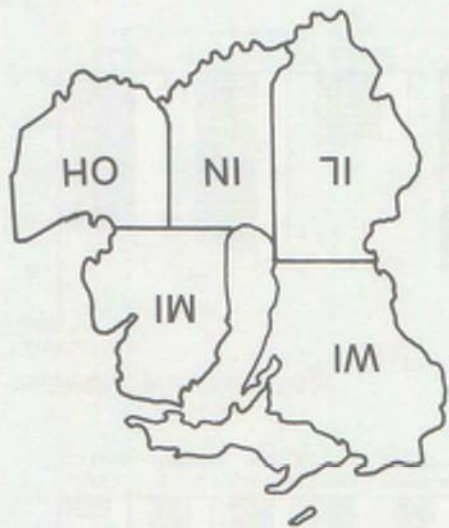
1981 1984 1987

Notes: * Per household consumption and expenditures are for households using the fuel. * Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role. * See Appendix B for a listing of data used in these graphs.

Sources: Energy Information Administration, Office of Energy Markets and End Use, the 1981, 1984, and 1987 Residential Energy Consumption Surveys.

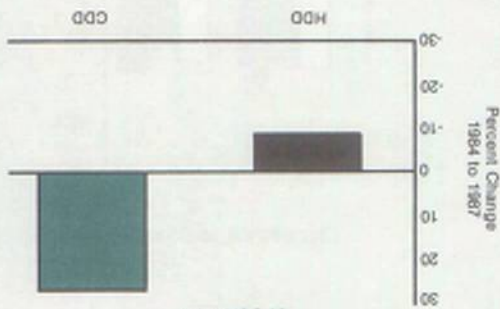
East North Central Census Division Households

- Total consumption and per household consumption of natural gas (among those that use it) declined from 1981 to 1987. One reason for the decline from 1984 to 1987 is that the winter in 1987 was warmer than in 1984. Households that

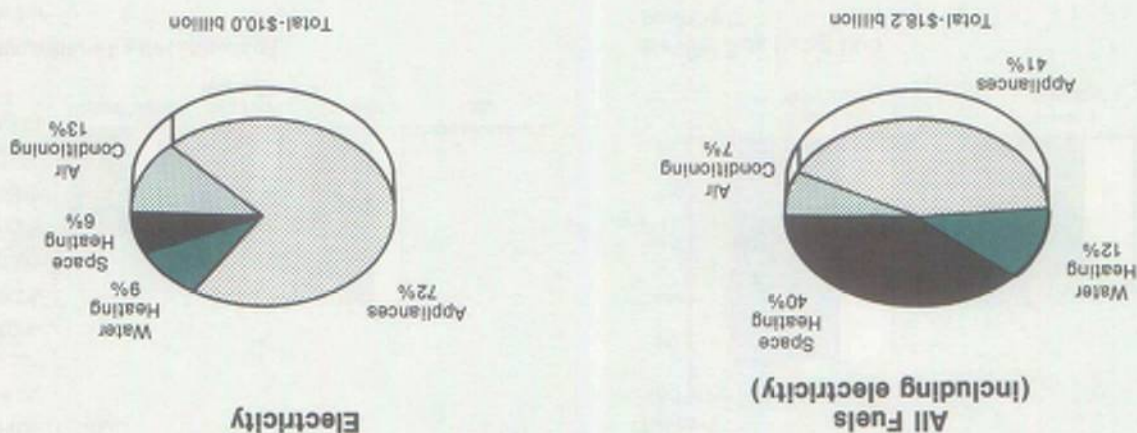


- Expenditures for natural gas were lower in 1987 than in 1984 in total and also when averaged over households that use natural gas, while electricity expenditures were higher. The changes in electricity and natural gas prices were major factors in these trends in expenditures; while changes in consumption contributed at a lesser degree.

Weather

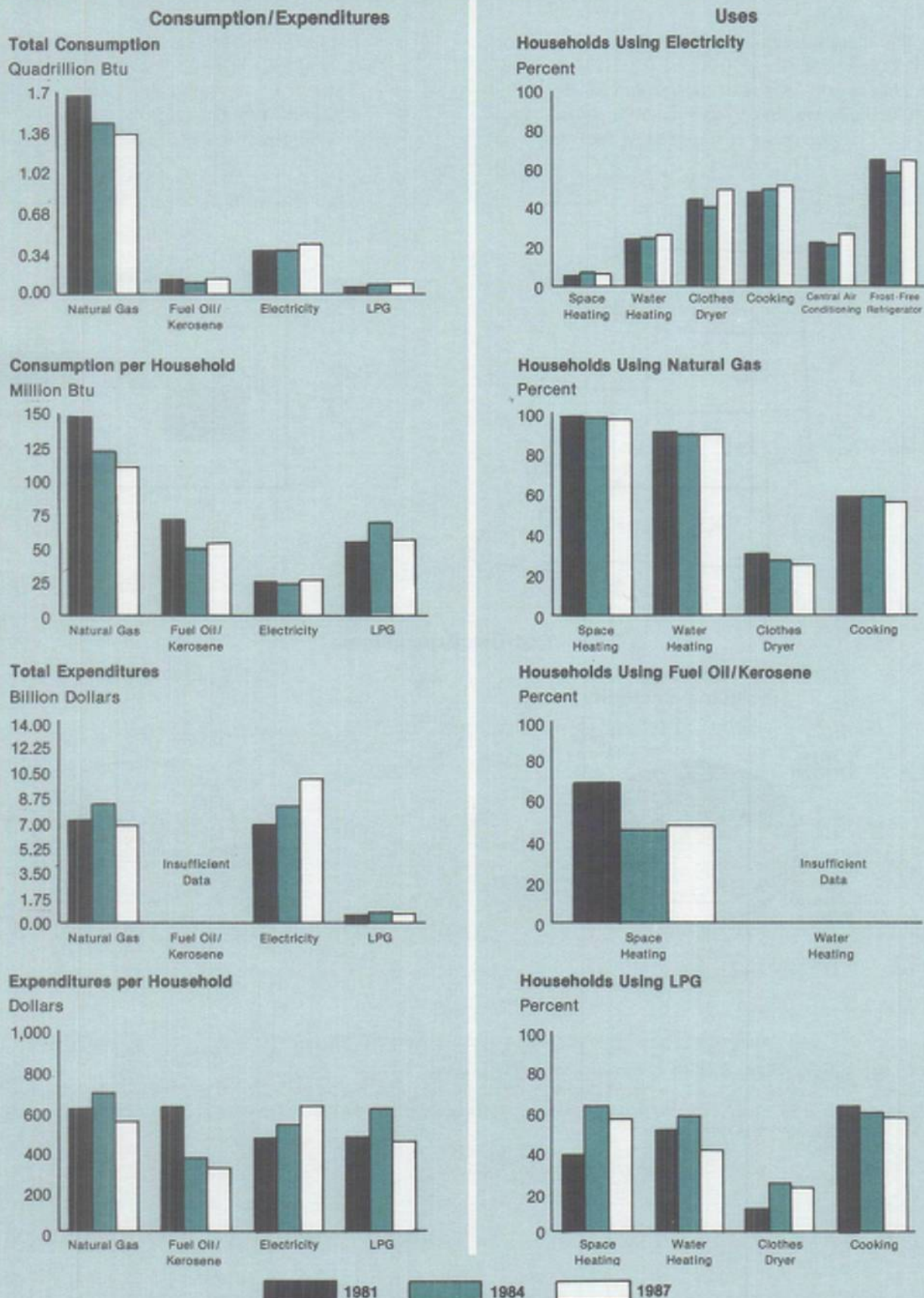


End-Use Expenditures



Note: See Appendix B for a listing of data used in these graphs. Sources: The weather data are from the National Atmospheric and Oceanic Administration; the end-use expenditures data are from Tables 23 and 25, Energy Information Administration, *Household Energy Consumption and Expenditures 1987, Part I: National Data*, EIA-0321/1(87).

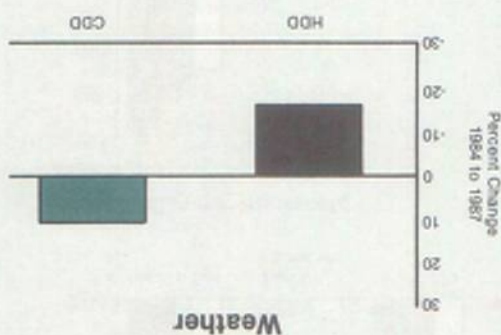
Figure 4. East North Central Census Division Household Energy Trends



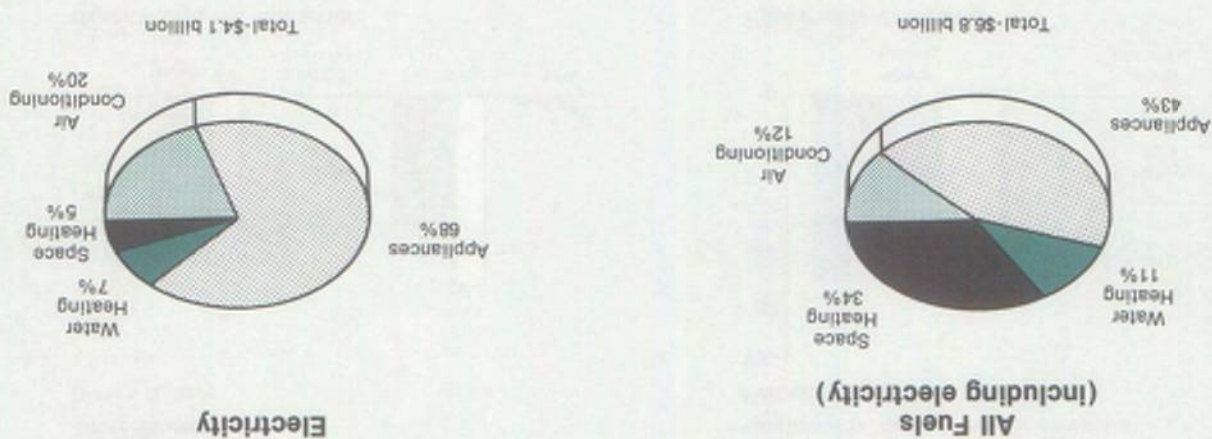
Notes: • Per household consumption and expenditures are for households using the fuel. • Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role. • See Appendix B for a listing of data used in these graphs.
Sources: Energy Information Administration, Office of Energy Markets and End Use, the 1981, 1984, and 1987 Residential Energy Consumption Surveys.

West North Central Census Division Households

- Total consumption and per household consumption of natural gas declined from 1981 to 1987. One reason for the decline from 1984 to 1987 is the much warmer winter in 1987. Natural gas is used as the main space-heating fuel and main
- Expenditures for natural gas were lower in 1987 than in 1984 in total consumption and when averaged over households that use it. Electricity expenditures went up from 1981 to 1987 in total and on a per household basis.

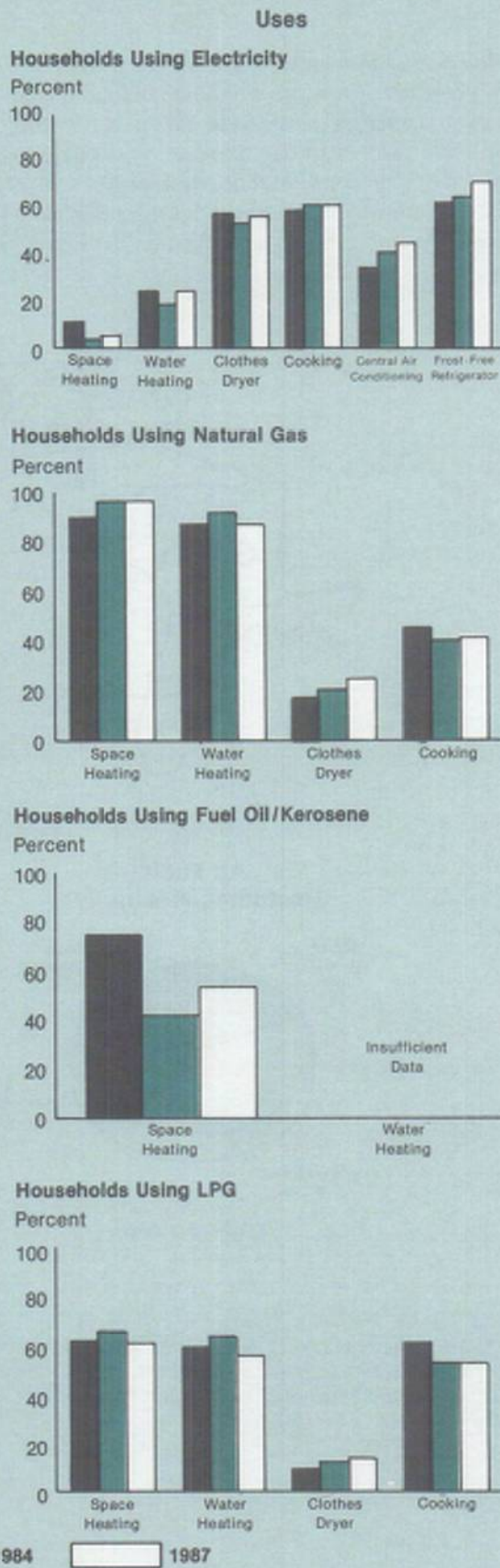
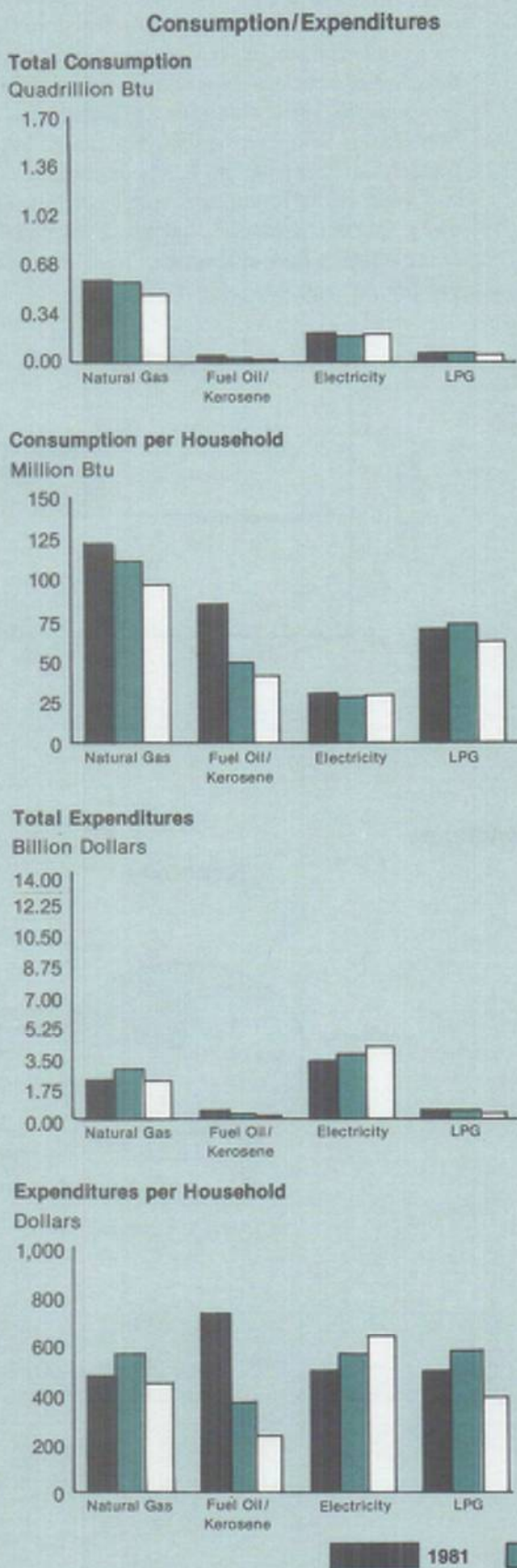


End-Use Expenditures



Note: See Appendix B for a listing of data used in these graphs.
Sources: The weather data are from the National Atmospheric and Oceanic Administration; the end-use expenditures data are from Tables 23 and 25, Energy Information Administration, Household Energy Consumption and Expenditures 1987, Part I: National Data, EIA-0321/1(87).

Figure 5. West North Central Census Division Household Energy Trends



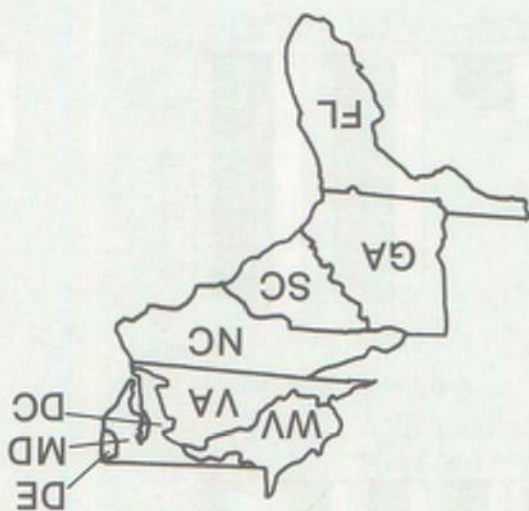
1981 1984 1987

Notes: • Per household consumption and expenditures are for households using the fuel. • Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role. • See Appendix B for a listing of data used in these graphs.
Sources: Energy Information Administration, Office of Energy Markets and End Use, the 1981, 1984, and 1987 Residential Energy Consumption Surveys.

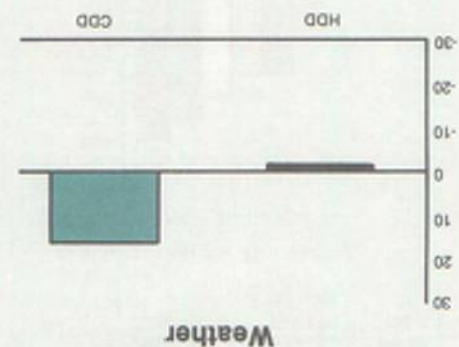
South Atlantic Census Division Households

- Electricity consumption was higher in 1987 than in 1984 both on a per household basis and aggregated over all households. The weather probably contributed to this increase, as the summer of 1987 was considerably warmer than 1984. Also related to the increase was greater use of frost-free refrigerators and electric clothes dryers.

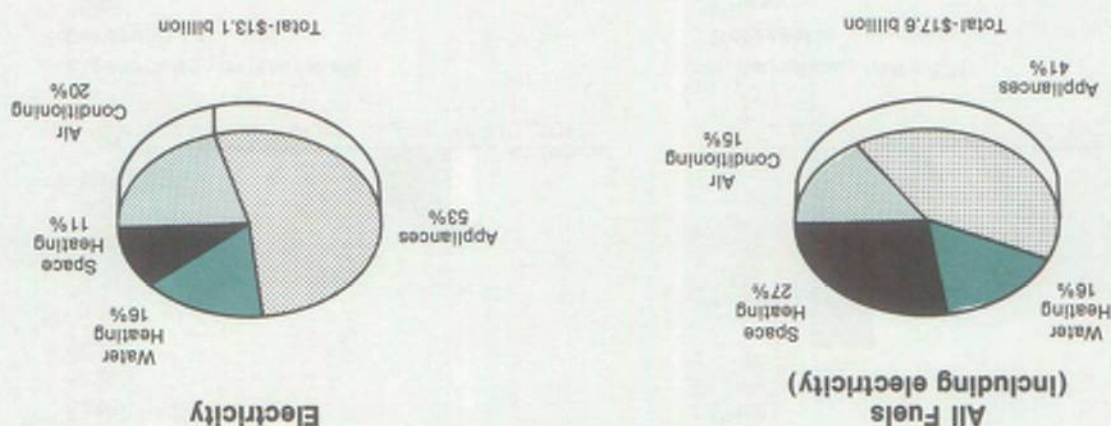
• Consumption of natural gas and fuel oil/kerosene in quadrillion Btu showed little change from 1981 to 1987. When averaged over households that use the fuel oil/kerosene, consumption of fuel oil/kerosene decreased from 1981 to 1984. Since more households were using fuel oil/kerosene in 1984, the total consumption of all households remained stable. Related to the per household decrease in fuel oil/kerosene, consumption is the lower percentage of households using fuel oil/kerosene that use it as their main space-heating fuel; this would lower the average use per household.



Percent Change
1984 to 1987



End-Use Expenditures



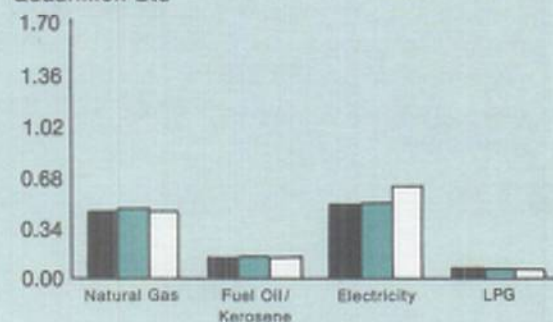
Note: See Appendix B for a listing of data used in these graphs. Sources: The weather data are from the National Atmospheric and Oceanic Administration; the end-use expenditures data are from Tables 23 and 25, Energy Information Administration, Household Energy Consumption and Expenditures 1987, Part I: National Data, EIA-0321/1 (87).

Figure 6. South Atlantic Census Division Household Energy Trends

Consumption/Expenditures

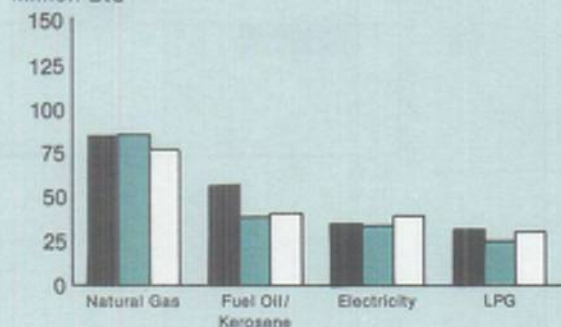
Total Consumption

Quadrillion Btu



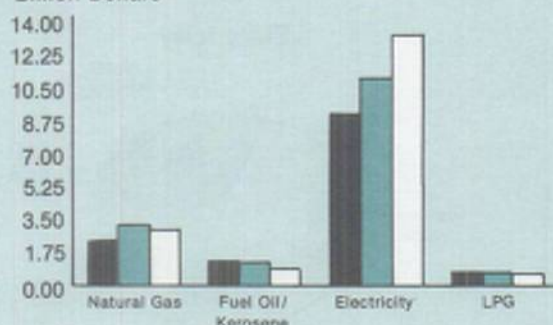
Consumption per Household

Million Btu



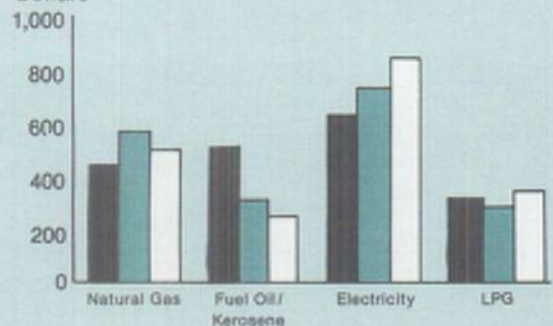
Total Expenditures

Billion Dollars



Expenditures per Household

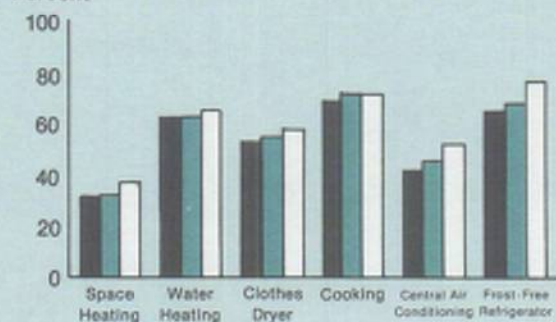
Dollars



Uses

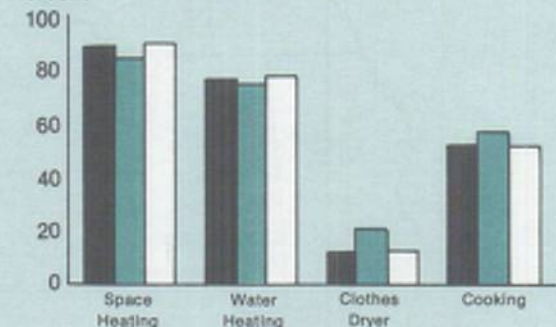
Households Using Electricity

Percent



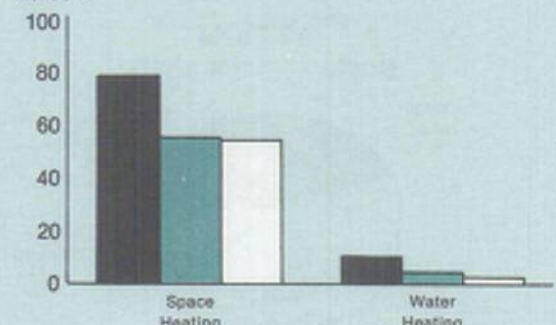
Households Using Natural Gas

Percent



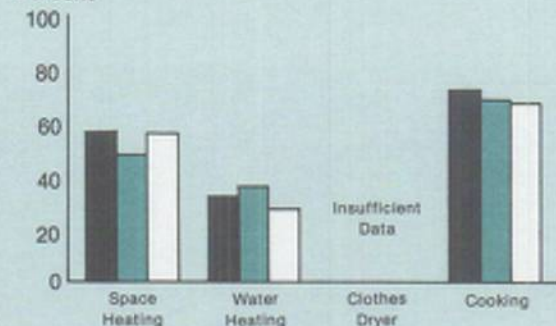
Households Using Fuel Oil/Kerosene

Percent



Households Using LPG

Percent



■ 1981 ■ 1984 □ 1987

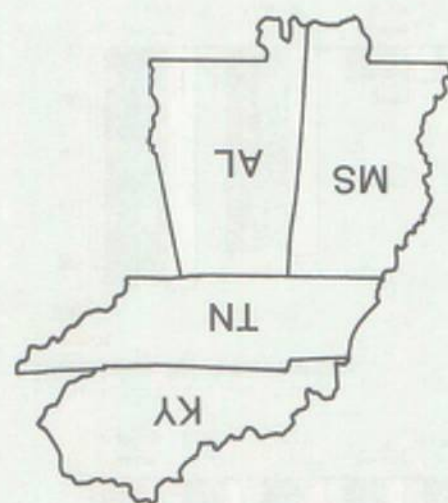
Notes: * Per household consumption and expenditures are for households using the fuel. * Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role. * See Appendix B for a listing of data used in these graphs.

Sources: Energy Information Administration, Office of Energy Markets and End Use, the 1981, 1984, and 1987 Residential Energy Consumption Surveys.

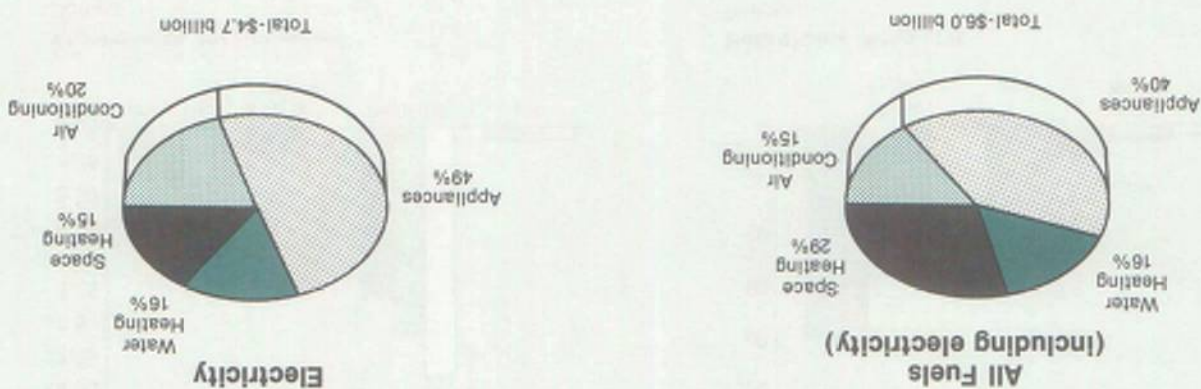
East South Central Census Division Households

- Natural gas consumption dropped in 1984, both in total and when averaged over all households that use it, but remained at the same level in

- Despite a much warmer summer in 1987, electricity consumption showed little change on a per household basis. Relatively more households had central air conditioners in the 1987 RECS than in previous RECS.



End-Use Expenditures



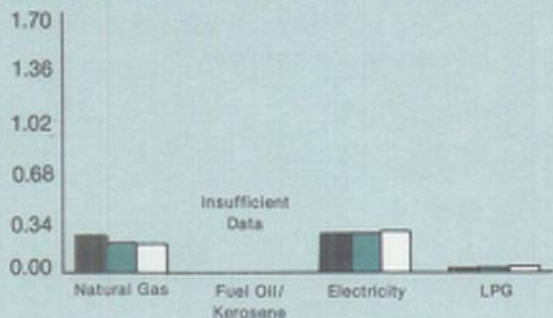
Note: See Appendix B for a listing of data used in these graphs. Sources: The weather data are from the National Atmospheric and Oceanic Administration; the end-use expenditures data are from Tables 23 and 25, Energy Information Administration, *Household Energy Consumption and Expenditures 1987, Part I: National Data*, EIA-0321/1(87).

Figure 7. East South Central Census Division Household Energy Trends

Consumption/Expenditures

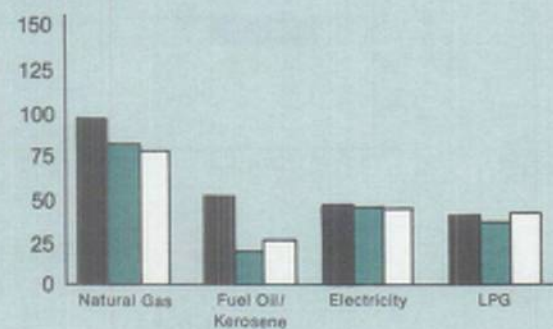
Total Consumption

Quadrillion Btu



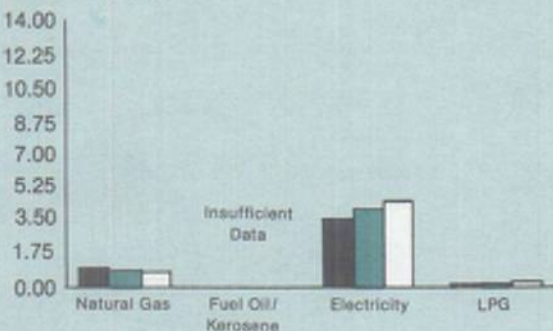
Consumption per Household

Million Btu



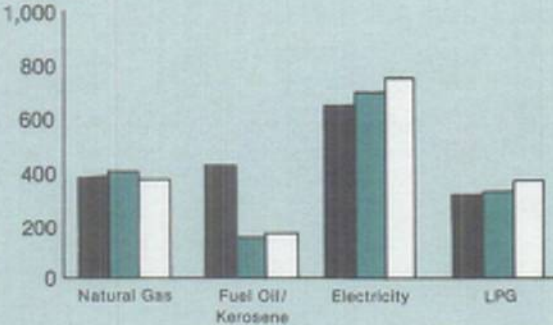
Total Expenditures

Billion Dollars



Expenditures per Household

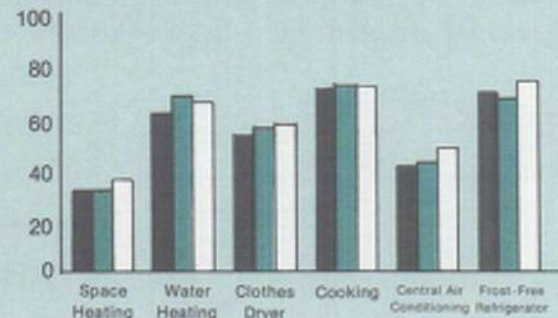
Dollars



Uses

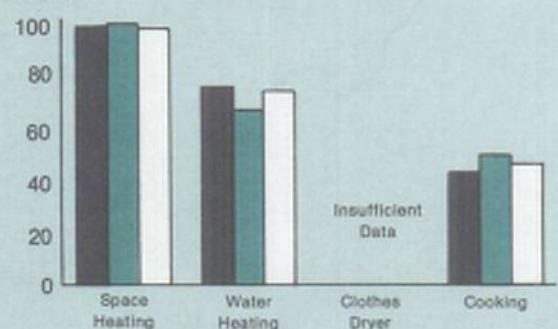
Households Using Electricity

Percent



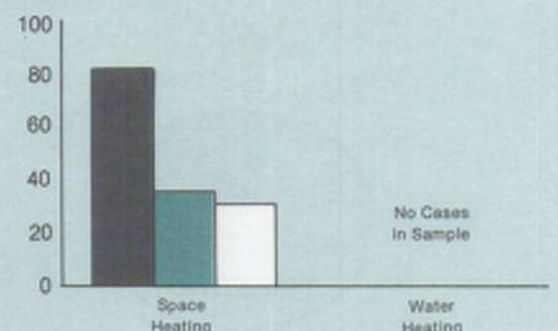
Households Using Natural Gas

Percent



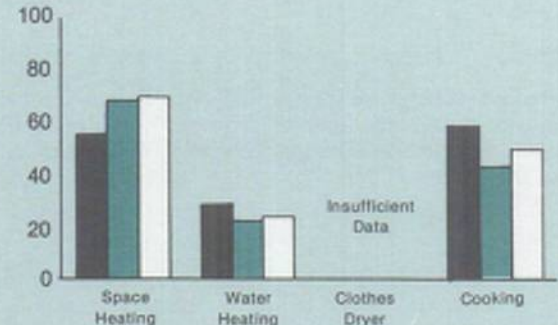
Households Using Fuel Oil/Kerosene

Percent



Households Using LPG

Percent



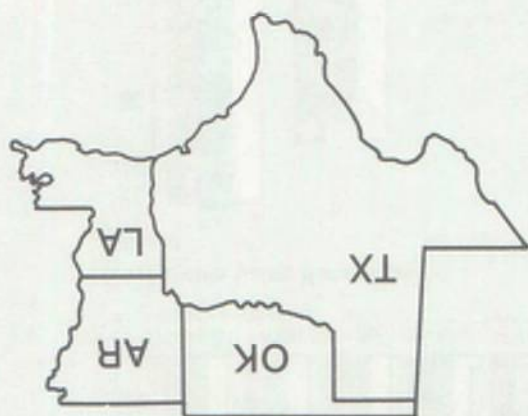
1981 1984 1987

Notes: • Per household consumption and expenditures are for households using the fuel. • Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role. • See Appendix B for a listing of data used in these graphs.
Sources: Energy Information Administration, Office of Energy Markets and End Use, the 1981, 1984, and 1987 Residential Energy Consumption Surveys.

West South Central Census Division Households

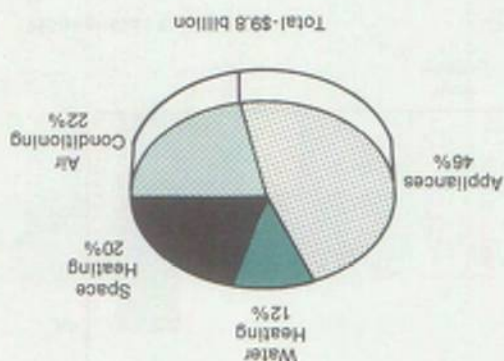
- Total electricity consumption increased from 1981 to 1987; one reason for this increase is the growth in the electricity-using population. The

- Uses of electricity increased from 1981 to 1987 whereas the uses of natural gas remained unchanged or declined. For example, cooking with electricity has become more frequent, while cooking with natural gas has declined among homes that use the fuel.

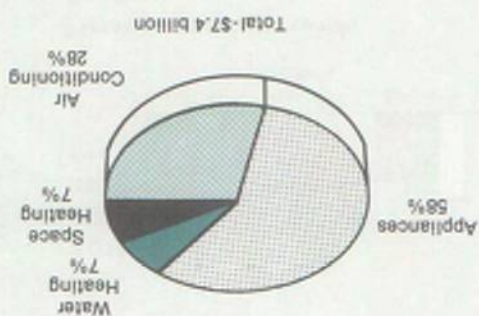


End-Use Expenditures

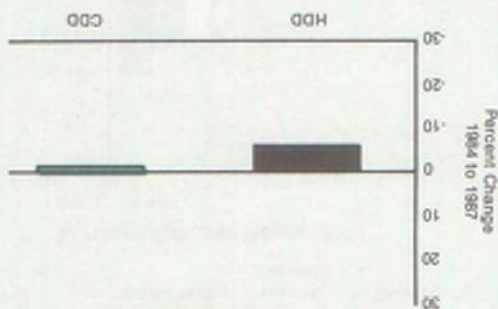
All Fuels
(including electricity)



Electricity

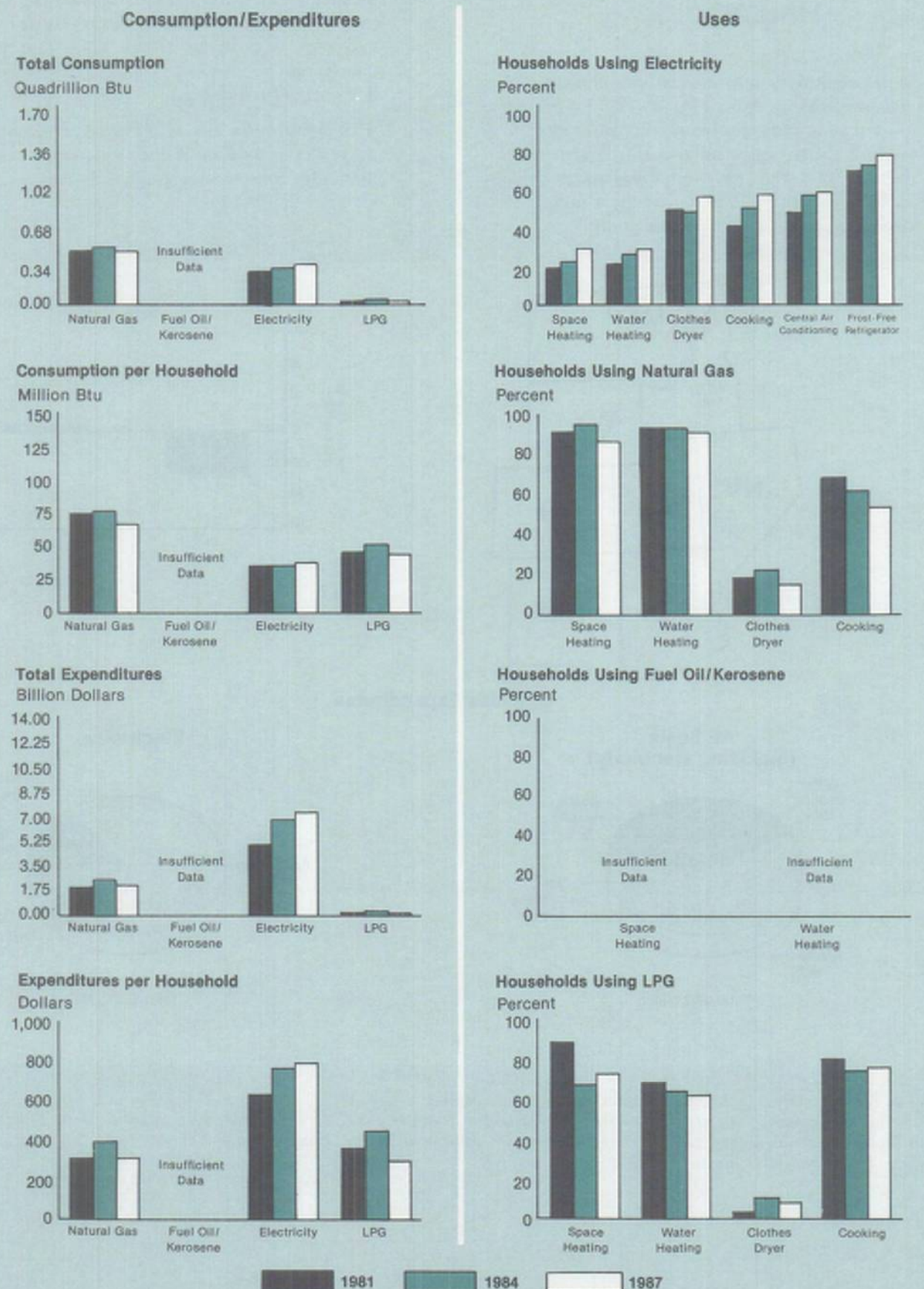


Weather



Note: See Appendix B for a listing of data used in these graphs. Sources: The weather data are from the National Atmospheric and Oceanic Administration; the end-use expenditures data are from Tables 23 and 25, Energy Information Administration, *Household Energy Consumption and Expenditures 1987, Part I: National Data*, EIA-0321/1(87).

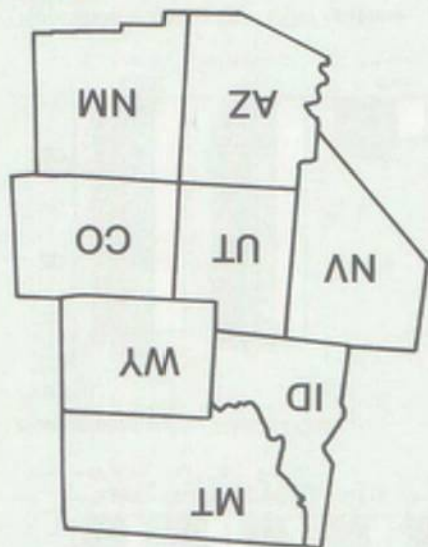
Figure 8. West South Central Division Household Energy Trends



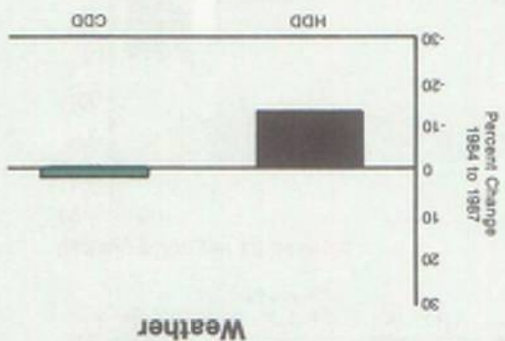
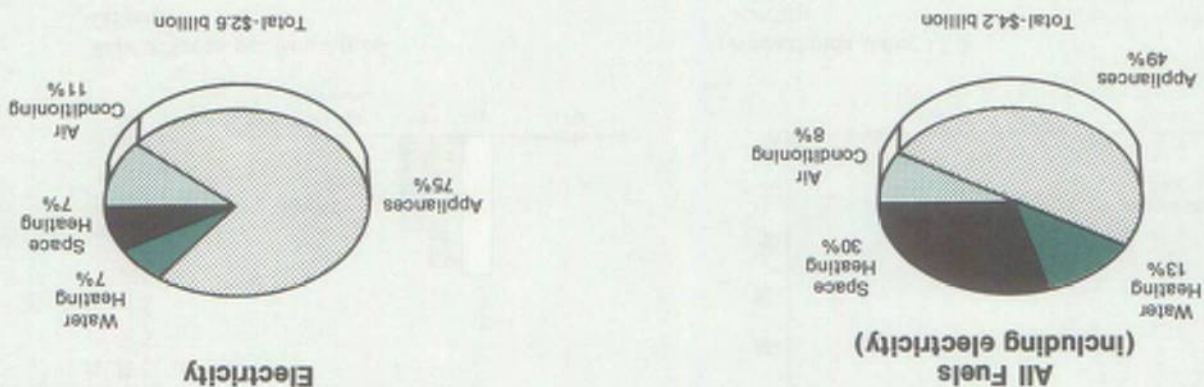
Notes: • Per household consumption and expenditures are for households using the fuel. • Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role. • See Appendix B for a listing of data used in these graphs.
Sources: Energy Information Administration, Office of Energy Markets and End Use, the 1981, 1984, and 1987 Residential Energy Consumption Surveys.

Mountain Census Division Households

- Total electricity and natural gas consumption remained steady from 1981 to 1987. When averaged over users, per household use of electricity and natural gas also remained steady from 1981 to 1987. The 1987 winter was warmer than in 1984, but this did not produce a noticeable decrease in natural gas consumption.



End-Use Expenditures



- Use of electricity for such major uses as space heating and water heating remained steady, which suggests the use of electricity for these purposes is growing at the same rate as the household population. A similar pattern exists for users of natural gas.
- Expenditures for electricity increased from 1981 to 1987; this increase is due to increases in prices since the consumption remained steady.

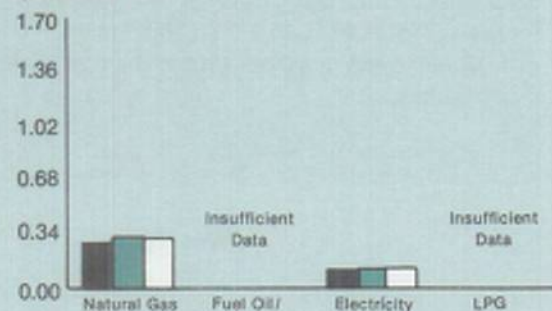
Note: See Appendix B for a listing of data used in these graphs.
Sources: The weather data are from the National Atmospheric and Oceanic Administration; the end-use expenditures data are from Tables 23 and 25, Energy Information Administration, *Household Energy Consumption and Expenditures 1987, Part I: National Data*, EIA-0321/1(87).

Figure 9. Mountain Census Division Household Energy Trends

Consumption/Expenditures

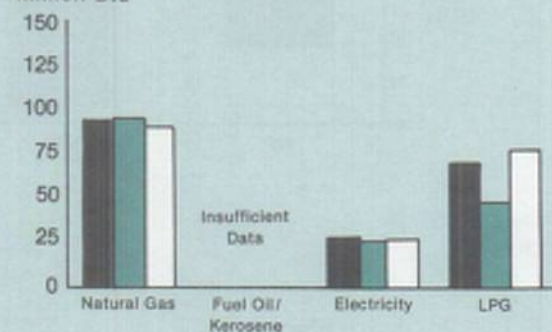
Total Consumption

Quadrillion Btu



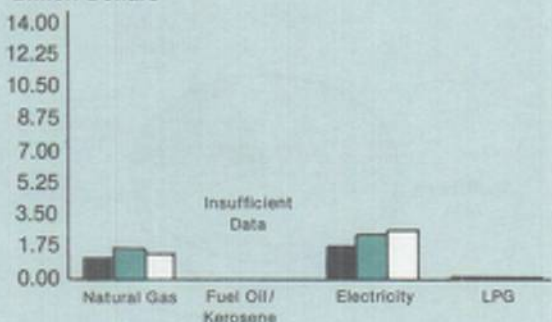
Consumption per Household

Million Btu



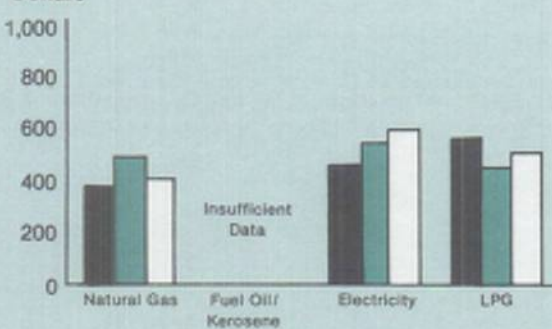
Total Expenditures

Billion Dollars



Expenditures per Household

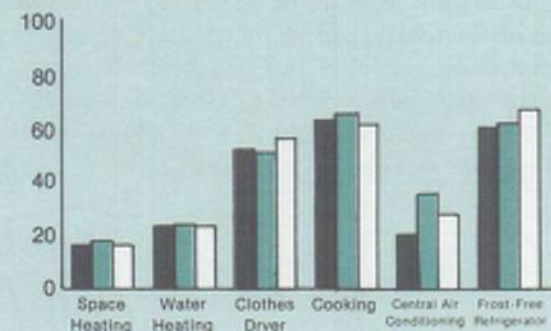
Dollars



Uses

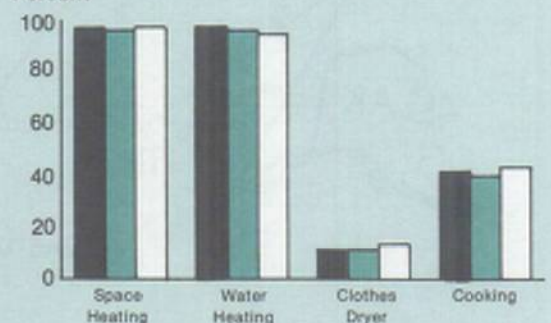
Households Using Electricity

Percent



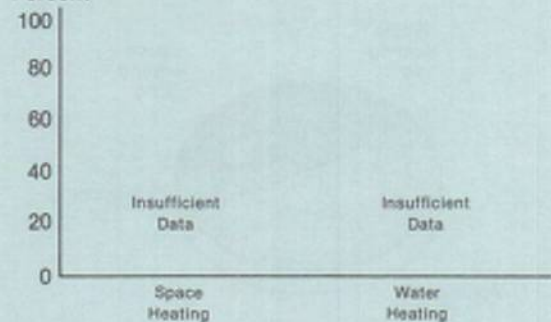
Households Using Natural Gas

Percent



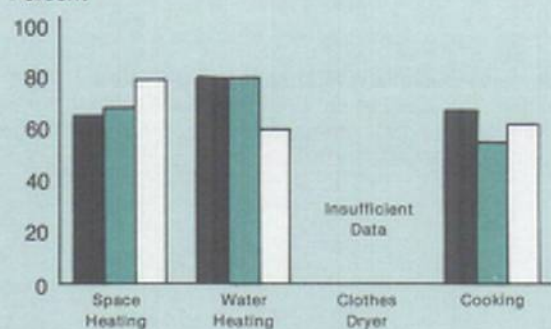
Households Using Fuel Oil/Kerosene

Percent



Households Using LPG

Percent

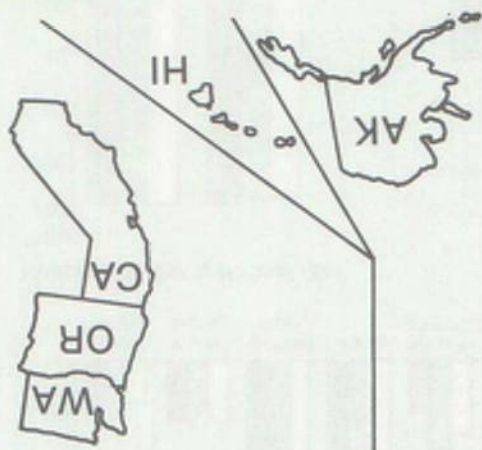


■ 1981 ■ 1984 □ 1987

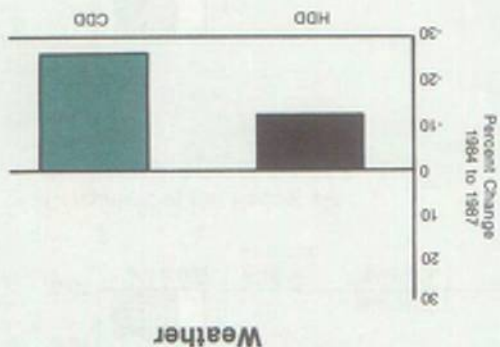
Notes: * Per household consumption and expenditures are for households using the fuel. * Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role. * See Appendix B for a listing of data used in these graphs.
Sources: Energy Information Administration, Office of Energy Markets and End Use, the 1981, 1984, and 1987 Residential Energy Consumption Surveys.

Pacific Census Division Households

- Total consumption and per household electricity consumption remained steady from 1981 to 1987. There has not been a noticeable change in the uses of electricity, except for an increase in use of central air conditioners. One reason electricity consumption may not have shown an increase in 1987 is that the summer was much cooler than it was in 1984.



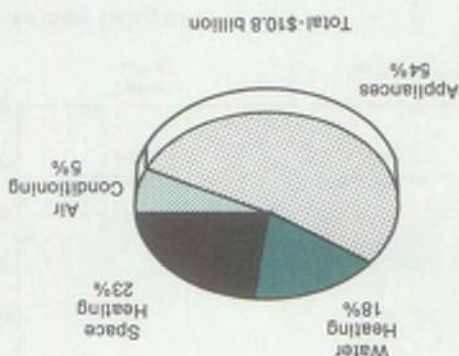
End-Use Expenditures



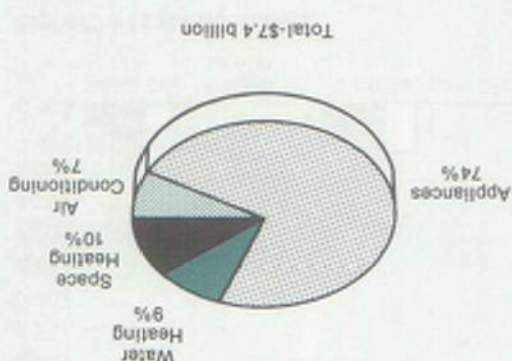
Weather

- Natural gas consumption declined from 1981 to 1987 in total and when averaged over households that use it. Related to this decline is a slight trend toward decreased use of natural gas as the main heating fuel among those households using it and also a milder winter in 1987 than in 1984.
- Per household expenditures for electricity increased from 1981 to 1987. This increase comes from increases in prices rather than increases in consumption.

All Fuels
(including electricity)



Electricity



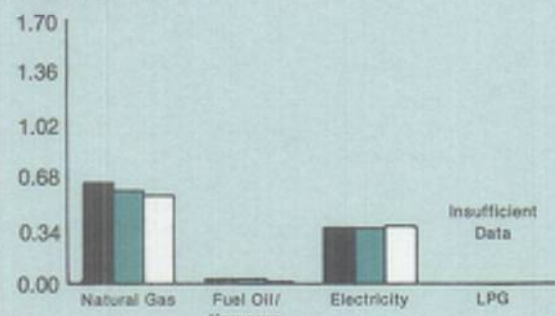
Note: See Appendix B for a listing of data used in these graphs. Sources: The weather data are from the National Atmospheric and Oceanic Administration; the end-use expenditures data are from Tables 23 and 25, Energy Information Administration, *Household Energy Consumption and Expenditures 1987, Part I: National Data*, EIA-0321/1(87).

Figure 10. Pacific Central Division Household Energy Trends

Consumption/Expenditures

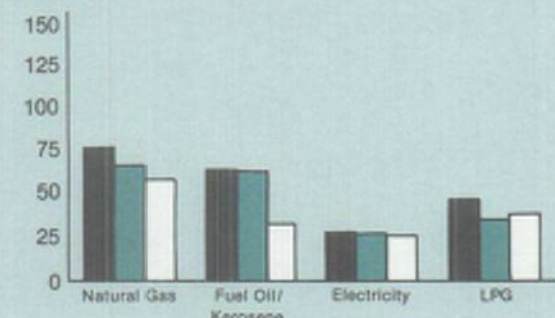
Total Consumption

Quadrillion Btu



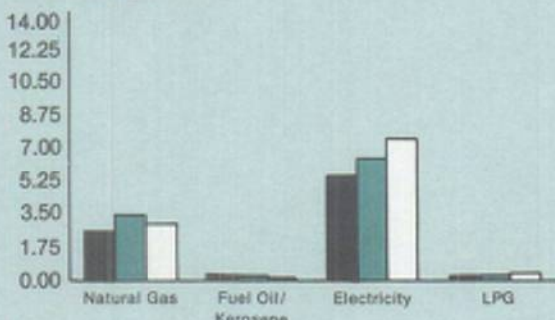
Consumption per Household

Million Btu



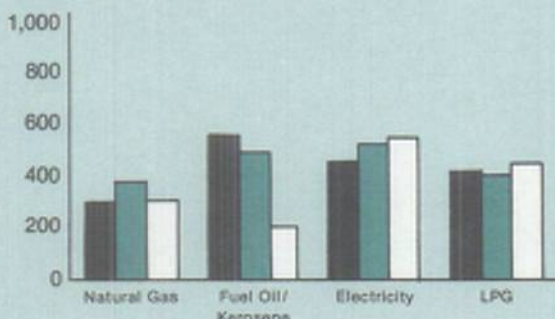
Total Expenditures

Billion Dollars



Expenditures per Household

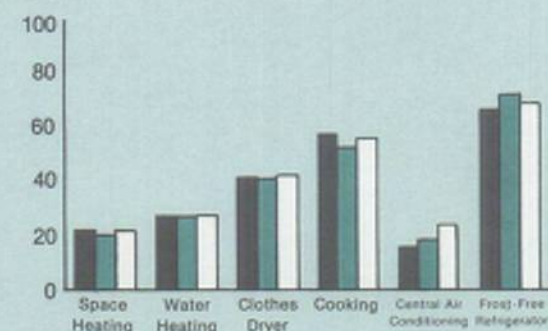
Dollars



Uses

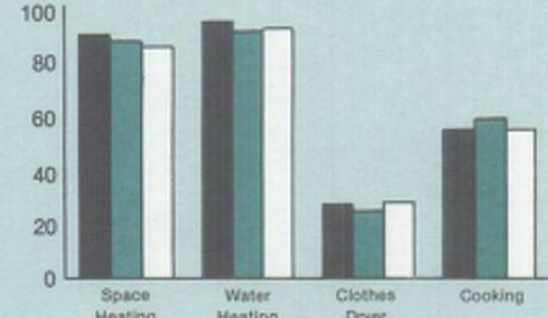
Households Using Electricity

Percent



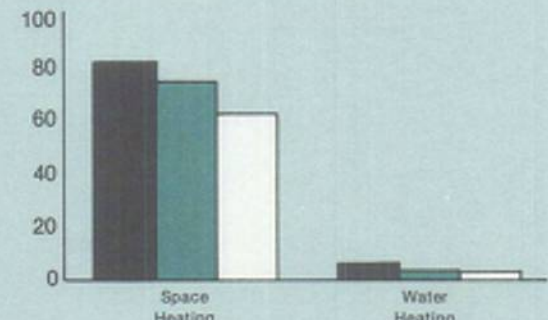
Households Using Natural Gas

Percent



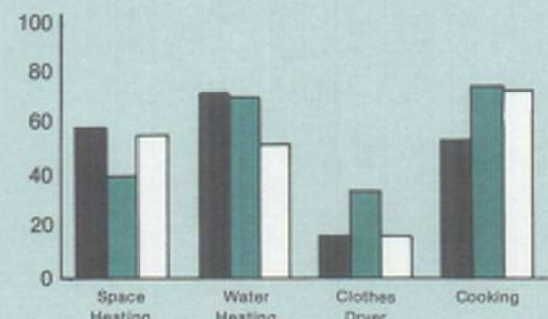
Households Using Fuel Oil/Kerosene

Percent



Households Using LPG

Percent



■ 1981 ■ 1984 □ 1987

Notes: • Per household consumption and expenditures are for households using the fuel. • Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role. • See Appendix B for a listing of data used in these graphs.

Sources: Energy Information Administration, Office of Energy Markets and End Use, the 1981, 1984, and 1987 Residential Energy Consumption Surveys.

Detailed Statistics

The tables that follow present energy consumption and expenditure data at the Census region and division level for U.S. households collected during the 1987 RECS.

Table Organization

The "Detailed Statistics" section contains a series of 8 tables for the total United States, and for each of the four Census regions and within each Census region, the two or three Census divisions that comprise the region. The only exception is the wood consumption tables that do not contain data at the Census division level. The repeating 8 tables are:

First Table	Aggregate Energy Consumption and Expenditures by Major Fuels
Second Table	Total Energy Consumption on a per Household Basis
Third Table	Total Energy Expenditures on a per Household Basis
Fourth Table	Natural Gas Consumption and Expenditures
Fifth Table	Electricity Consumption and Expenditures
Sixth Table	Fuel Oil or Kerosene Consumption and Expenditures

Seventh Table Liquefied Petroleum Gas (LPG) Consumption and Expenditures

Eighth Table Wood Consumption

Following is a quick reference guide for the tables by Census region:

Table Numbers

1 through 8	Total United States
9 through 16	Northeast Census Region
17 through 24	Midwest Census Region
25 through 32	South Census Region
33 through 40	West Census Region

Row and Column Factors

Since the estimates of energy consumption and expenditures are based on the sample surveyed, they are subject to error. To help the reader compute an approximate relative standard error (RSE) for each of the estimates in the detailed tables, row and column factors are displayed on the top line and in the far-right column of each table. To calculate the RSE for a specific estimate, multiply the row factor by the column factor. (See Figure C1 and the related discussion in Appendix C, "Quality of the Data," for more details).

Table 1. Energy Consumption and Expenditures for U.S. Households, 1987

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.535	0.559	0.528	0.952	0.963	0.643	0.608	1.545	1.492	2.864	2.682	
United States	90.5	9.13	97.7	4.83	26.1	2.76	61.6	1.22	7.2	0.32	2.8	3.42
Metropolitan Status												
Metropolitan	70.2	7.23	76.8	4.07	22.3	2.07	47.6	.96	5.6	.13	1.3	3.59
Central City	29.6	3.00	29.7	1.91	10.5	.74	17.1	.34	1.9	.02	.2	5.19
Outside Central City	40.6	4.23	47.1	2.16	11.8	1.33	30.5	.62	3.7	.11	1.1	4.53
Nonmetropolitan	20.3	1.90	21.0	.76	3.9	.69	14.0	.26	1.6	.19	1.5	7.44
Payment Method for Utilities												
All Paid by Household	73.7	7.76	84.8	4.01	21.5	2.49	54.9	.95	5.8	.30	2.7	3.82
Some or None Paid by Household, Other Method	16.8	1.37	12.9	.82	4.6	.26	6.7	.28	1.4	.01	.1	10.46
Housing Structure												
Mobile Home	5.1	.39	4.8	.12	.6	.16	3.3	.05	.3	.06	.6	15.74
Single Family	60.5	6.84	73.7	3.59	19.2	2.13	46.9	.87	5.3	.25	2.2	4.22
Building of 2 or More Units	25.0	1.90	19.2	1.12	6.3	.47	11.4	.30	1.6	.09	0.9	7.36
Number of Rooms												
1 to 3	12.9	.76	8.1	.37	2.0	.22	5.1	.14	.7	.03	.2	11.19
4 to 5	38.6	3.38	36.4	1.77	9.6	1.04	22.9	.41	2.4	.17	1.5	4.56
6 or More	39.0	4.99	53.3	2.69	14.5	1.50	33.6	.68	4.1	.12	1.1	4.80
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	32.3	2.38	25.4	1.26	6.9	.69	15.7	.32	1.8	.10	1.0	5.49
1,000 to 1,999	36.8	3.65	40.7	1.87	10.1	1.23	26.8	.42	2.5	.14	1.2	4.71
2,000 or More	21.4	3.10	31.7	1.70	9.1	.85	19.1	.48	2.9	.07	.6	6.57
Year of Construction												
1949 or Before	29.7	3.44	32.3	2.01	11.1	.70	16.6	.64	3.7	.10	.9	5.82
1950 to 1974	39.1	3.98	42.3	2.19	11.8	1.19	26.5	.47	2.8	.13	1.2	5.10
1975 or After	21.7	1.70	23.2	.63	3.3	.87	18.5	.11	.7	.09	.7	8.85
Status of Unit												
Owned	58.8	6.60	71.8	3.38	18.2	2.07	45.8	.89	5.4	.27	2.4	4.21
Rented	31.7	2.53	26.0	1.45	8.0	.69	15.7	.34	1.8	.05	.4	5.94
1987 Family Income												
Less than \$10,000	17.7	1.54	15.2	.87	4.6	.39	8.6	.21	1.2	.08	.7	8.01
\$10,000 to \$19,999	21.6	1.98	20.4	1.07	5.7	.55	12.2	.27	1.6	.10	.8	6.05
\$20,000 to \$34,999	24.9	2.44	26.8	1.23	6.6	.79	17.4	.33	2.0	.09	.8	5.45
\$35,000 or More	26.3	3.17	35.4	1.67	9.1	1.03	23.3	.41	2.4	.06	.5	5.77
Below 100 Percent of Poverty Line	11.8	1.05	10.6	.60	3.3	.28	6.2	.11	.6	.07	.6	9.68
Below 125 Percent of Poverty Line	18.2	1.65	16.7	.93	5.0	.44	9.8	.19	1.1	.09	.8	7.91
Assistance for Heating in Winter												
Yes	4.8	.48	4.6	.28	1.5	.10	2.4	.05	.3	.04	.3	12.36
No	65.8	8.65	93.2	4.55	24.6	2.65	59.2	1.17	6.9	.28	2.5	3.33
Age of Householder												
Under 35 Years	28.0	2.52	27.3	1.39	7.5	.78	17.6	.27	1.6	.07	.7	5.56
35 to 59 Years	36.9	4.03	44.6	2.07	11.1	1.32	29.2	.52	3.1	.13	1.2	4.30
60 Years and Over	25.7	2.58	25.9	1.38	7.6	.66	14.8	.43	2.5	.11	1.0	5.63

See footnotes at end of table.

Table 1. Energy Consumption and Expenditures for U.S. Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.535	0.559	0.528	0.952	0.963	0.643	0.608	1.545	1.492	2.864	2.682	
Household Size												
1 Person	21.6	1.71	16.6	0.99	5.3	0.42	9.4	0.25	1.4	0.06	0.6	5.88
2 to 4 Persons	59.7	6.25	68.2	3.21	17.4	1.98	43.9	.84	5.0	.21	1.9	3.53
5 or More Persons	9.3	1.16	12.9	.63	3.5	.36	8.3	.14	.8	.04	.4	8.80
Secondary Heating												
Yes	37.4	4.00	44.7	1.89	10.1	1.38	29.7	.54	3.3	.18	1.6	5.04
No	53.2	5.13	53.1	2.94	16.1	1.37	31.9	.68	3.9	.13	1.2	3.98
Hot Water Fuel												
Natural Gas	49.2	5.71	52.0	4.41	23.7	1.13	27.4	.16	1.0	Q	Q	5.88
Electricity	32.0	2.38	35.0	.38	2.1	1.43	28.9	.44	2.6	.13	1.3	6.95
Fuel Oil or Kerosene	5.3	.72	6.5	.02	.3	.09	2.8	.60	3.4	*	*	10.99
Other	4.0	.33	4.2	.02	.1	.10	2.4	.03	.2	.18	1.5	17.21
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	8.5	.94	8.8	.42	2.1	.23	4.8	.21	1.2	.08	.7	19.61
5,500 to 7,000 HDD	25.9	3.26	30.0	2.09	10.6	.69	16.3	.44	2.6	.05	.5	8.73
4,000 to 5,499 HDD	21.9	2.34	24.9	1.09	6.6	.67	14.9	.51	2.9	.06	.5	10.94
Under 4,000 HDD	17.8	1.38	16.6	.73	4.1	.53	11.5	.05	.4	.07	.7	14.32
2,000 CDD or More and --												
Under 4,000 HDD	16.3	1.20	17.4	.51	2.8	.64	14.2	Q	Q	.04	.4	13.25

* Data cannot be displayed due to rounding.
 Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.
 Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.
 Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 2. Total Consumption per U.S. Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987

Household Characteristics	Total Consumption in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.669	0.389	1.045	0.420	2.057	0.778	1.855	0.732	3.297	1.221	
United States	90.5	100.8	50.0	117.9	17.9	54.3	12.2	126.4	4.1	92.5	3.30
Metropolitan Status											
Metropolitan	70.2	102.9	41.9	118.1	14.5	52.3	9.4	130.0	1.8	82.4	3.95
Central City	29.6	101.2	19.5	115.9	5.6	47.6	3.7	115.3	.3	63.6	6.07
Outside Central City	40.6	104.1	22.3	120.0	8.9	55.2	5.7	139.4	1.5	86.5	4.94
Nonmetropolitan	20.3	93.6	8.1	116.9	3.4	62.9	2.8	114.4	2.3	100.5	6.14
Payment Method for Utilities											
All Paid by Household	73.7	105.2	39.9	124.9	14.9	57.9	9.0	134.4	3.9	94.0	3.35
Some or None Paid by Household, Other Method	16.8	81.7	10.1	90.3	3.1	36.7	3.2	103.5	.2	64.3	9.58
Housing Structure											
Mobile Home	5.1	76.5	1.7	95.6	1.0	52.8	.8	88.1	1.2	70.8	9.30
Single Family	60.5	113.1	34.3	130.6	9.9	67.1	7.8	139.3	2.9	101.6	3.33
Building of 2 or More Units	25.0	76.0	14.0	89.4	7.0	36.4	3.5	106.8	NC	NC	5.99
Number of Rooms											
1 to 3	12.9	58.6	5.8	70.4	4.2	33.4	1.8	89.3	.4	68.5	7.38
4 to 5	38.6	87.5	21.1	101.6	7.4	50.6	4.9	108.3	2.5	82.1	3.78
6 or More	39.0	128.0	23.1	144.8	6.3	72.7	5.5	154.3	1.2	121.3	3.92
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	32.3	73.5	16.8	87.6	7.2	39.7	4.3	96.9	1.8	68.5	4.47
1,000 to 1,999	36.8	99.2	20.0	116.2	8.0	58.2	4.3	122.5	1.8	101.7	4.08
2,000 or More	21.4	144.9	13.2	159.1	2.7	81.5	3.6	165.6	.6	135.6	4.37
Year of Construction											
1949 or Before	29.7	115.7	18.1	126.6	1.8	51.7	6.1	133.9	1.2	93.4	5.55
1950 to 1974	39.1	101.9	24.4	114.3	6.0	55.1	4.9	119.4	1.7	92.0	4.41
1975 or After	21.7	78.4	7.5	108.4	10.1	54.2	1.2	116.6	1.2	92.2	6.90
Status of Unit											
Owned	58.8	112.2	32.0	131.1	10.1	65.4	8.2	137.2	3.4	96.1	3.52
Rented	31.7	79.7	18.0	94.3	7.8	39.9	4.0	103.9	.7	76.0	5.44
1987 Family Income											
Less than \$10,000	17.7	87.3	9.8	104.0	3.0	42.3	2.4	106.1	1.2	76.3	6.34
\$10,000 to \$19,999	21.6	91.6	12.0	106.7	3.8	43.8	3.0	118.1	1.4	88.4	5.18
\$20,000 to \$34,999	24.9	97.7	13.0	115.1	5.3	54.6	3.6	117.5	1.0	104.0	4.77
\$35,000 or More	26.3	120.5	15.2	138.1	5.9	66.9	3.2	159.3	.6	115.9	4.97
Below 100 Percent of Poverty Line	11.8	89.3	6.4	109.8	2.0	45.3	1.3	102.0	1.0	80.9	7.06
Below 125 Percent of Poverty Line	18.2	90.7	10.1	108.8	3.0	45.9	2.3	105.6	1.3	84.8	5.97
Assistance for Heating in Winter											
Yes	4.8	101.1	2.7	119.5	.5	49.5	.7	107.9	.4	94.5	10.24
No	85.8	100.8	47.3	117.8	17.4	54.4	11.5	127.5	3.7	92.2	3.37

See footnotes at end of table.

Table 2. Total Consumption per U.S. Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors	0.669	0.389	1.045	0.420	2.057	0.778	1.855	0.732	3.297	1.221	
Age of Householder											
Under 35 Years	28.0	90.0	15.6	107.3	6.7	47.8	3.0	114.8	0.9	90.5	4.80
35 to 59 Years	36.9	109.3	19.8	129.6	7.5	62.0	4.8	137.9	1.6	96.0	3.78
60 Years and Over	25.7	100.4	14.6	113.2	3.7	50.4	4.4	121.9	1.6	90.1	5.37
Household Size											
1 Person	21.6	79.4	12.0	94.8	4.9	38.0	2.9	100.2	1.0	80.1	6.37
2 to 4 Persons	59.7	104.7	32.6	122.2	11.9	58.5	8.1	131.4	2.7	94.5	3.41
5 or More Persons	9.3	125.9	5.3	143.2	1.1	81.2	1.2	155.5	.5	106.5	6.42
Secondary Heating											
Yes	37.4	107.0	18.3	129.3	7.4	64.9	5.0	135.3	2.3	92.1	4.15
No	53.2	96.5	31.7	111.3	10.5	46.8	7.2	120.2	1.9	92.9	4.04
Hot Water Fuel											
Natural Gas	49.2	115.9	44.8	118.8	2.2	47.0	1.5	145.1	NC	NC	5.73
Electricity	32.0	74.3	4.9	110.4	15.4	55.3	5.1	112.3	2.2	86.4	4.86
Fuel Oil or Kerosene	5.3	136.4	Q	Q	NC	NC	5.2	137.5	NC	NC	7.61
Other	4.0	81.2	.2	90.9	.3	54.9	.4	95.7	1.9	99.4	13.78
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	8.5	110.4	3.9	126.8	.6	59.2	2.0	121.5	.8	112.9	10.23
5,500 to 7,000 HDD	25.9	125.9	17.7	136.6	2.6	61.6	3.7	145.7	.5	114.3	6.69
4,000 to 5,499 HDD	21.9	106.7	10.2	127.6	4.2	56.2	5.3	123.3	.8	100.4	7.30
Under 4,000 HDD	17.8	77.4	10.6	87.7	4.0	51.3	.8	93.6	1.0	93.4	8.32
2,000 CDD or More and --											
Under 4,000 HDD	16.3	73.7	7.6	98.6	6.4	51.4	.3	68.9	1.1	60.5	11.77

NC No cases in sample.
 Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.
 Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. • Column totals will not sum to total number of households because 6.3 million households with no main heating fuel or with other main heating fuel, such as wood, were not included.
 Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 3. Total Expenditures per U.S. Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987

Household Characteristics	Total Expenditures in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.697	0.328	1.097	0.432	2.158	0.801	1.943	0.786	3.457	1.011	
United States	90.5	1,080	50.0	1,073	17.9	1,038	12.2	1,260	4.1	1,163	3.10
Metropolitan Status											
Metropolitan	70.2	1,093	41.9	1,086	14.5	1,023	3.4	1,276	1.8	1,117	3.69
Central City	29.6	1,001	19.5	1,029	5.6	877	3.7	1,075	.3	1,009	5.67
Outside Central City	40.6	1,160	22.3	1,136	8.9	1,114	5.7	1,405	1.5	1,140	4.56
Nonmetropolitan	20.3	1,035	8.1	1,007	3.4	1,105	2.8	1,208	2.3	1,200	5.80
Payment Method for Utilities											
All Paid by Household	73.7	1,150	39.9	1,151	14.9	1,119	3.0	1,382	3.9	1,185	3.16
Some or None Paid by Household, Other Method	16.8	768	10.1	767	3.1	650	3.2	912	.2	779	9.24
Housing Structure											
Mobile Home	5.1	948	1.7	885	1.0	1,006	.8	1,031	1.2	981	10.06
Single Family	60.5	1,218	34.3	1,204	9.9	1,287	7.8	1,425	2.9	1,240	3.44
Building of 2 or More Units	25.0	771	14.0	775	7.0	694	3.5	947	NC	NC	5.60
Number of Rooms											
1 to 3	12.9	625	5.8	579	4.2	634	1.8	739	.4	851	7.90
4 to 5	38.6	942	21.1	910	7.4	955	4.9	1,114	2.5	1,044	3.47
6 or More	39.0	1,366	23.1	1,347	6.3	1,408	5.5	1,558	1.2	1,505	3.67
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	32.3	786	16.8	767	7.2	745	4.3	937	1.8	899	4.38
1,000 to 1,999	36.8	1,105	20.0	1,083	8.0	1,125	4.3	1,258	1.8	1,265	3.69
2,000 or More	21.4	1,480	13.2	1,447	2.7	1,563	3.6	1,642	.6	1,636	4.69
Year of Construction											
1949 or Before	29.7	1,087	18.1	1,077	1.8	978	6.1	1,279	1.2	1,138	5.61
1950 to 1974	39.1	1,081	24.4	1,079	6.0	1,002	4.9	1,229	1.7	1,157	4.17
1975 or After	21.7	1,067	7.5	1,045	10.1	1,070	1.2	1,292	1.2	1,198	6.71
Status of Unit											
Owned	58.8	1,221	32.0	1,218	10.1	1,264	3.2	1,397	3.4	1,211	3.39
Rented	31.7	819	18.0	816	7.8	746	4.0	977	.7	942	5.20
1987 Family Income											
Less than \$10,000	17.7	859	9.8	868	3.0	772	2.4	985	1.2	982	6.22
\$10,000 to \$19,999	21.6	944	12.0	933	3.8	830	3.0	1,170	1.4	1,099	4.86
\$20,000 to \$34,999	24.9	1,072	13.0	1,057	5.3	1,040	3.6	1,196	1.0	1,295	4.62
\$35,000 or More	26.3	1,347	15.2	1,330	5.9	1,306	3.2	1,622	.6	1,467	4.80
Below 100 Percent of Poverty Line	11.8	904	6.4	937	2.0	822	1.3	1,005	1.0	1,002	6.89
Below 125 Percent of Poverty Line	18.2	918	10.1	938	3.0	823	2.3	1,030	1.3	1,041	5.90
Assistance for Heating in Winter											
Yes	4.8	957	2.7	978	.5	847	.7	1,070	.4	1,015	9.45
No	85.8	1,086	47.3	1,079	17.4	1,044	11.5	1,271	3.7	1,180	3.15

See footnotes at end of table.

Table 3. Total Expenditures per U.S. Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.697	0.328	1.097	0.432	2.158	0.801	1.943	0.786	3.457	1.011	
Age of Householder											
Under 35 Years	28.0	974	15.6	965	6.7	917	3.0	1,178	0.9	1,166	4.67
35 to 59 Years	36.9	1,208	19.8	1,206	7.5	1,200	4.8	1,433	1.6	1,186	3.56
60 Years and Over	25.7	1,010	14.6	1,008	3.7	932	4.4	1,130	1.6	1,138	5.37
Household Size											
1 Person	21.6	769	12.0	775	4.9	702	2.9	883	1.0	972	5.84
2 to 4 Persons	59.7	1,143	32.6	1,133	11.9	1,129	8.1	1,331	2.7	1,202	3.24
5 or More Persons	9.3	1,397	5.3	1,377	1.1	1,548	1.2	1,690	.5	1,336	6.29
Secondary Heating											
Yes	37.4	1,195	18.3	1,205	7.4	1,208	5.0	1,406	2.3	1,190	4.05
No	53.2	999	31.7	997	10.5	919	7.2	1,160	1.9	1,132	3.79
Hot Water Fuel											
Natural Gas	49.2	1,056	44.8	1,066	2.2	676	1.5	1,411	NC	NC	5.42
Electricity	32.0	1,094	4.9	1,138	15.4	1,087	5.1	1,240	2.2	1,197	4.60
Fuel Oil or Kerosene	5.3	1,244	Q	Q	NC	NC	5.2	1,249	NC	NC	8.01
Other	4.0	1,033	.2	1,062	.3	1,204	.4	1,104	1.9	1,125	11.95
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	8.5	1,030	3.9	970	.6	1,082	2.0	1,188	.8	1,175	9.01
5,500 to 7,000 HDD	25.9	1,156	17.7	1,118	2.6	1,120	3.7	1,427	.5	1,407	6.96
4,000 to 5,499 HDD	21.9	1,138	10.2	1,202	4.2	1,016	5.3	1,198	.8	1,218	7.74
Under 4,000 HDD	17.8	931	10.6	898	4.0	931	.8	1,174	1.0	1,217	8.13
2,000 CDD or More and --											
Under 4,000 HDD	16.3	1,068	7.6	1,093	6.4	1,083	.3	1,026	1.1	952	9.53

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. • Column totals will not sum to total number of households because 6.3 million households with no main heating fuel or with other main heating fuel, such as wood, were not included.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 4. Natural Gas Consumption and Expenditures for U.S. Households, 1987

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Flow Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
	RSE Column Factors:	1.550	1.010	1.010	1.057	0.493	1.775	0.859	0.859		0.928
United States	57.3	81.8	84.3	456	5.41	50.0	90.2	93.0	497	2.00
Metropolitan Status										
Metropolitan	48.7	81.1	83.6	457	5.47	41.9	90.6	93.4	504	2.18
Central City	23.3	79.5	81.9	449	5.48	19.5	90.9	93.7	504	2.90
Outside Central City	25.4	82.6	85.1	465	5.47	22.3	90.4	93.2	504	2.46
Nonmetropolitan	8.6	85.6	88.3	450	5.10	8.1	87.9	90.7	460	4.43
Natural Gas Paid by Household										
Yes	44.3	88.3	91.1	490	5.38	40.0	94.4	97.3	518	2.38
No	13.1	59.6	61.4	343	5.58	10.0	73.1	75.3	413	4.54
Housing Structure										
Mobile Home	1.7	68.9	71.1	369	5.19	1.7	70.2	72.4	375	7.29
Single Family	37.1	93.8	96.7	518	5.36	34.3	98.4	101.5	540	2.30
Building of 2 or More Units	18.5	58.7	60.5	339	5.61	14.0	72.3	74.5	406	3.44
Number of Rooms										
1 to 3	8.2	44.5	45.9	250	5.45	5.8	57.0	58.8	313	5.63
4 to 5	23.8	72.0	74.2	402	5.41	21.1	78.3	80.7	430	2.28
6 or More	25.3	103.0	106.2	574	5.41	23.1	109.4	112.8	605	2.39
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	20.7	59.3	61.2	334	5.46	16.8	68.9	71.0	380	2.71
1,000 to 1,999	22.2	81.6	84.1	456	5.42	20.0	87.3	90.0	483	2.30
2,000 or More	14.5	114.1	117.6	631	5.37	13.2	121.5	125.3	666	2.82
Year of Construction										
1949 or Before	21.7	89.9	92.6	514	5.55	18.1	102.5	105.7	573	2.80
1950 to 1974	26.8	79.4	81.9	439	5.37	24.4	84.8	87.4	467	2.60
1975 or After	8.9	69.1	71.3	367	5.14	7.5	77.9	80.3	411	5.12
Status of Unit										
Owned	35.3	92.9	95.8	516	5.38	32.0	99.0	102.0	544	2.27
Rented	22.0	63.9	65.9	361	5.48	18.0	74.5	76.8	413	2.82
1987 Family Income										
Less than \$10,000	11.2	75.3	77.7	416	5.35	9.8	83.2	85.8	455	3.39
\$10,000 to \$19,999	13.7	75.6	78.0	420	5.39	12.0	83.2	85.7	455	2.84
\$20,000 to \$34,999	15.2	78.4	80.9	436	5.39	13.0	87.1	89.8	476	2.58
\$35,000 or More	17.3	93.7	96.6	529	5.48	15.2	102.8	106.0	575	2.90
Below 100 Percent of Poverty Line	7.4	78.3	80.8	438	5.43	6.4	86.9	89.6	481	3.98
Below 125 Percent of Poverty Line	11.5	78.2	80.6	435	5.40	10.1	86.0	88.6	473	3.30
Assistance for Heating in Winter										
Yes	3.1	90.2	93.0	505	5.42	2.7	98.4	101.5	545	5.71
No	54.3	81.3	83.8	454	5.41	47.3	89.7	92.5	494	2.01

See footnotes at end of table.

Table 4. Natural Gas Consumption and Expenditures for U.S. Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.550	1.010	1.010	1.057	0.493	1.775	0.859	0.859	0.928	
Age of Householder										
Under 35 Years	18.1	74.5	76.8	413	5.38	15.6	82.6	85.1	453	2.98
35 to 59 Years	22.4	89.3	92.1	495	5.37	19.8	97.2	100.2	532	2.27
60 Years and Over	16.8	79.5	82.0	452	5.51	14.6	88.8	91.5	497	2.95
Household Size										
1 Person	14.3	67.1	69.1	368	5.32	12.0	77.2	79.6	419	3.63
2 to 4 Persons	36.9	84.5	87.1	471	5.41	32.6	92.1	94.9	507	1.93
5 or More Persons	6.1	100.0	103.1	572	5.55	5.3	107.6	111.0	608	3.73
Secondary Heating										
Yes	20.9	87.7	90.4	481	5.33	18.3	95.2	98.1	517	2.60
No	36.4	78.4	80.8	442	5.47	31.7	87.3	90.0	485	2.41
Hot Water Fuel										
Natural Gas	49.2	86.9	89.6	480	5.36	44.8	92.4	95.2	507	1.99
Electricity	5.6	65.8	67.9	381	5.62	4.9	71.5	73.7	408	4.18
Fuel Oil or Kerosene	2.2	10.2	10.5	123	11.71	Q	Q	Q	Q	19.42
Other .....	.3	55.1	56.8	332	5.84	.2	60.4	62.3	356	21.35
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	4.2	97.1	100.1	503	5.02	3.9	101.2	104.3	522	4.16
5,500 to 7,000 HDD	19.1	106.2	109.5	555	5.07	17.7	111.6	115.1	578	2.67
4,000 to 5,499 HDD	13.1	80.6	83.1	505	6.07	10.2	98.4	101.4	598	5.60
Under 4,000 HDD	12.2	57.9	59.7	336	5.63	10.6	62.8	64.7	364	3.93
2,000 CDD or More and --										
Under 4,000 HDD	8.8	56.4	58.1	315	5.42	7.6	61.5	63.4	342	6.91

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.
 Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors.
 • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.
 Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, F of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 5. Electricity Consumption and Expenditures for U.S. Households, 1987

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE: Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
	1.026	0.733	0.733	0.673	0.380	3.225	1.328	1.328	1.249	
United States	90.5	8.93	30.5	680	22.34	17.9	14.69	50.1	1,010	2.03
Metropolitan Status										
Metropolitan	70.2	8.62	29.4	678	23.03	14.5	14.00	47.8	993	2.37
Central City	29.6	7.29	24.9	578	23.25	5.6	12.39	42.3	844	3.11
Outside Central City	40.6	9.59	32.7	750	22.91	8.9	15.01	51.2	1,086	2.97
Nonmetropolitan	20.3	9.98	34.0	690	20.27	3.4	17.62	60.1	1,082	4.30
Electricity Paid by Household										
Yes	83.2	9.22	31.5	703	22.34	16.1	15.28	52.1	1,047	2.13
No	7.3	5.55	18.9	423	22.34	1.8	9.32	31.8	667	7.42
Housing Structure										
Mobile Home	5.1	8.98	30.6	641	20.93	1.0	14.87	50.8	983	6.72
Single Family	60.4	10.32	35.2	777	22.06	9.9	18.46	63.0	1,256	2.34
Building of 2 or More Units	25.0	5.55	18.9	455	24.04	7.0	9.35	31.9	667	4.10
Number of Rooms										
1 to 3	12.9	5.00	17.1	395	23.16	4.2	8.21	28.0	603	5.11
4 to 5	38.6	7.86	26.8	592	22.07	7.4	13.85	47.3	930	2.42
6 or More	39.0	11.28	38.5	862	22.41	6.3	20.03	68.3	1,378	2.40
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	32.3	6.22	21.2	486	22.91	7.2	10.22	34.9	714	3.02
1,000 to 1,999	36.8	9.76	33.3	728	21.88	8.0	16.22	55.3	1,104	2.60
2,000 or More	21.4	11.59	39.5	892	22.54	2.7	22.03	75.2	1,517	3.34
Year of Construction										
1949 or Before	29.7	6.88	23.5	558	23.77	1.8	13.37	45.6	933	3.98
1950 to 1974	39.1	8.91	30.4	678	22.32	6.0	14.47	49.4	966	3.03
1975 or After	21.7	11.75	40.1	851	21.21	10.1	15.04	51.3	1,049	3.45
Status of Unit										
Owned	58.8	10.31	35.2	780	22.17	10.1	17.96	61.3	1,232	2.44
Rented	31.7	6.36	21.7	496	22.83	7.8	10.43	35.6	721	3.40
1987 Family Income										
Less than \$10,000	17.7	6.40	21.8	486	22.26	3.0	11.23	38.3	747	4.48
\$10,000 to \$19,999	21.6	7.42	25.3	565	22.31	3.8	11.84	40.4	805	3.35
\$20,000 to \$34,999	24.9	9.30	31.7	699	22.02	5.3	14.94	51.0	1,016	2.89
\$35,000 or More	26.3	11.51	39.3	888	22.63	5.9	18.05	61.6	1,269	3.02
Below 100 Percent of Poverty Line	11.8	6.91	23.6	527	22.34	2.0	11.82	40.3	791	5.19
Below 125 Percent of Poverty Line	18.2	7.02	24.0	535	22.34	3.0	11.94	40.7	787	4.28
Assistance for Heating in Winter										
Yes	4.8	6.45	22.0	503	22.88	.5	12.58	42.9	807	8.69
No	85.7	9.06	30.9	690	22.32	17.4	14.75	50.3	1,016	2.15

See footnotes at end of table.

Table 5. Electricity Consumption and Expenditures for U.S. Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	1.026	0.733	0.733	0.673	0.380	3.225	1.328	1.328	1.249	
Age of Householder										
Under 35 Years	28.0	8.22	28.0	627	22.37	6.7	12.79	43.6	893	2.93
35 to 59 Years	36.9	10.46	35.7	792	22.19	7.5	16.97	57.9	1,168	2.41
60 Years and Over	25.7	7.49	25.6	578	22.61	3.7	13.53	46.2	903	3.81
Household Size										
1 Person	21.6	5.66	19.3	435	22.53	4.9	10.01	34.2	680	3.62
2 to 4 Persons	59.7	9.72	33.2	736	22.19	11.9	15.90	54.2	1,099	2.34
5 or More Persons	9.3	11.42	39.0	894	22.95	1.1	22.36	76.3	1,511	3.74
Secondary Heating										
Yes	37.4	10.85	37.0	795	21.48	7.4	17.34	59.2	1,169	2.78
No	53.2	7.58	25.9	600	23.21	10.5	12.82	43.7	898	2.28
Hot Water Fuel										
Natural Gas	49.2	6.75	23.0	556	24.15	2.2	7.18	24.5	549	4.27
Electricity	32.0	13.09	44.7	904	20.24	15.4	15.77	53.8	1,073	2.72
Fuel Oil or Kerosene	5.3	5.08	17.3	538	31.04	NC	NC	NC	NC	8.07
Other	4.0	7.51	25.6	607	23.70	.3	14.22	48.5	1,137	7.19
All-Electric Home										
Yes	15.0	15.82	54.0	1,075	19.92	15.0	15.82	54.0	1,075	3.28
No	75.5	7.56	25.8	602	23.34	2.9	8.89	30.3	675	2.98
Air Conditioning										
Yes	57.6	10.24	34.9	779	22.30	14.4	15.40	52.5	1,077	2.27
Central Unit	30.7	12.50	42.7	924	21.67	10.7	16.44	56.1	1,155	2.81
Electric	30.1	12.59	43.0	931	21.66	10.7	16.44	56.1	1,155	2.81
Individual Room Units ¹	26.9	7.67	26.2	614	23.47	3.8	12.42	42.4	855	3.72
One Unit	18.4	7.12	24.3	555	22.86	2.8	11.48	39.2	777	4.55
Two or More Units	8.6	8.85	30.2	741	24.53	.9	15.33	52.3	1,095	4.57
No	32.9	6.62	22.6	507	22.44	3.5	11.78	40.2	735	3.79
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	8.5	7.98	27.2	564	20.70	.6	15.43	52.6	1,032	6.84
5,500 to 7,000 HDD	25.9	7.75	26.5	629	23.76	2.6	17.24	58.8	1,099	5.98
4,000 to 5,499 HDD	21.9	8.96	30.6	678	22.20	4.2	15.68	53.5	996	4.51
Under 4,000 HDD	17.8	8.63	29.4	642	21.82	4.0	12.87	43.9	887	4.61
2,000 CDD or More and --										
Under 4,000 HDD	16.3	11.56	39.5	868	21.99	6.4	14.05	47.9	1,057	4.82

NC No cases in sample.

¹ Homes having both a central air conditioner and one or more window or wall units are not included here. They are included under "Central Unit".

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, E of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 6. Fuel Oil or Kerosene Consumption and Expenditures for U.S. Households, 1987

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.743	1.056	1.059	1.082	0.291	1.949	0.911	0.915	1.003	
United States	17.4	508	70.3	414	5.89	12.2	671	92.9	542	2.84
Metropolitan Status										
Metropolitan	12.6	548	75.9	444	5.85	9.4	700	96.9	563	3.22
Central City	5.0	483	66.9	372	5.57	3.7	615	85.2	469	6.52
Outside Central City	7.6	591	81.8	491	6.00	5.7	754	104.4	623	4.40
Nonmetropolitan	4.8	402	55.4	334	6.04	2.8	576	79.4	474	7.55
Fuel Oil or Kerosene Paid by Household										
Yes	14.0	494	68.2	416	6.09	9.2	693	95.9	578	3.31
No	3.4	567	78.6	406	5.17	3.0	603	83.7	432	5.44
Housing Structure										
Mobile Home	1.3	291	39.7	257	6.48	8	408	55.6	354	8.73
Single Family	12.0	523	72.3	439	6.07	7.8	730	101.1	608	3.34
Building of 2 or More Units	4.1	531	73.6	388	5.27	3.5	602	83.5	441	5.38
Number of Rooms										
1 to 3	2.2	444	61.6	309	5.02	1.8	529	73.3	367	6.38
4 to 5	7.1	419	57.9	343	5.93	4.9	553	76.4	449	3.52
6 or More	8.1	603	83.5	504	6.04	5.5	822	113.8	681	3.99
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	5.7	408	56.3	312	5.55	4.3	516	71.3	392	5.03
1,000 to 1,999	6.6	455	63.0	382	6.06	4.3	637	88.2	529	a
2,000 or More	5.0	692	95.8	572	5.97	3.6	892	123.6	734	4.22
Year of Construction										
1949 or Before	8.1	570	79.0	463	5.87	6.1	712	98.6	575	4.33
1950 to 1974	6.8	501	69.2	405	5.85	4.9	641	88.6	515	4.20
1975 or After	2.5	326	45.0	277	6.16	1.2	587	81.1	489	8.31
Status of Unit										
Owned	12.2	526	72.7	441	6.06	8.2	724	100.1	602	3.32
Rented	5.2	466	64.5	351	5.44	4.0	562	77.8	419	4.40
1987 Family Income										
Less than \$10,000	3.2	482	66.6	383	5.76	2.4	585	80.8	460	5.88
\$10,000 to \$19,999	4.3	456	63.0	373	5.93	3.0	624	86.3	508	5.44
\$20,000 to \$34,999	5.3	453	62.7	369	5.88	3.6	601	83.2	483	4.92
\$35,000 or More	4.6	637	88.3	524	5.93	3.2	858	118.9	702	5.53
Below 100 Percent of Poverty Line	2.0	400	55.1	317	5.75	1.3	515	71.0	395	7.34
Below 125 Percent of Poverty Line	3.2	432	59.7	345	5.78	2.3	552	76.2	432	5.32
Assistance for Heating in Winter										
Yes .....	.9	419	57.8	344	5.95	.7	533	73.6	430	7.03
No	16.5	513	71.0	418	5.89	11.5	679	94.0	549	2.90
Age of Householder										
Under 35 Years	4.5	437	60.4	352	5.82	3.0	585	80.9	465	4.35
35 to 59 Years	7.8	495	68.4	410	5.99	4.8	712	98.6	583	3.98
60 Years and Over	5.3	588	81.3	473	5.81	4.4	686	94.9	551	5.05

See footnotes at end of table.

Table 6. Fuel Oil or Kerosene Consumption and Expenditures for U.S. Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.743	1.056	1.059	1.082	0.291	1.949	0.911	0.915	1.003	
Household Size										
1 Person	3.9	461	63.7	365	5.73	2.9	582	80.5	458	6.21
2 to 4 Persons	11.8	517	71.6	423	5.92	8.1	690	95.5	560	3.40
5 or More Persons	1.8	548	75.9	456	6.00	1.2	757	104.9	623	7.91
Secondary Heating										
Yes	10.0	393	54.2	326	6.02	5.0	674	93.3	554	4.39
No	7.4	665	92.0	532	5.78	7.2	669	92.6	534	3.87
Hot Water Fuel										
Natural Gas	3.2	354	49.0	301	6.14	1.5	647	89.7	550	7.26
Electricity	8.2	388	53.6	324	6.05	5.1	539	74.3	443	4.27
Fuel Oil or Kerosene	5.3	826	114.5	651	5.68	5.2	835	115.8	658	3.93
Other .....	.8	249	34.1	219	6.42	.4	356	49.0	305	15.84
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	2.8	539	74.5	433	5.81	2.0	648	89.7	518	7.48
5,500 to 7,000 HDD	5.0	638	88.2	529	6.00	3.7	801	110.8	663	6.05
4,000 to 5,499 HDD	7.1	523	72.5	415	5.73	5.3	663	91.9	521	5.32
Under 4,000 HDD	1.8	215	29.4	192	6.52	.8	402	55.1	353	10.04
2,000 CDD or More and --										
Under 4,000 HDD .....	.7	93	12.6	99	7.90	.3	Q	Q	Q	29.85

^a No applicable RSE row factor.

^Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 7. Liquefied Petroleum Gas Consumption and Expenditures for U.S. Households, 1987

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.532	1.011	1.011	0.820	0.560	1.914	0.941	0.941	0.821	
United States	7.7	450	41.1	366	8.91	4.1	669	61.1	500	5.90
Metropolitan Status										
Metropolitan	3.5	405	37.0	360	9.72	1.8	585	53.4	476	8.76
Central City	6	325	29.7	343	11.57	.3	400	36.6	401	19.33
Outside Central City	2.9	420	38.4	363	9.45	1.5	625	57.1	492	10.33
Nonmetropolitan	4.2	487	44.5	371	8.34	2.3	736	67.2	519	8.08
LPG Paid by Household										
Yes	7.3	458	41.8	371	8.89	4.0	676	61.8	504	5.83
No .....	.4	301	27.5	261	9.48	Q	Q	Q	398	29.27
Housing Structure										
Mobile Home	1.9	359	32.8	323	9.86	1.2	473	43.2	392	10.28
Single Family	5.7	484	44.2	383	8.66	2.9	751	68.6	545	6.98
Building of 2 or More Units	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Number of Rooms										
1 to 3 .....	.9	318	29.1	283	9.74	.4	541	49.4	433	15.33
4 to 5	4.2	430	39.3	358	9.12	2.5	601	54.9	459	7.78
6 or More	2.6	526	48.0	406	8.45	1.2	849	77.5	604	7.76
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	3.3	341	31.1	307	9.85	1.8	491	44.8	393	6.96
1,000 to 1,999	3.1	508	46.4	394	8.49	1.8	722	65.9	527	8.13
2,000 or More	1.3	589	53.8	451	8.38	.6	1,036	94.6	731	10.88
Year of Construction										
1949 or Before	2.5	428	39.1	343	8.77	1.2	684	62.5	472	9.36
1950 to 1974	3.0	474	43.3	400	9.25	1.7	671	61.3	530	7.83
1975 or After	2.2	441	40.3	345	8.56	1.2	651	59.4	483	9.98
Status of Unit										
Owned	6.2	469	42.8	381	8.88	3.4	689	63.0	517	6.12
Rented	1.5	367	33.5	303	9.05	.7	575	52.6	419	11.34
1987 Family Income										
Less than \$10,000	2.3	364	33.2	311	9.37	1.2	565	51.6	456	9.74
\$10,000 to \$19,999	2.1	506	46.2	404	8.74	1.4	653	59.7	475	11.18
\$20,000 to \$34,999	2.1	444	40.6	360	8.87	1.0	728	66.5	532	8.60
\$35,000 or More	1.2	529	48.3	417	8.62	.6	821	75.0	595	10.18
Below 100 Percent of Poverty Line	1.6	435	39.8	339	8.51	1.0	599	54.7	439	11.90
Below 125 Percent of Poverty Line	2.5	418	38.2	341	8.93	1.3	645	58.9	487	10.35
Assistance for Heating in Winter										
Yes .....	.8	540	49.4	380	7.70	.4	795	72.6	528	16.06
No	6.9	439	40.1	364	9.08	3.7	655	59.8	497	6.18
Age of Householder										
Under 35 Years	2.0	399	36.5	333	9.13	.9	636	58.1	469	9.51
35 to 59 Years	3.3	443	40.5	354	8.75	1.6	684	62.4	495	7.90
60 Years and Over	2.4	500	45.7	408	8.95	1.6	674	61.6	524	10.15

See footnotes at end of table.

Table 7. Liquefied Petroleum Gas Consumption and Expenditures for U.S. Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.532	1.011	1.011	0.820	0.560	1.914	0.941	0.941	0.821	
Household Size										
1 Person	1.5	460	42.1	376	8.93	1.0	630	57.5	492	12.26
2 to 4 Persons	5.3	438	40.0	358	8.94	2.7	673	61.5	501	5.81
5 or More Persons .....	.9	498	45.5	395	8.68	.5	728	66.4	511	10.88
Secondary Heating										
Yes	4.2	477	43.5	391	8.99	2.3	665	60.7	515	7.37
No	3.5	417	38.1	336	8.80	1.9	675	61.6	481	7.36
Hot Water Fuel										
Natural Gas	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Electricity	4.2	348	31.8	316	9.93	2.2	542	49.5	448	6.84
Fuel Oil or Kerosene .....	.3	63	5.7	101	17.59	NC	NC	NC	NC	10.59
Other	3.2	617	56.4	455	8.08	1.9	815	74.4	559	7.87
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	1.7	531	48.5	389	8.03	.8	920	84.0	617	13.13
5,500 to 7,000 HDD	1.4	432	39.4	354	8.99	.5	887	81.0	643	9.75
4,000 to 5,499 HDD	1.4	502	45.8	371	8.09	.8	759	69.3	537	9.27
Under 4,000 HDD	1.6	503	46.0	439	9.55	1.0	635	58.0	512	12.62
2,000 CDD or More and --										
Under 4,000 HDD	1.6	282	25.7	274	10.66	1.1	346	31.6	308	15.80

^a No applicable RSE row factor.

^{nc} No cases in sample.

^Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 8. Wood Consumption for U.S. Households for Year Ending November 1987

Household Characteristics	Households Burning Wood		Cords Burned		Cords Burned per Household	RSE Row Factors
	(million)	(percent)	(million)	(percent)		
	RSE Column Factors:					
	0.763	0.670	1.526	1.122	1.143	
United States	22.5	100.0	42.6	100.0	1.9	7.04
Metropolitan Status						
Metropolitan	15.9	71.0	21.6	50.6	1.4	7.06
Central City	4.2	18.5	3.7	8.6	.9	12.06
Outside Central City	11.8	52.4	17.9	42.1	1.5	9.23
Nonmetropolitan	5.5	29.0	21.0	49.4	3.2	11.58
Measured Heated Area of Residence (square feet)						
Fewer than 1,000	3.2	14.4	8.6	20.3	2.7	12.46
1,000 to 1,999	9.9	44.1	19.6	46.1	2.0	8.14
2,000 or More	9.3	41.5	14.4	33.7	1.5	7.29
1987 Family Income						
Less than \$10,000	2.1	9.4	6.9	16.1	3.3	12.53
\$10,000 to \$19,999	3.6	16.2	9.9	23.3	2.7	11.81
\$20,000 to \$34,999	6.0	26.8	13.4	31.4	2.2	8.32
\$35,000 or More	10.7	47.6	12.4	29.1	1.2	7.37
Assistance for Heating in Winter						
Yes .....	.7	3.0	3.1	7.2	4.5	18.53
No	21.8	97.0	39.6	92.8	1.8	4.47
Amount of Wood Burned						
Less than 2 Cords	14.9	66.4	7.0	16.4	.5	5.37
2 to 4 Cords	4.5	20.0	12.2	28.5	2.7	6.66
More than 4 Cords	3.0	13.6	23.5	55.1	7.7	13.26
Wood Is Main Heating Fuel						
Yes	5.0	22.4	23.5	55.1	4.7	10.97
No	17.4	77.6	19.2	44.9	1.1	5.77
Year of Construction						
1949 or Before	5.9	26.2	16.4	38.5	2.8	9.27
1950 to 1974	8.9	39.8	12.4	29.0	1.4	7.34
1975 or After	7.6	34.0	13.8	32.5	1.8	8.87
Climate Zone						
Under 2,000 CDD and--						
Over 7,000 HDD	2.9	13.0	12.8	30.0	4.4	26.80
5,500 to 7,000 HDD	6.6	29.3	10.2	24.0	1.6	11.26
4,000 to 5,499 HDD	5.0	22.4	8.8	20.7	1.8	14.81
Under 4,000 HDD	4.8	21.5	7.7	18.0	1.6	15.65
2,000 CDD or More and --						
Under 4,000 HDD	3.1	13.9	3.1	7.3	1.0	15.88

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Percentages are calculated on unrounded numbers. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 9. Energy Consumption and Expenditures for Northeast Region Households, 1987

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors	0.577	0.624	0.598	1.354	1.257	0.668	0.663	1.043	1.020	2.435	2.346	
Northeast Region	19.0	2.37	24.3	1.03	6.7	0.44	12.3	0.87	5.1	0.02	0.2	5.83
Metropolitan Status												
Metropolitan	16.8	2.11	21.8	.95	6.2	.38	11.0	.77	4.5	.01	.1	6.35
Central City	6.7	.80	7.9	.43	3.1	.10	3.4	.26	1.4	Q	Q	8.61
Outside Central City	10.2	1.31	13.9	.52	3.2	.28	7.6	.51	3.0	.01	.1	6.89
Nonmetropolitan	2.2	.26	2.5	Q	Q	.06	1.3	.10	.6	.01	.1	10.97
Payment Method for Utilities												
All Paid by Household	13.4	1.82	19.1	.81	5.1	.37	10.0	.62	3.8	.02	.2	7.48
Some or None Paid by Household, Other Method	5.7	.55	5.3	.22	1.6	.07	2.3	.25	1.3	Q	Q	11.70
Housing Structure												
Mobile Home .....	.7	.06	.6	Q	Q	.01	.3	.02	.1	*	.1	35.84
Single Family	11.1	1.61	16.8	.70	4.4	.33	8.8	.57	3.4	.01	.2	8.19
Building of 2 or More Units	7.2	.70	6.9	.31	2.1	.10	3.2	.29	1.5	Q	Q	9.64
Number of Rooms												
1 to 3	3.4	.25	2.5	.08	.5	.04	1.3	.12	.6	Q	Q	22.96
4 to 5	6.5	.71	7.2	.32	2.1	.12	3.4	.27	1.5	.01	.1	10.31
6 or More	9.1	1.41	14.7	.64	4.0	.28	7.6	.49	3.0	.01	.1	8.90
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	6.6	.59	5.8	.24	1.6	.09	2.8	.25	1.3	.01	.1	11.44
1,000 to 1,999	6.7	.84	8.8	.40	2.6	.16	4.5	.27	1.6	*	.1	9.45
2,000 or More	5.8	.94	9.8	.39	2.5	.19	5.1	.36	2.1	*	.1	11.61
Year of Construction												
1949 or Before	9.2	1.21	11.6	.56	3.7	.17	5.1	.47	2.7	.01	.1	8.56
1950 to 1974	7.2	.91	9.2	.42	2.6	.16	4.7	.32	1.9	.01	.1	10.18
1975 or After	2.7	.25	3.5	.06	.4	.11	2.5	.08	.5	*	*	14.75
Status of Unit												
Owned	12.0	1.68	17.6	.71	4.5	.34	9.2	.62	3.7	.02	.2	7.65
Rented	7.0	.69	6.7	.32	2.2	.10	3.1	.26	1.3	Q	Q	9.67
1987 Family Income												
Less than \$10,000	3.3	.35	3.1	.16	1.0	.05	1.3	.14	.8	Q	*	13.60
\$10,000 to \$19,999	4.1	.47	4.6	.21	1.3	.08	2.2	.17	1.0	.01	.1	9.28
\$20,000 to \$34,999	5.3	.62	6.4	.26	1.7	.12	3.3	.23	1.3	.01	.1	9.60
\$35,000 or More	6.3	.94	10.2	.40	2.6	.20	5.5	.34	2.0	*	*	10.30
Below 100 Percent of Poverty Line	1.9	.21	1.9	.11	.7	.03	.8	.07	.4	Q	Q	19.98
Below 125 Percent of Poverty Line	3.2	.36	3.3	.18	1.1	.05	1.5	.12	.7	Q	*	14.69
Assistance for Heating in Winter												
Yes	1.0	.12	1.1	.07	.4	.02	.4	.04	.2	Q	Q	19.56
No	18.1	2.25	23.2	.96	6.2	.43	11.9	.84	4.9	.02	.2	5.87
Age of Householder												
Under 35 Years	5.4	.58	6.1	.27	1.7	.12	3.2	.19	1.1	*	.1	9.94
35 to 59 Years	7.6	1.05	11.1	.45	2.9	.21	5.9	.38	2.2	.01	.1	8.76
60 Years and Over	6.0	.74	7.1	.32	2.0	.11	3.2	.31	1.8	.01	.1	8.61

See footnotes at end of table.

Table 9. Energy Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Flow Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.577	0.624	0.598	1.334	1.257	0.688	0.663	1.043	1.020	2.435	2.346	
Household Size												
1 Person	5.0	0.47	4.4	0.20	1.3	0.07	2.0	0.19	1.1	*	0.1	13.24
2 to 4 Persons	12.0	1.57	16.4	.67	4.4	.31	8.5	.57	3.4	0.01	.2	6.72
5 or More Persons	2.0	.33	3.6	.16	1.0	.07	1.9	.11	.6	Q	Q	17.24
Secondary Heating												
Yes	6.1	.87	9.3	.35	2.1	.20	5.1	.32	1.9	.01	.1	9.67
No	12.9	1.50	15.0	.69	4.5	.25	7.2	.56	3.2	.01	.1	6.63
Hot Water Fuel												
Natural Gas	9.0	1.26	11.9	.97	6.2	.17	5.1	.12	.7	NC	NC	14.28
Electricity	4.5	.38	5.6	.03	.2	.18	4.3	.16	.9	.01	.1	16.48
Fuel Oil or Kerosene	5.1	.70	6.3	.02	.3	.09	2.7	.59	3.3	*	*	11.20
Other .....	.4	.03	.4	Q	Q	.01	.2	.01	.1	.01	.1	28.67
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	2.0	.21	2.2	Q	Q	.05	1.3	.13	.7	.01	.1	45.16
5,500 to 7,000 HDD	8.6	1.17	11.4	.59	3.4	.21	5.7	.36	2.1	.01	.1	14.54
4,000 to 5,499 HDD	8.4	.99	10.7	.42	3.1	.18	5.4	.39	2.2	Q	Q	8.01
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --												
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 9. Energy Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors	0.577	0.624	0.598	1.334	1.257	0.688	0.663	1.043	1.020	2.435	2.346	
New England Division	4.3	0.52	5.2	0.15	1.0	0.10	2.6	0.26	1.6	0.01	0.1	8.06
Metropolitan Status												
Metropolitan	3.5	.43	4.3	.15	1.0	.08	2.1	.20	1.2	*	.1	8.81
Central City	1.3	.15	1.5	.08	.5	.02	.6	.05	.3	Q	Q	13.52
Outside Central City	2.1	.28	2.9	.07	.5	.06	1.5	.15	.9	*	*	11.72
Nonmetropolitan .....	.8	.08	.9	NC	NC	.02	.5	.06	.3	*	.1	24.18
Payment Method for Utilities												
All Paid by Household	3.4	.43	4.4	.11	.8	.09	2.2	.22	1.3	.01	.1	8.37
Some or None Paid by Household, Other Method .....	.9	.09	.8	.03	.2	.01	.3	.04	.2	Q	Q	18.37
Housing Structure												
Mobile Home .....	.2	.01	.2	NC	NC	*	.1	.01	*	*	*	22.46
Single Family	2.3	.33	3.3	.07	.5	.07	1.7	.19	1.1	*	.1	10.61
Building of 2 or More Units	1.7	.17	1.7	.08	.5	.03	.8	.07	.4	Q	Q	15.47
Number of Rooms												
1 to 3 .....	.7	.04	.5	.01	.1	.01	.3	.02	.1	Q	Q	29.04
4 to 5	1.6	.18	1.8	.06	.4	.03	.8	.09	.6	*	*	10.54
6 or More	1.9	.29	2.9	.08	.5	.06	1.5	.15	.9	*	*	10.67
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	1.5	.12	1.3	.04	.3	.02	.7	.05	.3	.01	.1	12.65
1,000 to 1,999	1.5	.19	1.9	.07	.4	.03	.9	.09	.5	*	*	11.94
2,000 or More	1.3	.20	2.0	.04	.2	.04	1.0	.12	.7	*	*	12.57
Year of Construction												
1949 or Before	2.0	.27	2.5	.09	.6	.04	1.0	.13	.8	Q	*	12.44
1950 to 1974	1.6	.19	1.9	.05	.3	.04	1.0	.10	.6	*	*	17.46
1975 or After .....	.7	.07	.8	Q	Q	.02	.6	.03	.2	Q	Q	27.48
Status of Unit												
Owned	2.6	.36	3.6	.07	.5	.07	1.8	.21	1.2	.01	.1	11.01
Rented	1.7	.16	1.6	.08	.5	.03	.7	.05	.3	Q	Q	11.86
1987 Family Income												
Less than \$10,000 .....	.7	.07	.6	.02	.1	.01	.3	.04	.2	Q	*	21.66
\$10,000 to \$19,999 .....	.9	.10	1.0	.04	.2	.02	.5	.04	.3	*	*	13.21
\$20,000 to \$34,999	1.2	.14	1.5	.04	.3	.03	.7	.07	.4	*	.1	14.20
\$35,000 or More	1.4	.21	2.1	.05	.4	.04	1.1	.11	.7	*	*	17.55
Below 100 Percent of Poverty Line .....	.3	.04	.3	.01	.1	.01	.2	.02	.1	Q	Q	24.63
Below 125 Percent of Poverty Line .....	.7	.07	.7	.02	.2	.01	.3	.04	.2	*	*	19.62
Assistance for Heating in Winter												
Yes .....	.3	.03	.3	.01	.1	.01	.1	.01	.1	Q	Q	29.05
No	4.0	.48	4.9	.13	.9	.09	2.4	.25	1.5	.01	.1	8.42
Age of Householder												
Under 35 Years	1.3	.14	1.4	.05	.3	.03	.7	.06	.3	*	*	13.67
35 to 59 Years	1.6	.21	2.2	.06	.4	.05	1.2	.11	.6	*	.1	11.06
60 Years and Over	1.4	.17	1.6	.04	.3	.03	.7	.10	.6	*	*	14.50

See footnotes at end of table.

Table 9. Energy Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.577	0.624	0.598	1.334	1.257	0.688	0.663	1.043	1.020	2.435	2.346	
Household Size												
1 Person	1.1	0.10	1.0	0.03	0.2	0.02	0.4	0.05	0.3	Q	Q	21.59
2 to 4 Persons	2.8	.36	3.7	.10	.7	.07	1.8	.19	1.1	0.01	0.1	11.55
5 or More Persons .....	.4	.06	.6	.02	.1	.01	.3	.02	.1	Q	Q	22.80
Secondary Heating												
Yes	1.6	.22	2.3	.05	.3	.05	1.2	.12	.7	.01	.1	10.88
No	2.7	.30	2.9	.10	.6	.05	1.4	.14	.9	*	*	9.24
Hot Water Fuel												
Natural Gas	1.4	.19	1.8	.14	.9	.02	.7	.03	.2	NC	NC	21.05
Electricity	1.2	.10	1.4	.01	.1	.04	1.0	.05	.3	Q	*	18.49
Fuel Oil or Kerosene	1.4	.21	1.8	*	*	.03	.8	.18	1.0	*	*	17.17
Other	2	.02	.2	NC	NC	*	.1	.01	*	.01	.1	35.67
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	1.2	.13	1.3	Q	Q	.03	.7	.08	.5	.01	.1	22.55
5,500 to 7,000 HDD	2.9	.37	3.7	.13	.9	.07	1.8	.17	1.0	*	*	12.06
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	NC	NC	a
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --												
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 9. Energy Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.577	0.624	0.598	1.334	1.257	0.688	0.663	1.043	1.020	2.435	2.346	
Middle Atlantic Division	14.8	1.85	19.1	0.89	5.7	0.35	9.8	0.61	3.5	0.01	0.1	6.76
Metropolitan Status												
Metropolitan	13.4	1.68	17.5	.80	5.3	.31	8.9	.57	3.2	.01	.1	6.92
Central City	5.3	.65	6.4	.35	2.5	.08	2.8	.21	1.1	NC	NC	9.48
Outside Central City	8.0	1.03	11.1	.45	2.7	.22	6.1	.36	2.1	.01	.1	8.40
Nonmetropolitan	1.4	.17	1.6	Q	Q	.04	.9	Q	Q	*	.1	13.30
Payment Method for Utilities												
All Paid by Household	10.0	1.39	14.7	.69	4.3	.29	7.8	.40	2.4	.01	.1	9.87
Some or None Paid by Household, Other Method	4.7	.46	4.4	.19	1.4	.06	2.0	.21	1.1	Q	Q	13.88
Housing Structure												
Mobile Home .....	.5	.05	.5	Q	Q	.01	.2	Q	Q	Q	Q	65.92
Single Family	8.8	1.28	13.4	.64	4.0	.26	7.1	.38	2.3	.01	.1	9.95
Building of 2 or More Units	5.5	.53	5.2	.23	1.6	.08	2.5	.22	1.1	NC	NC	12.42
Number of Rooms												
1 to 3	2.7	.20	2.0	.07	.4	.03	1.0	.10	.5	Q	Q	27.90
4 to 5	4.9	.53	5.4	.26	1.7	.09	2.6	.17	1.0	*	*	13.68
6 or More	7.2	1.13	11.8	.56	3.5	.22	6.1	.34	2.0	.01	.1	11.03
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	5.1	.47	4.5	.20	1.3	.07	2.1	.20	1.0	Q	Q	13.98
1,000 to 1,999	5.2	.65	6.9	.34	2.1	.13	3.6	.18	1.1	*	.1	11.71
2,000 or More	4.5	.74	7.7	.35	2.2	.15	4.1	.23	1.4	Q	Q	14.01
Year of Construction												
1949 or Before	7.2	.94	9.2	.46	3.1	.14	4.0	.34	1.9	.01	.1	9.96
1950 to 1974	5.6	.73	7.3	.37	2.3	.13	3.7	.23	1.3	Q	Q	12.07
1975 or After	2.0	.18	2.6	.05	.3	.08	2.0	.05	.3	Q	Q	16.48
Status of Unit												
Owned	9.4	1.33	14.0	.64	4.0	.27	7.4	.41	2.5	.01	.1	10.07
Rented	5.4	.53	5.1	.24	1.6	.08	2.4	.20	1.0	Q	Q	12.40
1987 Family Income												
Less than \$10,000	2.6	.28	2.5	.15	.9	.04	1.0	.10	.5	Q	Q	16.07
\$10,000 to \$19,999	3.2	.37	3.6	.17	1.1	.06	1.7	.13	.7	*	*	11.77
\$20,000 to \$34,999	4.1	.47	4.9	.22	1.4	.09	2.6	.16	.9	*	*	12.38
\$35,000 or More	4.8	.73	8.0	.35	2.2	.16	4.4	.23	1.3	Q	Q	11.08
Below 100 Percent of Poverty Line	1.5	.17	1.6	.10	.6	.02	.7	.05	.3	Q	Q	23.45
Below 125 Percent of Poverty Line	2.5	.28	2.6	.15	1.0	.04	1.2	.09	.5	Q	Q	16.69
Assistance for Heating in Winter												
Yes .....	.7	.09	.8	.06	.3	.01	.3	.02	.1	NC	NC	23.83
No	14.1	1.76	18.3	.83	5.3	.34	9.5	.59	3.4	.01	.1	6.85
Age of Householder												
Under 35 Years	4.1	.44	4.7	.22	1.4	.09	2.5	.13	.7	Q	Q	11.37
35 to 59 Years	6.0	.83	8.9	.39	2.5	.17	4.7	.27	1.6	Q	.1	10.81
60 Years and Over	4.7	.58	5.5	.28	1.8	.09	2.5	.21	1.2	*	.1	10.16

See footnotes at end of table.

Table 9. Energy Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.577	0.624	0.598	1.334	1.257	0.688	0.663	1.043	1.020	2.435	2.346	
Household Size												
1 Person	3.9	0.37	3.4	0.17	1.1	0.05	1.5	0.14	0.8	Q	Q	15.33
2 to 4 Persons	9.2	1.21	12.7	.57	3.7	.24	6.7	.39	2.3	0.01	0.1	8.23
5 or More Persons	1.6	.27	2.9	.14	.9	.05	1.5	.08	.5	Q	Q	20.06
Secondary Heating												
Yes	4.5	.65	7.0	.30	1.8	.15	3.9	.20	1.2	.01	.1	12.68
No	10.3	1.20	12.1	.59	3.9	.20	5.9	.41	2.3	*	*	8.66
Hot Water Fuel												
Natural Gas	7.6	1.07	10.2	.84	5.2	.14	4.4	.09	.5	NC	NC	16.41
Electricity	3.3	.28	4.2	.02	.2	.14	3.3	.11	.6	.01	.1	19.73
Fuel Oil or Kerosene	3.7	.49	4.5	.02	.2	.06	2.0	.41	2.3	*	*	14.70
Other .....	.2	.02	.2	Q	Q	*	.1	.01	*	Q	Q	53.95
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
5,500 to 7,000 HDD	5.7	.80	7.6	.46	2.6	.15	3.9	.19	1.1	Q	.1	20.94
4,000 to 5,499 HDD	8.3	.97	10.5	.41	3.1	.17	5.3	.38	2.1	Q	Q	7.71
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --												
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

a No applicable RSE row factor.

nc No cases in sample.

* Data cannot be displayed due to rounding.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles".)

Table 10. Total Consumption per Northeast Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987

Household Characteristics	Total Consumption In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.748	0.423	1.711	0.572	2.902	1.565	1.333	0.533	
Northeast Region	19.0	124.4	8.1	138.8	2.1	53.4	8.0	134.9	5.56
Metropolitan Status									
Metropolitan	16.8	125.7	7.4	138.2	2.0	53.4	7.0	136.7	5.58
Central City	6.7	120.3	3.4	131.4	Q	42.5	2.8	119.5	10.47
Outside Central City	10.2	129.1	4.0	144.0	1.6	56.4	4.3	147.8	5.82
Nonmetropolitan	2.2	115.1	Q	Q	Q	52.8	1.0	122.3	19.48
Payment Method for Utilities									
All Paid by Household	13.4	135.9	6.0	151.5	1.6	58.8	5.0	153.9	5.12
Some or None Paid by Household, Other Method	5.7	97.2	2.1	103.6	Q	34.3	3.0	103.1	10.64
Housing Structure									
Mobile Home .....	.7	93.3	Q	Q	NC	NC	Q	81.4	24.75
Single Family	11.1	144.4	5.0	157.8	1.1	71.5	4.3	161.1	5.34
Building of 2 or More Units	7.2	96.6	2.9	106.7	1.0	31.6	3.3	107.6	9.38
Number of Rooms									
1 to 3	3.4	71.7	1.0	82.5	.8	28.5	1.6	88.0	14.10
4 to 5	6.5	109.4	2.9	116.3	.4	49.7	2.9	116.7	7.72
6 or More	9.1	154.9	4.2	167.0	.8	79.8	3.5	170.8	5.08
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	6.6	90.2	2.4	102.4	.8	27.8	3.2	98.7	9.09
1,000 to 1,999	6.7	125.2	3.2	137.6	.8	62.3	2.3	139.7	6.45
2,000 or More	5.8	162.3	2.5	175.6	.5	79.8	2.5	176.9	6.64
Year of Construction									
1949 or Before	9.2	131.9	4.1	139.6	Q	45.0	4.3	138.4	7.38
1950 to 1974	7.2	127.4	3.9	138.5	.5	56.1	3.0	131.9	8.16
1975 or After	2.7	91.6	.5	134.6	1.2	54.8	.8	126.8	12.26
Status of Unit									
Owned	12.0	140.0	5.2	153.8	1.1	70.4	5.0	152.9	5.49
Rented	7.0	97.7	2.9	112.3	1.0	33.6	3.0	104.8	9.32
1987 Family Income									
Less than \$10,000	3.3	106.5	1.4	118.8	.3	33.0	1.5	111.8	12.31
\$10,000 to \$19,999	4.1	112.8	1.8	125.3	.4	35.9	1.7	125.3	9.21
\$20,000 to \$34,999	5.3	115.3	2.2	131.1	.5	53.0	2.4	121.2	8.81
\$35,000 or More	6.3	149.2	2.7	164.2	.9	67.8	2.5	169.1	5.34
Below 100 Percent of Poverty Line	1.9	112.7	.9	127.3	.2	37.0	.7	119.5	14.76
Below 125 Percent of Poverty Line	3.2	112.6	1.5	127.5	.2	35.5	1.3	115.9	11.74
Assistance for Heating in Winter									
Yes	1.0	124.9	.5	141.1	Q	Q	.4	123.6	13.99
No	18.1	124.4	7.6	138.6	2.0	54.3	7.6	135.5	5.60

See footnotes at end of table.

Table 10. Total Consumption per Northeast Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.748	0.423	1.711	0.572	2.902	1.565	1.333	0.533	
Age of Householder									
Under 35 Years	5.4	107.9	2.3	123.8	0.9	50.7	2.0	119.6	7.28
35 to 59 Years	7.6	137.4	3.2	153.6	.8	56.9	3.1	151.8	5.95
60 Years and Over	6.0	122.7	2.5	133.6	.5	52.5	2.9	127.4	9.15
Household Size									
1 Person	5.0	94.3	2.0	106.5	.7	34.9	2.1	105.4	10.99
2 to 4 Persons	12.0	130.6	5.1	145.3	1.3	60.8	5.1	141.1	4.75
5 or More Persons	2.0	161.8	1.0	171.5	Q	Q	.8	171.9	10.50
Secondary Heating									
Yes	6.1	142.7	2.5	158.3	.6	80.4	2.4	163.8	6.91
No	12.9	115.8	5.6	130.3	1.5	42.2	5.7	122.8	6.48
Hot Water Fuel									
Natural Gas	9.0	139.6	7.7	139.3	Q	Q	1.2	147.1	7.90
Electricity	4.5	84.1	.3	123.8	2.0	53.3	1.6	122.3	9.99
Fuel Oil or Kerosene	5.1	136.6	Q	Q	NC	NC	5.0	137.4	8.74
Other .....	.4	83.9	Q	Q	Q	Q	.2	103.7	28.94
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD	2.0	103.9	Q	155.9	Q	54.6	1.2	125.1	20.08
5,500 to 7,000 HDD	8.6	136.1	4.6	143.8	.8	63.1	3.0	148.1	8.06
4,000 to 5,499 HDD	8.4	117.4	3.4	131.3	1.1	46.6	3.8	127.4	9.24
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --									
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 10. Total Consumption per Northeast Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors	0.748	0.423	1.711	0.572	2.902	1.565	1.339	0.533	
New England Division	4.3	121.0	1.2	130.2	0.4	49.2	2.4	135.9	7.39
Metropolitan Status									
Metropolitan	3.5	125.7	1.2	130.2	.4	51.2	1.8	142.6	7.46
Central City	1.3	115.5	.7	120.9	Q	Q	.5	126.6	12.25
Outside Central City	2.1	132.2	.5	141.5	.3	51.3	1.2	149.4	9.01
Nonmetropolitan .....	.8	101.0	NC	NC	Q	Q	.6	116.7	13.66
Payment Method for Utilities									
All Paid by Household	3.4	127.6	.8	140.9	.3	53.7	1.9	143.8	7.25
Some or None Paid by Household, Other Method .....	.9	97.0	.3	103.9	Q	Q	.5	104.5	19.60
Housing Structure									
Mobile Home .....	.2	73.6	NC	NC	NC	NC	.1	77.8	11.89
Single Family	2.3	140.0	.5	154.0	.1	79.0	1.5	152.9	8.41
Building of 2 or More Units	1.7	100.9	.7	115.1	.3	32.9	.7	111.7	12.29
Number of Rooms									
1 to 3 .....	.7	61.0	.2	79.1	.2	27.3	.3	74.2	16.66
4 to 5	1.6	113.3	.5	120.7	.1	43.6	1.0	120.0	8.94
6 or More	1.9	149.8	.5	162.6	.1	92.3	1.2	162.7	7.86
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	1.5	82.9	.5	103.9	.3	28.9	.7	93.1	11.42
1,000 to 1,999	1.5	129.8	.5	141.3	.1	80.1	.8	134.2	8.81
2,000 or More	1.3	154.6	.2	162.4	Q	Q	.9	168.9	9.30
Year of Construction									
1949 or Before	2.0	132.7	.7	133.8	Q	Q	1.2	137.3	7.40
1950 to 1974	1.6	118.5	.4	136.7	.2	37.6	.8	139.4	13.58
1975 or After .....	.7	93.6	Q	85.8	.2	57.0	.3	122.6	24.49
Status of Unit									
Owned	2.6	136.5	.5	148.9	.1	79.9	1.7	148.8	9.19
Rented	1.7	96.8	.7	117.7	.3	33.9	.7	101.7	10.73
1987 Family Income									
Less than \$10,000 .....	.7	102.4	.2	115.1	Q	22.1	.4	113.8	21.00
\$10,000 to \$19,999 .....	.9	108.9	.3	129.2	.1	45.6	.5	117.5	10.55
\$20,000 to \$34,999	1.2	114.5	.4	120.6	.1	62.5	.7	127.9	13.46
\$35,000 or More	1.4	142.8	.4	146.8	.1	59.2	.8	163.0	10.37
Below 100 Percent of Poverty Line .....	.3	104.9	.1	131.6	Q	Q	.2	112.4	23.97
Below 125 Percent of Poverty Line .....	.7	108.8	.2	124.7	Q	Q	.4	118.0	19.98
Assistance for Heating in Winter									
Yes .....	.3	108.5	.1	118.4	Q	Q	.2	118.4	22.44
No	4.0	122.0	1.1	131.4	.4	51.0	2.2	137.2	7.30

See footnotes at end of table.

Table 10. Total Consumption per Northeast Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.748	0.423	1.711	0.572	2.902	1.565	1.333	0.533	
Age of Householder									
Under 35 Years	1.3	108.1	0.4	121.8	0.1	50.1	0.6	119.6	10.31
35 to 59 Years	1.6	130.0	.4	147.0	.2	53.9	.9	146.5	10.01
60 Years and Over	1.4	122.3	.3	120.3	Q	42.5	.9	136.5	12.63
Household Size									
1 Person	1.1	94.8	.3	100.3	.2	32.0	.6	111.9	14.86
2 to 4 Persons	2.8	129.1	.7	141.4	.2	58.6	1.6	143.0	9.19
5 or More Persons .....	.4	132.7	.1	138.6	Q	Q	.2	145.1	16.40
Secondary Heating									
Yes	1.6	137.8	.3	151.1	.1	102.4	1.0	152.9	9.39
No	2.7	110.9	.9	122.0	.3	33.9	1.4	124.5	8.13
Hot Water Fuel									
Natural Gas	1.4	135.9	1.1	133.6	Q	Q	.3	146.2	13.27
Electricity	1.2	82.5	.1	94.2	.4	45.9	.6	110.6	14.61
Fuel Oil or Kerosene	1.4	144.6	NC	NC	NC	NC	1.4	147.4	9.45
Other .....	.2	85.5	NC	NC	Q	Q	.1	104.8	28.54
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD	1.2	103.5	Q	Q	Q	33.5	.9	116.5	11.77
5,500 to 7,000 HDD	2.9	127.5	1.1	128.6	.3	54.4	1.4	146.8	8.45
4,000 to 5,499 HDD	Q	Q	Q	Q	NC	NC	Q	Q	a
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --									
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 10. Total Consumption per Northeast Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.748	0.423	1.711	0.572	2.902	1.565	1.333	0.533	
Middle Atlantic Division	14.8	125.4	6.9	140.3	1.7	54.4	5.6	134.5	5.74
Metropolitan Status									
Metropolitan	13.4	125.6	6.2	139.7	1.6	53.9	5.3	134.7	5.54
Central City	5.3	121.5	2.8	133.9	Q	39.3	2.2	117.8	10.00
Outside Central City	8.0	128.4	3.4	144.4	1.3	57.4	3.0	147.1	6.16
Nonmetropolitan	1.4	123.2	Q	Q	Q	Q	.4	131.3	29.13
Payment Method for Utilities									
All Paid by Household	10.0	138.7	5.1	153.2	1.3	60.0	3.1	160.2	6.33
Some or None Paid by Household, Other Method	4.7	97.3	1.8	103.5	Q	34.3	2.5	102.9	10.84
Housing Structure									
Mobile Home .....	.5	101.9	Q	Q	NC	NC	Q	Q	47.79
Single Family	8.8	145.6	4.5	158.2	1.0	70.4	2.8	165.5	6.40
Building of 2 or More Units	5.5	95.2	2.2	103.9	Q	31.1	2.6	106.5	11.65
Number of Rooms									
1 to 3	2.7	74.5	.8	83.4	Q	28.9	1.3	90.8	17.93
4 to 5	4.9	108.1	2.4	115.3	.4	51.0	2.0	115.0	10.06
6 or More	7.2	156.3	3.8	167.6	.7	77.7	2.4	174.8	6.01
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	5.1	92.3	1.9	102.0	Q	27.3	2.5	100.2	11.94
1,000 to 1,999	5.2	123.9	2.7	137.0	.7	60.0	1.5	142.7	7.94
2,000 or More	4.5	164.5	2.3	176.9	.5	77.8	1.6	181.5	8.06
Year of Construction									
1949 or Before	7.2	131.7	3.4	140.7	Q	40.4	3.1	138.8	8.91
1950 to 1974	5.6	129.9	3.1	138.8	.3	70.9	2.1	129.0	10.31
1975 or After	2.0	90.9	.4	147.2	1.1	54.5	.4	130.1	14.46
Status of Unit									
Owned	9.4	141.0	4.7	154.3	1.0	69.1	3.3	155.1	6.59
Rented	5.4	98.0	2.2	110.6	.7	33.5	2.4	105.7	12.12
1987 Family Income									
Less than \$10,000	2.6	107.5	1.3	119.3	Q	Q	1.1	111.0	14.45
\$10,000 to \$19,999	3.2	113.9	1.5	124.5	.3	32.7	1.2	128.1	11.15
\$20,000 to \$34,999	4.1	115.6	1.8	133.2	.4	50.9	1.7	118.6	10.39
\$35,000 or More	4.8	151.2	2.4	166.9	.8	69.3	1.6	172.3	6.19
Below 100 Percent of Poverty Line	1.5	114.4	.8	126.8	Q	Q	.5	122.1	15.98
Below 125 Percent of Poverty Line	2.5	113.7	1.3	127.9	Q	Q	.9	115.1	13.72
Assistance for Heating in Winter									
Yes .....	.7	132.1	.4	147.6	Q	Q	.2	127.1	17.11
No	14.1	125.1	6.5	139.8	1.7	55.0	5.4	134.8	5.85

See footnotes at end of table.

Table 10. Total Consumption per Northeast Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.748	0.423	1.711	0.572	2.902	1.565	1.333	0.533	
Age of Householder									
Under 35 Years	4.1	107.8	1.9	124.2	0.7	50.7	1.4	119.6	8.97
35 to 59 Years	6.0	139.4	2.8	154.5	.6	57.7	2.2	153.9	7.19
60 Years and Over	4.7	122.9	2.2	135.7	.4	56.1	2.0	123.5	10.83
Household Size									
1 Person	3.9	94.2	1.7	107.6	.6	35.7	1.6	103.1	13.52
2 to 4 Persons	9.2	131.0	4.4	145.9	1.1	61.3	3.5	140.2	5.46
5 or More Persons	1.6	169.3	.8	177.0	Q	Q	.6	181.4	11.58
Secondary Heating									
Yes	4.5	144.4	2.1	159.4	.5	76.5	1.4	171.2	8.83
No	10.3	117.1	4.8	131.7	1.2	44.5	4.2	122.2	8.03
Hot Water Fuel									
Natural Gas	7.6	140.3	6.7	140.2	Q	Q	.9	147.4	9.04
Electricity	3.3	84.8	.2	137.9	1.7	55.0	1.0	129.0	11.63
Fuel Oil or Kerosene	3.7	133.4	Q	Q	NC	NC	3.6	133.7	11.83
Other .....	.2	82.5	Q	Q	NC	NC	Q	Q	67.11
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD	Q	104.5	Q	Q	Q	Q	Q	Q	88.13
5,500 to 7,000 HDD	5.7	140.4	3.5	148.3	.4	69.4	1.6	149.3	10.95
4,000 to 5,499 HDD	8.3	117.1	3.3	131.3	1.1	46.6	3.8	126.9	9.20
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --									
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

NC No cases in sample.

^Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors.

• Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. • Column totals will not sum to total number of households because households with no main heating fuel or with other main heating fuel, such as wood or LPG, were not included.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 11. Total Expenditures per Northeast Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987

Household Characteristics	Total Expenditures In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors	0.752	0.400	1.715	0.916	2.914	1.487	1.342	0.541	
Northeast Region	19.0	1,276	8.1	1,313	2.1	1,191	8.0	1,294	5.98
Metropolitan Status									
Metropolitan	16.8	1,298	7.4	1,337	2.0	1,193	7.0	1,306	6.05
Central City	6.7	1,190	3.4	1,321	Q	959	2.8	1,067	11.09
Outside Central City	10.2	1,368	4.0	1,349	1.6	1,258	4.3	1,460	6.24
Nonmetropolitan	2.2	1,111	Q	Q	Q	1,156	1.0	1,212	9.32
Payment Method for Utilities									
All Paid by Household	13.4	1,423	6.0	1,423	1.6	1,303	5.0	1,532	5.42
Some or None Paid by Household, Other Method	5.7	929	2.1	1,006	Q	794	3.0	898	10.28
Housing Structure									
Mobile Home .....	.7	977	Q	Q	NC	NC	Q	911	26.45
Single Family	11.1	1,506	5.0	1,481	1.1	1,560	4.3	1,601	5.51
Building of 2 or More Units	7.2	950	2.9	1,033	1.0	748	3.3	944	8.99
Number of Rooms									
1 to 3	3.4	715	1.0	768	.8	682	1.6	702	13.69
4 to 5	6.5	1,104	2.9	1,095	.4	1,149	2.9	1,134	7.27
6 or More	9.1	1,609	4.2	1,585	.8	1,715	3.5	1,690	5.40
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	6.6	882	2.4	939	.8	688	3.2	893	9.07
1,000 to 1,999	6.7	1,309	3.2	1,311	.8	1,326	2.3	1,363	6.07
2,000 or More	5.8	1,685	2.5	1,677	.5	1,771	2.5	1,747	7.26
Year of Construction									
1949 or Before	9.2	1,268	4.1	1,295	Q	995	4.3	1,291	8.15
1950 to 1974	7.2	1,293	3.5	1,327	.5	1,285	3.0	1,287	8.55
1975 or After	2.7	1,259	.5	1,353	1.2	1,212	.8	1,339	11.94
Status of Unit									
Owned	12.0	1,467	5.2	1,477	1.1	1,540	5.0	1,514	5.77
Rented	7.0	950	2.9	1,022	1.0	786	3.0	928	9.30
1987 Family Income									
Less than \$10,000	3.3	945	1.4	988	.3	755	1.5	954	12.83
\$10,000 to \$19,999	4.1	1,118	1.8	1,148	.4	840	1.7	1,172	8.21
\$20,000 to \$34,999	5.3	1,200	2.2	1,243	.5	1,191	2.4	1,183	8.68
\$35,000 or More	6.3	1,619	2.7	1,645	.9	1,485	2.5	1,698	5.92
Below 100 Percent of Poverty Line	1.9	1,026	.9	1,082	.2	833	.7	1,023	15.30
Below 125 Percent of Poverty Line	3.2	1,046	1.5	1,102	.2	813	1.3	1,030	12.50
Assistance for Heating in Winter									
Yes	1.0	1,114	.5	1,172	Q	Q	.4	1,129	13.25
No	18.1	1,285	7.6	1,322	2.0	1,212	7.6	1,303	6.01

See footnotes at end of table.

Table 11. Total Expenditures per Northeast Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.752	0.400	1.715	0.616	2.914	1.487	1.342	0.541	
Age of Householder									
Under 35 Years	5.4	1,137	2.3	1,147	0.9	1,168	2.0	1,153	7.61
35 to 59 Years	7.6	1,456	3.2	1,497	.8	1,264	3.1	1,537	6.09
60 Years and Over	6.0	1,173	2.5	1,229	.5	1,134	2.9	1,132	9.53
Household Size									
1 Person	5.0	877	2.0	892	.7	796	2.1	886	10.11
2 to 4 Persons	12.0	1,362	5.1	1,402	1.3	1,347	5.1	1,378	4.67
5 or More Persons	2.0	1,743	1.0	1,715	Q	Q	.8	1,820	10.24
Secondary Heating									
Yes	6.1	1,519	2.5	1,513	.6	1,639	2.4	1,636	6.81
No	12.9	1,162	5.6	1,225	1.5	1,005	5.7	1,151	6.80
Hot Water Fuel									
Natural Gas	9.0	1,325	7.7	1,309	Q	Q	1.2	1,453	8.92
Electricity	4.5	1,239	.3	1,323	2.0	1,201	1.6	1,344	10.15
Fuel Oil or Kerosene	5.1	1,244	Q	Q	NC	NC	5.0	1,248	9.25
Other .....	.4	1,019	Q	Q	Q	Q	.2	1,118	28.00
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD	2.0	1,114	Q	1,435	Q	1,188	1.2	1,173	21.33
5,500 to 7,000 HDD	8.6	1,318	4.6	1,223	.8	1,430	3.0	1,442	9.42
4,000 to 5,499 HDD	8.4	1,272	3.4	1,427	1.1	1,032	3.8	1,215	9.60
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --									
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 11. Total Expenditures per Northeast Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.752	0.400	1.715	0.616	2.914	1.487	1.342	0.541	
New England Division	4.3	1,222	1.2	1,220	0.4	1,084	2.4	1,284	6.90
Metropolitan Status									
Metropolitan	3.5	1,255	1.2	1,220	.4	1,115	1.8	1,326	6.91
Central City	1.3	1,114	.7	1,135	Q	Q	.5	1,126	11.01
Outside Central City	2.1	1,344	.5	1,324	.3	1,162	1.2	1,412	8.99
Nonmetropolitan .....	.8	1,078	NC	NC	Q	Q	.6	1,162	14.65
Payment Method for Utilities									
All Paid by Household	3.4	1,309	.8	1,321	.3	1,221	1.9	1,379	7.44
Some or None Paid by Household, Other Method .....	.9	901	.3	972	Q	Q	.5	905	17.58
Housing Structure									
Mobile Home .....	.2	927	NC	NC	NC	NC	.1	943	16.16
Single Family	2.3	1,426	.5	1,458	.1	1,774	1.5	1,457	8.25
Building of 2 or More Units	1.7	979	.7	1,069	.3	704	.7	990	10.29
Number of Rooms									
1 to 3 .....	.7	687	.2	784	.2	651	.3	640	15.44
4 to 5	1.6	1,106	.5	1,128	.1	976	1.0	1,125	7.76
6 or More	1.9	1,518	.5	1,508	.1	1,931	1.2	1,557	8.16
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	1.5	881	.5	991	.3	690	.7	888	10.33
1,000 to 1,999	1.5	1,270	.5	1,270	.1	1,564	.8	1,257	7.17
2,000 or More	1.3	1,556	.2	1,603	Q	Q	.9	1,599	9.56
Year of Construction									
1949 or Before	2.0	1,224	.7	1,202	Q	Q	1.2	1,249	6.35
1950 to 1974	1.6	1,235	.4	1,325	.2	865	.8	1,343	12.58
1975 or After .....	.7	1,183	Q	963	.2	1,297	.3	1,261	21.32
Status of Unit									
Owned	2.6	1,386	.5	1,417	.1	1,799	1.7	1,415	8.86
Rented	1.7	964	.7	1,088	.3	727	.7	933	9.82
1987 Family Income									
Less than \$10,000 .....	.7	939	.2	1,028	Q	543	.4	985	19.86
\$10,000 to \$19,999 .....	.9	1,086	.3	1,196	.1	881	.5	1,111	9.69
\$20,000 to \$34,999	1.2	1,182	.4	1,129	.1	1,404	.7	1,209	12.40
\$35,000 or More	1.4	1,471	.4	1,409	.1	1,338	.8	1,584	10.08
Below 100 Percent of Poverty Line .....	.3	1,043	.1	1,257	Q	Q	.2	1,049	20.99
Below 125 Percent of Poverty Line .....	.7	1,031	.2	1,136	Q	574	.4	1,067	20.10
Assistance for Heating in Winter									
Yes .....	.3	1,070	.1	1,152	Q	Q	.2	1,114	19.22
No	4.0	1,233	1.1	1,227	.4	1,120	2.2	1,296	6.93

See footnotes at end of table.

Northeast

New England

Expenditures

Table 11. Total Expenditures per Northeast Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.752	0.400	1.715	0.616	2.914	1.487	1.342	0.541	
Age of Householder									
Under 35 Years	1.3	1,108	0.4	1,118	0.1	999	0.6	1,161	9.04
35 to 59 Years	1.6	1,367	.4	1,422	.2	1,246	.9	1,438	9.46
60 Years and Over	1.4	1,153	.3	1,100	Q	964	.9	1,211	12.49
Household Size									
1 Person	1.1	909	.3	888	.2	769	.6	971	13.16
2 to 4 Persons	2.8	1,303	.7	1,330	.2	1,242	1.6	1,355	8.27
5 or More Persons .....	.4	1,463	.1	1,382	Q	Q	.2	1,559	15.52
Secondary Heating									
Yes	1.6	1,424	.3	1,450	.1	2,053	1.0	1,458	9.81
No	2.7	1,100	.9	1,130	.3	804	1.4	1,168	7.19
Hot Water Fuel									
Natural Gas	1.4	1,256	1.1	1,229	Q	Q	.3	1,353	12.84
Electricity	1.2	1,141	.1	1,121	.4	1,064	.6	1,238	12.56
Fuel Oil or Kerosene	1.4	1,291	NC	NC	NC	NC	1.4	1,307	10.84
Other .....	.2	982	NC	NC	Q	Q	.1	1,070	26.97
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD	1.2	1,078	Q	Q	Q	821	.9	1,127	14.47
5,500 to 7,000 HDD	2.9	1,272	1.1	1,195	.3	1,170	1.4	1,366	7.92
4,000 to 5,499 HDD	Q	Q	Q	Q	NC	NC	Q	Q	a
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --									
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 11. Total Expenditures per Northeast Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.752	0.400	1.715	0.616	2.914	1.487	1.342	0.541	
Middle Atlantic Division	14.8	1,292	6.9	1,329	1.7	1,217	5.6	1,299	6.23
Metropolitan Status									
Metropolitan	13.4	1,309	6.2	1,359	1.6	1,210	5.3	1,300	6.04
Central City	5.3	1,209	2.8	1,365	Q	Q	2.2	1,053	9.38
Outside Central City	8.0	1,375	3.4	1,354	1.3	1,276	3.0	1,480	6.57
Nonmetropolitan	1.4	1,130	Q	Q	Q	Q	.4	1,290	15.93
Payment Method for Utilities									
All Paid by Household	10.0	1,461	5.1	1,440	1.3	1,324	3.1	1,626	6.73
Some or None Paid by Household, Other Method	4.7	934	1.8	1,013	Q	837	2.5	896	11.91
Housing Structure									
Mobile Home .....	.5	999	Q	Q	NC	NC	Q	Q	47.14
Single Family	8.8	1,527	4.5	1,484	1.0	1,528	2.8	1,680	6.56
Building of 2 or More Units	5.5	941	2.2	1,022	Q	765	2.6	931	11.86
Number of Rooms									
1 to 3	2.7	722	.8	763	Q	692	1.3	714	17.41
4 to 5	4.9	1,104	2.4	1,089	.4	1,185	2.0	1,139	9.52
6 or More	7.2	1,633	3.8	1,595	.7	1,678	2.4	1,756	6.38
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	5.1	883	1.9	926	Q	687	2.5	894	12.13
1,000 to 1,999	5.2	1,320	2.7	1,318	.7	1,295	1.5	1,419	7.34
2,000 or More	4.5	1,722	2.3	1,684	.5	1,723	1.6	1,831	8.74
Year of Construction									
1949 or Before	7.2	1,280	3.4	1,314	Q	938	3.1	1,308	10.28
1950 to 1974	5.6	1,309	3.1	1,327	.3	1,619	2.1	1,265	10.89
1975 or After	2.0	1,286	.4	1,454	1.1	1,200	.4	1,402	14.46
Status of Unit									
Owned	9.4	1,489	4.7	1,483	1.0	1,504	3.3	1,566	6.95
Rented	5.4	945	2.2	1,001	.7	810	2.4	927	12.49
1987 Family Income									
Less than \$10,000	2.6	947	1.3	983	Q	Q	1.1	942	15.56
\$10,000 to \$19,999	3.2	1,126	1.5	1,139	.3	826	1.2	1,194	9.97
\$20,000 to \$34,999	4.1	1,206	1.8	1,266	.4	1,143	1.7	1,172	10.22
\$35,000 or More	4.8	1,663	2.4	1,683	.8	1,511	1.6	1,758	6.91
Below 100 Percent of Poverty Line	1.5	1,022	.8	1,063	Q	Q	.5	1,014	17.39
Below 125 Percent of Poverty Line	2.5	1,050	1.3	1,097	Q	Q	.9	1,014	15.26
Assistance for Heating in Winter									
Yes .....	.7	1,134	.4	1,178	Q	Q	.2	1,140	17.47
No	14.1	1,299	6.5	1,337	1.7	1,233	5.4	1,306	6.32

See footnotes at end of table.

Table 11. Total Expenditures per Northeast Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.752	0.400	1.715	0.616	2.914	1.487	1.342	0.541	
Age of Householder									
Under 35 Years	4.1	1,146	1.9	1,153	0.7	1,186	1.4	1,149	9.49
35 to 59 Years	6.0	1,480	2.8	1,508	.6	1,268	2.2	1,576	7.38
60 Years and Over	4.7	1,179	2.2	1,249	.4	1,194	2.0	1,099	11.42
Household Size									
1 Person	3.9	869	1.7	892	.6	304	1.6	855	12.75
2 to 4 Persons	9.2	1,380	4.4	1,414	1.1	1,370	3.5	1,389	5.44
5 or More Persons	1.6	1,815	.8	1,771	Q	Q	.6	1,912	11.35
Secondary Heating									
Yes	4.5	1,552	2.1	1,523	.5	1,565	1.4	1,756	8.51
No	10.3	1,178	4.8	1,242	1.2	1,061	4.2	1,146	8.52
Hot Water Fuel									
Natural Gas	7.6	1,337	6.7	1,322	Q	Q	.9	1,487	10.32
Electricity	3.3	1,276	.2	1,420	1.7	1,233	1.0	1,405	12.91
Fuel Oil or Kerosene	3.7	1,225	Q	Q	NC	NC	3.6	1,226	12.65
Other .....	.2	1,052	Q	Q	NC	NC	Q	Q	63.12
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD	Q	1,170	Q	Q	Q	Q	Q	Q	88.92
5,500 to 7,000 HDD	5.7	1,342	3.5	1,232	.4	1,516	1.6	1,512	13.59
4,000 to 5,499 HDD	8.3	1,269	3.3	1,428	1.1	1,032	3.8	1,208	9.57
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --									
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

NC No cases in sample.

^Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors.

• Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. • Column totals will not sum to total number of households because households with no main heating fuel or with other main heating fuel, such as wood or LPG, were not included.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 12. Natural Gas Consumption and Expenditures for Northeast Region Households, 1987

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.781	1.152	1.152	1.073	0.372	2.160	0.766	0.766	0.837	
Northeast Region	11.7	85.9	88.5	571	6.45	8.1	115.4	119.0	742	5.11
Metropolitan Status										
Metropolitan	11.0	83.7	86.3	569	6.59	7.4	115.0	118.6	755	4.79
Central City	5.6	74.7	77.0	547	7.11	3.4	111.3	114.7	783	6.09
Outside Central City	5.4	93.2	96.0	591	6.15	4.0	118.2	121.9	730	4.67
Nonmetropolitan	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Natural Gas Paid by Household										
Yes	8.2	97.1	100.1	636	6.35	6.0	125.3	129.2	792	5.79
No	3.5	59.7	61.5	421	6.84	2.1	87.7	90.4	603	6.23
Housing Structure										
Mobile Home	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Single Family	6.1	112.0	115.5	723	6.26	5.0	130.8	134.8	827	5.21
Building of 2 or More Units	5.4	55.5	57.2	399	6.97	2.9	89.6	92.4	606	6.23
Number of Rooms										
1 to 3	2.1	37.4	38.6	262	6.79	1.0	70.0	72.1	454	15.80
4 to 5	4.2	73.7	76.0	506	6.66	2.9	98.3	101.3	646	5.97
6 or More	5.4	113.6	117.2	739	6.30	4.2	137.4	141.7	873	5.20
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	4.3	54.6	56.3	377	6.70	2.4	86.6	89.3	560	7.63
1,000 to 1,999	4.2	93.5	96.4	617	6.40	3.2	114.8	118.4	740	4.04
2,000 or More	3.2	117.5	121.2	769	6.35	2.5	144.0	148.5	921	6.81
Year of Construction										
1949 or Before	6.7	80.8	83.3	556	6.67	4.1	118.4	122.1	775	5.26
1950 to 1974	4.4	91.5	94.3	585	6.20	3.5	113.3	116.8	714	5.51
1975 or After	.6	101.1	104.3	645	6.19	.5	106.3	109.6	675	17.28
Status of Unit										
Owned	6.6	104.5	107.7	682	6.33	5.2	126.8	130.7	811	5.42
Rented	5.1	61.5	63.4	426	6.72	2.9	95.2	98.2	622	6.53
1987 Family Income										
Less than \$10,000	2.1	74.4	76.7	480	6.25	1.4	103.3	106.5	639	10.42
\$10,000 to \$19,999	2.7	75.4	77.7	497	6.39	1.8	105.1	108.4	667	6.34
\$20,000 to \$34,999	3.2	77.9	80.3	525	6.54	2.2	108.1	111.4	697	6.29
\$35,000 or More	3.6	107.6	111.0	722	6.50	2.7	134.2	138.4	881	5.37
Below 100 Percent of Poverty Line	1.3	79.7	82.2	523	6.36	.9	109.5	112.9	694	12.99
Below 125 Percent of Poverty Line	2.1	82.6	85.1	541	6.35	1.5	109.8	113.2	697	9.92
Assistance for Heating in Winter										
Yes	.7	91.4	94.3	591	6.27	.5	123.5	127.4	780	12.24
No	10.9	85.5	88.1	570	6.46	7.6	114.9	118.4	740	5.15
Age of Householder										
Under 35 Years	3.3	79.9	82.4	530	6.44	2.3	103.3	106.5	662	6.93
35 to 59 Years	4.6	95.4	98.3	632	6.42	3.2	125.5	129.4	806	4.93
60 Years and Over	3.8	79.7	82.1	534	6.50	2.5	113.5	117.0	734	7.66

See footnotes at end of table.

Table 12. Natural Gas Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel					RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)		
RSE Column Factors:	1.781	1.152	1.152	1.073	0.372	2.160	0.766	0.766	0.837		
Household Size											
1 Person	3.2	62.5	64.4	403	6.25	2.0	92.3	95.2	569	9.19	
2 to 4 Persons	7.2	91.1	93.9	608	6.47	5.1	119.8	123.5	775	4.43	
5 or More Persons	1.3	113.1	116.6	771	6.61	1.0	140.1	144.4	929	7.50	
Secondary Heating											
Yes	3.3	102.7	105.9	654	6.17	2.5	125.8	129.7	777	6.28	
No	8.4	79.3	81.7	539	6.59	5.6	110.9	114.3	727	6.03	
Hot Water Fuel											
Natural Gas	9.0	104.8	108.1	684	6.33	7.7	116.4	120.0	748	4.01	
Electricity .....	.5	68.2	70.3	457	6.50	.3	90.9	93.8	587	11.93
Fuel Oil or Kerosene	2.2	10.1	10.4	122	11.77	Q	Q	Q	Q	19.06	
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	a	
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	Q	101.1	104.2	628	6.03	Q	127.9	131.8	778	44.17	
5,500 to 7,000 HDD	5.5	105.1	108.3	628	5.80	4.6	120.7	124.5	710	3.76	
4,000 to 5,499 HDD	6.0	67.9	70.0	517	7.39	3.4	107.6	111.0	784	7.94	
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	
2,000 CDD or More and --											
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	

See footnotes at end of table.

Table 12. Natural Gas Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.781	1.152	1.152	1.073	0.372	2.160	0.766	0.766	0.837	
New England Division	1.7	84.2	86.8	586	6.75	1.2	108.5	111.9	738	4.85
Metropolitan Status										
Metropolitan	1.7	84.2	86.8	586	6.75	1.2	108.5	111.9	738	4.85
Central City .....	.9	82.6	85.2	586	6.88	.7	103.0	106.2	714	7.08
Outside Central City .....	.8	86.0	88.7	587	6.62	.5	115.2	118.8	767	9.49
Nonmetropolitan	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Natural Gas Paid by Household										
Yes	1.3	85.7	88.3	599	6.78	.8	118.6	122.3	804	6.78
No .....	.4	79.3	81.7	544	6.66	.3	83.9	86.5	576	9.99
Housing Structure										
Mobile Home	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Single Family .....	.7	98.8	101.9	683	6.70	.5	127.9	131.9	858	7.99
Building of 2 or More Units	1.0	74.7	77.0	524	6.80	.7	96.3	99.2	661	5.50
Number of Rooms										
1 to 3 .....	.3	51.5	53.1	372	7.01	.2	62.2	64.2	440	7.58
4 to 5 .....	.7	78.0	80.4	552	6.87	.5	101.7	104.8	707	9.34
6 or More .....	.7	102.5	105.7	699	6.62	.5	136.1	140.3	901	7.52
Measured Heated Area of Residence (square feet)										
Fewer than 1,000 .....	.6	69.8	72.0	498	6.91	.5	85.6	88.2	599	6.75
1,000 to 1,999 .....	.7	94.2	97.1	642	6.61	.5	119.8	123.5	799	4.13
2,000 or More .....	.4	89.4	92.1	628	6.82	.2	133.0	137.1	902	11.79
Year of Construction										
1949 or Before	1.1	79.3	81.8	555	6.78	.7	114.7	118.3	774	5.15
1950 to 1974 .....	.4	101.6	104.7	693	6.62	.4	110.2	113.6	748	17.61
1975 or After	Q	Q	Q	487	7.20	Q	Q	Q	487	34.59
Status of Unit										
Owned .....	.8	84.7	87.3	589	6.75	.5	123.7	127.5	833	8.86
Rented .....	.9	83.8	86.4	584	6.76	.7	98.4	101.5	674	4.50
1987 Family Income										
Less than \$10,000 .....	.2	74.8	77.1	529	6.86	.2	101.1	104.2	700	16.20
\$10,000 to \$19,999 .....	.4	85.8	88.4	608	6.88	.3	109.2	112.6	757	9.55
\$20,000 to \$34,999 .....	.5	79.8	82.3	548	6.66	.4	99.0	102.0	662	8.77
\$35,000 or More .....	.6	90.7	93.5	627	6.70	.4	120.5	124.3	813	8.02
Below 100 Percent of Poverty Line .....	.1	102.4	105.6	754	7.14	.1	114.5	118.1	847	22.50
Below 125 Percent of Poverty Line .....	.2	96.9	99.9	682	6.83	.2	109.4	112.8	767	13.92
Assistance for Heating in Winter										
Yes .....	.1	83.9	86.5	640	7.40	.1	103.2	106.4	781	16.18
No	1.6	84.2	86.8	581	6.69	1.1	109.1	112.4	733	4.78
Age of Householder										
Under 35 Years .....	.5	89.1	91.8	608	6.62	.4	101.4	104.5	682	9.70
35 to 59 Years .....	.6	91.6	94.4	641	6.79	.4	120.7	124.4	825	9.58
60 Years and Over .....	.5	70.6	72.8	500	6.87	.3	102.7	105.9	702	8.37

See footnotes at end of table.

Table 12. Natural Gas Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.781	1.152	1.152	1.073	0.372	2.160	0.766	0.766	0.837	
Household Size										
1 Person	0.4	66.6	68.6	459	6.69	0.3	84.7	87.3	570	12.55
2 to 4 Persons	1.1	88.3	91.0	612	6.72	.7	117.6	121.3	796	5.99
5 or More Persons .....	.2	99.2	102.3	716	7.01	.1	114.1	117.6	808	6.91
Secondary Heating										
Yes .....	.6	88.3	91.1	622	6.83	.3	121.0	124.7	827	9.21
No	1.1	82.2	84.7	569	6.72	.9	103.7	106.9	703	5.95
Hot Water Fuel										
Natural Gas	1.4	95.3	98.2	654	6.66	1.1	112.5	115.9	760	4.92
Electricity .....	.1	57.3	59.1	437	7.39	.1	67.3	69.4	503	23.38
Fuel Oil or Kerosene .....	.2	9.8	10.1	121	11.89	NC	NC	NC	NC	27.75
Other	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
5,500 to 7,000 HDD	1.5	84.2	86.8	582	6.70	1.1	107.6	111.0	727	5.05
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 12. Natural Gas Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.781	1.152	1.152	1.073	0.372	2.160	0.766	0.766	0.837	
Middle Atlantic Division	10.0	86.1	88.8	568	6.40	6.9	116.6	120.2	743	5.91
Metropolitan Status										
Metropolitan	9.3	83.7	86.3	566	6.56	6.2	116.2	119.8	758	5.56
Central City	4.7	73.2	75.5	540	7.16	2.8	113.2	116.7	799	7.22
Outside Central City	4.6	94.4	97.3	592	6.08	3.4	118.6	122.3	725	5.15
Nonmetropolitan	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Natural Gas Paid by Household										
Yes	6.9	99.3	102.4	643	6.28	5.1	126.4	130.3	790	6.65
No	3.1	57.2	59.0	406	6.88	1.8	88.4	91.1	608	7.12
Housing Structure										
Mobile Home	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Single Family	5.4	113.6	117.2	728	6.21	4.5	131.0	135.1	824	5.71
Building of 2 or More Units	4.4	51.0	52.6	369	7.02	2.2	87.4	90.1	588	8.11
Number of Rooms										
1 to 3	1.8	35.4	36.5	246	6.74	.8	72.0	74.3	458	19.53
4 to 5	3.5	72.8	75.1	497	6.61	2.4	97.6	100.6	634	7.15
6 or More	4.7	115.3	118.9	745	6.26	3.8	137.6	141.9	870	5.79
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	3.7	52.0	53.6	357	6.65	1.9	86.8	89.5	551	9.38
1,000 to 1,999	3.5	93.3	96.2	612	6.36	2.7	113.9	117.5	729	4.70
2,000 or More	2.8	121.5	125.2	789	6.30	2.3	145.1	149.6	923	7.34
Year of Construction										
1949 or Before	5.5	81.1	83.6	556	6.65	3.4	119.2	122.9	776	6.21
1950 to 1974	4.0	90.4	93.2	573	6.14	3.1	113.7	117.2	710	5.94
1975 or After .....	.5	109.8	113.2	683	6.04	.4	116.8	120.4	723	18.17
Status of Unit										
Owned	5.8	107.2	110.5	694	6.29	4.7	127.1	131.1	808	5.89
Rented	4.2	56.7	58.4	392	6.70	2.2	94.2	97.2	605	8.51
1987 Family Income										
Less than \$10,000	1.9	74.4	76.7	474	6.18	1.3	103.5	106.8	631	11.66
\$10,000 to \$19,999	2.3	73.5	75.8	477	6.29	1.5	104.3	107.6	650	7.47
\$20,000 to \$34,999	2.8	77.6	80.0	521	6.52	1.8	109.9	113.3	704	7.12
\$35,000 or More	3.0	110.8	114.3	740	6.47	2.4	136.4	140.7	892	5.92
Below 100 Percent of Poverty Line	1.2	77.7	80.1	503	6.27	.8	108.9	112.3	677	14.67
Below 125 Percent of Poverty Line	1.9	80.8	83.3	523	6.28	1.3	109.8	113.2	686	11.37
Assistance for Heating in Winter										
Yes .....	.6	93.3	96.2	579	6.02	.4	129.4	133.4	779	14.72
No	9.4	85.7	88.4	568	6.43	6.5	115.8	119.4	741	5.95
Age of Householder										
Under 35 Years	2.7	78.0	80.5	515	6.40	1.9	103.7	107.0	657	8.38
35 to 59 Years	3.9	96.0	98.9	630	6.37	2.8	126.3	130.2	803	5.45
60 Years and Over	3.3	81.1	83.7	539	6.44	2.2	115.2	118.7	739	8.76

See footnotes at end of table.

Table 12. Natural Gas Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
	1.781	1.152	1.152	1.073	0.372	2.160	0.766	0.766	0.837	
RSE Column Factors:										
Household Size										
1 Person	2.7	61.9	63.8	394	6.18	1.7	93.7	96.6	569	10.46
2 to 4 Persons	6.1	91.6	94.4	607	6.43	4.4	120.1	123.9	771	5.12
5 or More Persons	1.2	115.3	118.9	780	6.56	.8	144.5	149.0	950	8.47
Secondary Heating										
Yes	2.7	105.6	108.9	660	6.06	2.1	126.5	130.4	770	7.37
No	7.3	78.8	81.3	534	6.57	4.8	112.1	115.6	731	7.01
Hot Water Fuel										
Natural Gas	7.6	106.6	109.9	689	6.27	6.7	117.0	120.6	746	4.56
Electricity .....	.3	72.3	74.5	465	6.24	.2	102.2	105.4	628	13.05
Fuel Oil or Kerosene	2.0	10.1	10.4	122	11.76	Q	Q	Q	Q	20.58
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
5,500 to 7,000 HDD	4.0	112.9	116.4	646	5.55	3.5	124.7	128.5	705	4.21
4,000 to 5,499 HDD	5.9	67.9	70.0	516	7.37	3.3	107.8	111.1	783	8.03
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

^{nc} No cases in sample.

^Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cells corresponding column and row factors.

• Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, F of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 13. Electricity Consumption and Expenditures for Northeast Region Households, 1987

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors	0.582	0.688	0.688	0.639	0.273	3.232	1.627	1.627	1.602	
Northeast Region	19.0	6.83	23.3	648	27.78	2.1	14.53	49.6	1,160	4.66
Metropolitan Status										
Metropolitan	16.8	6.71	22.9	654	28.57	2.0	14.48	49.4	1,160	5.01
Central City	6.7	4.58	15.6	513	32.79	Q	11.16	38.1	927	13.24
Outside Central City	10.2	8.09	27.6	746	27.00	1.6	15.40	52.5	1,225	4.81
Nonmetropolitan	2.2	7.81	26.7	604	22.66	Q	15.49	52.8	1,156	11.04
Electricity Paid by Household										
Yes	17.0	7.11	24.3	675	27.82	1.7	15.80	53.9	1,250	4.03
No	2.0	4.45	15.2	412	27.18	Q	9.59	32.7	808	20.50
Housing Structure										
Mobile Home	.7	6.43	22.0	521	23.72	NC	NC	NC	NC	18.81
Single Family	11.1	8.56	29.2	787	26.95	1.1	19.40	66.2	1,514	3.96
Building of 2 or More Units	7.2	4.22	14.4	445	30.92	1.0	8.68	29.6	734	9.47
Number of Rooms										
1 to 3	3.4	3.72	12.7	379	29.81	.8	8.09	27.6	675	14.65
4 to 5	6.5	5.46	18.6	529	28.41	.4	13.90	47.4	1,124	5.68
6 or More	9.1	8.98	30.6	833	27.19	.8	21.21	72.4	1,657	3.95
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	6.6	4.17	14.2	420	29.50	.8	7.89	26.9	681	7.77
1,000 to 1,999	6.7	7.03	24.0	671	28.01	.8	16.37	55.9	1,278	6.29
2,000 or More	5.8	9.63	32.9	879	26.74	.5	22.11	75.4	1,727	5.73
Year of Construction										
1949 or Before	9.2	5.59	19.1	552	28.97	Q	11.81	40.3	963	8.55
1950 to 1974	7.2	6.74	23.0	663	28.66	.5	15.05	51.4	1,239	8.28
1975 or After	2.7	11.26	38.4	926	24.12	1.2	15.16	51.7	1,188	6.96
Status of Unit										
Owned	12.0	8.27	28.2	765	27.12	1.1	19.22	65.6	1,498	3.91
Rented	7.0	4.37	14.9	446	29.91	1.0	9.10	31.0	767	8.81
1987 Family Income										
Less than \$10,000	3.3	4.16	14.2	395	27.83	.3	9.11	31.1	741	12.38
\$10,000 to \$19,999	4.1	5.55	18.9	534	28.20	.4	9.53	32.5	817	8.50
\$20,000 to \$34,999	5.3	6.64	22.6	620	27.39	.5	15.44	52.7	1,186	8.21
\$35,000 or More	6.3	9.26	31.6	879	27.84	.9	17.91	61.1	1,429	4.78
Below 100 Percent of Poverty Line	1.9	4.77	16.3	447	27.46	.2	9.99	34.1	813	18.75
Below 125 Percent of Poverty Line	3.2	4.97	17.0	467	27.53	.2	9.89	33.7	800	13.19
Assistance for Heating in Winter										
Yes	1.0	4.52	15.4	449	29.12	Q	Q	Q	Q	11.66
No	18.1	6.96	23.7	659	27.73	2.0	14.83	50.6	1,181	4.61
Age of Householder										
Under 35 Years	5.4	6.37	21.7	604	27.78	.9	13.57	46.3	1,125	6.32
35 to 59 Years	7.6	8.23	28.1	773	27.55	.8	15.63	53.3	1,230	5.38
60 Years and Over	6.0	5.49	18.7	528	28.20	.5	14.49	49.4	1,110	10.65

See footnotes at end of table.

Table 13. Electricity Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.882	0.688	0.688	0.639	0.273	3.232	1.627	1.627	1.602	
Household Size										
1 Person	5.0	4.06	13.8	394	28.47	0.7	9.24	31.5	772	10.49
2 to 4 Persons	12.0	7.55	25.7	708	27.49	1.3	16.84	57.4	1,321	3.88
5 or More Persons	2.0	9.43	32.2	914	28.42	Q	Q	Q	Q	10.50
Secondary Heating										
Yes	6.1	9.38	32.0	836	26.13	.6	20.12	68.6	1,545	5.80
No	12.9	5.63	19.2	559	29.07	1.5	12.22	41.7	1,001	5.44
Hot Water Fuel										
Natural Gas	9.0	5.43	18.5	561	30.25	Q	Q	Q	Q	6.98
Electricity	4.5	11.77	40.2	957	23.83	2.0	14.77	50.4	1,176	7.26
Fuel Oil or Kerosene	5.1	5.00	17.1	537	31.47	NC	NC	NC	NC	9.51
Other .....	.4	6.01	20.5	529	25.77	Q	Q	Q	Q	19.38
All-Electric Home										
Yes	2.0	14.54	49.6	1,164	23.47	2.0	14.54	49.6	1,164	8.65
No	17.1	5.96	20.3	589	28.98	Q	Q	Q	Q	3.31
Air Conditioning										
Yes	10.4	7.85	26.8	748	27.93	1.6	14.40	49.1	1,155	5.54
Central Unit	3.0	11.42	39.0	1,017	26.09	.9	16.44	56.1	1,318	6.66
Electric	2.9	11.56	39.5	1,028	26.05	.9	16.44	56.1	1,318	6.71
Individual Room Units ¹	7.4	6.41	21.9	640	29.26	.7	11.69	39.9	940	7.47
One Unit	4.2	5.77	19.7	562	28.53	.5	10.92	37.3	903	8.67
Two or More Units	3.2	7.26	24.8	744	30.04	Q	Q	Q	Q	7.22
No	8.7	5.62	19.2	527	27.52	.5	15.01	51.2	1,176	7.21
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	2.0	7.74	26.4	634	24.03	Q	15.89	54.2	1,179	16.54
5,500 to 7,000 HDD	8.6	7.31	24.9	658	26.38	.8	17.19	58.7	1,391	9.15
4,000 to 5,499 HDD	8.4	6.13	20.9	641	30.61	1.1	12.49	42.6	1,002	7.87
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 13. Electricity Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.882	0.688	0.688	0.639	0.273	3.232	1.627	1.627	1.602	
New England Division	4.3	6.73	22.9	600	26.16	0.4	13.26	45.2	1,055	6.66
Metropolitan Status										
Metropolitan	3.5	6.71	22.9	602	26.30	.4	13.68	46.7	1,082	6.63
Central City	1.3	5.02	17.1	474	27.68	Q	11.65	39.8	938	15.26
Outside Central City	2.1	7.78	26.5	683	25.73	.3	14.63	49.9	1,149	9.34
Nonmetropolitan .....	.8	6.78	23.1	592	25.59	Q	Q	Q	Q	11.56
Electricity Paid by Household										
Yes	3.9	6.93	23.6	620	26.23	.3	15.15	51.7	1,198	7.05
No .....	.3	4.36	14.9	371	24.94	Q	Q	Q	Q	24.85
Housing Structure										
Mobile Home .....	.2	5.71	19.5	499	25.59	NC	NC	NC	NC	15.77
Single Family	2.3	8.33	28.4	730	25.70	.1	22.47	76.7	1,753	7.84
Building of 2 or More Units	1.7	4.67	15.9	436	27.34	.3	8.17	27.9	670	7.64
Number of Rooms										
1 to 3 .....	.7	4.26	14.6	388	26.64	.2	7.74	26.4	643	10.84
4 to 5	1.6	5.36	18.3	492	26.93	.1	11.61	39.6	938	8.17
6 or More	1.9	8.79	30.0	770	25.68	.1	24.21	82.6	1,870	8.59
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	1.5	4.87	16.6	443	26.70	.3	8.24	28.1	683	8.23
1,000 to 1,999	1.5	6.72	22.9	600	25.18	.1	18.76	64.0	1,451	9.74
2,000 or More	1.3	8.86	30.2	780	25.80	Q	Q	Q	Q	7.47
Year of Construction										
1949 or Before	2.0	5.49	18.7	502	26.84	Q	Q	Q	Q	6.84
1950 to 1974	1.6	7.16	24.4	644	26.35	.2	10.58	36.1	851	8.18
1975 or After .....	.7	9.29	31.7	783	24.70	.2	16.70	57.0	1,297	16.27
Status of Unit										
Owned	2.6	7.92	27.0	698	25.80	.1	22.70	77.4	1,776	8.69
Rented	1.7	4.85	16.5	448	27.08	.3	8.54	29.1	694	9.25
1987 Family Income										
Less than \$10,000 .....	.7	4.16	14.2	386	27.15	Q	6.49	22.1	543	15.50
\$10,000 to \$19,999 .....	.9	5.55	19.0	503	26.52	.1	9.35	31.9	788	8.88
\$20,000 to \$34,999	1.2	6.72	22.9	597	26.02	.1	18.31	62.5	1,404	17.14
\$35,000 or More	1.4	8.65	29.5	764	25.89	.1	16.60	56.7	1,313	7.62
Below 100 Percent of Poverty Line .....	.3	5.41	18.5	478	25.86	Q	Q	Q	Q	16.29
Below 125 Percent of Poverty Line .....	.7	5.00	17.1	449	26.32	Q	Q	Q	574	13.26
Assistance for Heating in Winter										
Yes .....	.3	4.94	16.8	452	26.86	Q	Q	Q	Q	16.58
No	4.0	6.86	23.4	612	26.12	.4	13.68	46.7	1,089	6.75
Age of Householder										
Under 35 Years	1.3	6.07	20.7	548	26.50	.1	11.62	39.6	928	8.30
35 to 59 Years	1.6	8.11	27.7	718	25.94	.2	15.17	51.8	1,226	7.27
60 Years and Over	1.4	5.68	19.4	508	26.20	Q	12.45	42.5	964	17.57

See footnotes at end of table.

Northeast

New England

Electricity

Table 13. Electricity Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.882	0.688	0.688	0.639	0.273	3.232	1.627	1.627	1.602	
Household Size										
1 Person	1.1	4.34	14.8	403	27.24	0.2	9.02	30.8	757	10.49
2 to 4 Persons	2.8	7.27	24.8	644	25.97	.2	15.27	52.1	1,197	8.31
5 or More Persons .....	.4	9.09	31.0	803	25.90	Q	Q	Q	Q	15.49
Secondary Heating										
Yes	1.6	8.46	28.8	739	25.61	.1	25.40	86.7	1,943	11.23
No	2.7	5.69	19.4	517	26.65	.3	9.74	33.2	798	6.32
Hot Water Fuel										
Natural Gas	1.4	4.90	16.7	477	28.50	Q	Q	Q	Q	7.45
Electricity	1.2	9.90	33.8	828	24.52	.4	13.40	45.7	1,064	9.27
Fuel Oil or Kerosene	1.4	5.97	20.4	546	26.80	NC	NC	NC	NC	10.58
Other .....	.2	5.23	17.8	442	24.76	Q	Q	Q	Q	24.18
All-Electric Home										
Yes .....	.4	13.40	45.7	1,064	23.25	.4	13.40	45.7	1,064	11.02
No	3.9	6.05	20.6	554	26.81	Q	Q	Q	Q	5.52
Air Conditioning										
Yes	1.8	7.66	26.1	675	25.81	.2	13.94	47.6	1,110	10.08
Central Unit .....	.2	11.51	39.3	978	24.91	Q	Q	Q	Q	36.52
Electric .....	.2	11.51	39.3	978	24.91	Q	Q	Q	Q	36.52
Individual Room Units ¹	1.6	7.07	24.1	628	26.04	.2	11.43	39.0	915	8.56
One Unit	1.0	6.72	22.9	596	25.98	.2	10.70	36.5	867	9.36
Two or More Units .....	.6	7.67	26.2	684	26.11	Q	Q	Q	Q	12.20
No	2.4	6.01	20.5	543	26.50	.2	12.38	42.2	983	9.77
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	1.2	6.62	22.6	574	25.42	Q	9.82	33.5	821	17.26
5,500 to 7,000 HDD	2.9	6.80	23.2	609	26.28	.3	14.37	49.0	1,131	9.34
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 13. Electricity Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors	0.892	0.688	0.688	0.639	0.273	3.232	1.627	1.627	1.602	
Middle Atlantic Division	14.8	6.87	23.4	661	28.24	1.7	14.84	50.7	1,186	4.82
Metropolitan Status										
Metropolitan	13.4	6.70	22.9	667	29.15	1.6	14.66	50.0	1,177	4.94
Central City	5.3	4.47	15.3	522	34.22	Q	10.98	37.5	Q	13.03
Outside Central City	8.0	8.18	27.9	762	27.32	1.3	15.55	53.1	1,239	4.94
Nonmetropolitan	1.4	8.41	28.7	611	21.29	Q	Q	Q	Q	12.34
Electricity Paid by Household										
Yes	13.1	7.17	24.5	692	28.29	1.3	15.95	54.4	1,262	4.77
No	1.7	4.46	15.2	421	27.62	Q	10.43	35.6	880	27.22
Housing Structure										
Mobile Home .....	.5	6.75	23.0	530	23.03	NC	NC	NC	NC	28.26
Single Family	8.8	8.62	29.4	802	27.28	1.0	18.94	64.6	1,478	4.39
Building of 2 or More Units	5.5	4.08	13.9	448	32.20	Q	8.88	30.3	759	15.00
Number of Rooms										
1 to 3	2.7	3.58	12.2	376	30.81	Q	8.22	28.0	686	21.26
4 to 5	4.9	5.49	18.7	541	28.89	.4	14.37	49.0	1,162	7.27
6 or More	7.2	9.03	30.8	850	27.59	.7	20.70	70.6	1,620	4.34
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	5.1	3.97	13.5	413	30.51	Q	7.72	26.3	680	12.51
1,000 to 1,999	5.2	7.11	24.3	692	28.49	.7	16.06	54.8	1,256	7.00
2,000 or More	4.5	9.86	33.6	908	26.99	.5	21.39	73.0	1,673	6.42
Year of Construction										
1949 or Before	7.2	5.61	19.2	566	29.55	Q	11.46	39.1	929	11.14
1950 to 1974	5.6	6.62	22.6	669	29.62	.3	18.62	63.5	1,549	11.27
1975 or After	2.0	11.94	40.7	976	23.96	1.1	14.94	51.0	1,172	7.88
Status of Unit										
Owned	9.4	8.37	28.6	784	27.47	1.0	18.73	63.9	1,459	4.24
Rented	5.4	4.23	14.4	446	30.91	.7	9.32	31.8	796	12.33
1987 Family Income										
Less than \$10,000	2.6	4.16	14.2	398	28.00	Q	Q	Q	Q	13.49
\$10,000 to \$19,999	3.2	5.54	18.9	542	28.67	.3	9.58	32.7	826	10.71
\$20,000 to \$34,999	4.1	6.61	22.6	627	27.81	.4	14.78	50.4	1,136	8.90
\$35,000 or More	4.8	9.44	32.2	914	28.38	.8	18.14	61.9	1,449	5.46
Below 100 Percent of Poverty Line	1.5	4.63	15.8	441	27.87	Q	Q	Q	Q	20.95
Below 125 Percent of Poverty Line	2.5	4.97	16.9	472	27.86	Q	Q	Q	Q	15.82
Assistance for Heating in Winter										
Yes .....	.7	4.34	14.8	448	30.27	Q	Q	Q	Q	15.93
No	14.1	6.99	23.8	672	28.18	1.7	15.09	51.5	1,203	4.82
Age of Householder										
Under 35 Years	4.1	6.47	22.1	621	28.15	.7	13.91	47.5	1,160	7.43
35 to 59 Years	6.0	8.26	28.2	789	27.99	.6	15.75	53.8	1,231	6.72
60 Years and Over	4.7	5.43	18.5	534	28.81	.4	15.21	51.9	1,162	12.37

See footnotes at end of table.

Table 13. Electricity Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.882	0.688	0.688	0.639	0.273	3.232	1.627	1.627	1.602	
Household Size										
1 Person	3.9	3.98	13.6	392	28.83	0.6	9.30	31.7	776	13.36
2 to 4 Persons	9.2	7.63	26.0	727	27.93	1.1	17.18	58.6	1,348	4.23
5 or More Persons	1.6	9.52	32.5	943	29.04	Q	Q	Q	Q	12.54
Secondary Heating										
Yes	4.5	9.71	33.1	871	26.30	.5	19.17	65.4	1,473	6.51
No	10.3	5.62	19.2	570	29.71	1.2	12.91	44.0	1,057	6.67
Hot Water Fuel										
Natural Gas	7.6	5.53	18.9	576	30.54	Q	Q	Q	Q	7.94
Electricity	3.3	12.47	42.6	1,005	23.62	1.7	15.09	51.5	1,203	9.01
Fuel Oil or Kerosene	3.7	4.62	15.8	533	33.83	NC	NC	NC	NC	13.40
Other .....	.2	6.73	23.0	608	26.49	NC	NC	NC	NC	26.56
All-Electric Home										
Yes	1.6	14.82	50.6	1,189	23.52	1.6	14.82	50.6	1,189	10.21
No	13.2	5.93	20.2	599	29.63	Q	Q	Q	Q	4.33
Air Conditioning										
Yes	8.5	7.89	26.9	764	28.38	1.4	14.47	49.4	1,163	6.35
Central Unit	2.7	11.41	38.9	1,020	26.19	.9	15.96	54.5	1,280	6.76
Electric	2.7	11.57	39.5	1,032	26.15	.9	15.96	54.5	1,280	6.84
Individual Room Units ¹	5.8	6.23	21.3	644	30.27	Q	11.79	40.2	951	11.04
One Unit	3.2	5.48	18.7	552	29.52	.3	11.03	37.6	921	13.20
Two or More Units	2.6	7.17	24.5	758	31.00	Q	Q	Q	Q	8.62
No	6.2	5.46	18.6	521	27.95	.3	16.76	57.2	1,304	8.66
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	Q	9.51	32.4	729	22.49	Q	Q	Q	Q	72.37
5,500 to 7,000 HDD	5.7	7.57	25.8	683	26.43	.4	19.21	65.5	1,577	12.08
4,000 to 5,499 HDD	8.3	6.13	20.9	640	30.60	1.1	12.49	42.6	1,002	7.87
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

^{nc} No cases in sample.

^Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

¹ Homes having both a central air conditioner and one or more window or wall units are not included here. They are included under "Central Unit".

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, E of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 14. Fuel Oil or Kerosene Consumption and Expenditures for Northeast Region Households, 1987

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	2.184	0.908	0.912	0.987	0.263	2.166	0.961	0.964	1.063	
Northeast Region	9.1	693	96.0	556	5.79	8.0	761	105.4	608	3.31
Metropolitan Status										
Metropolitan	7.9	708	98.1	568	5.78	7.0	772	107.0	617	3.45
Central City	3.0	630	87.4	473	5.41	2.8	675	93.6	502	7.14
Outside Central City	4.8	757	104.8	626	5.98	4.3	835	115.7	691	4.84
Nonmetropolitan	1.2	599	82.8	484	5.84	1.0	681	94.2	550	11.18
Fuel Oil or Kerosene Paid by Household										
Yes	6.1	739	102.4	619	6.05	5.1	847	117.3	707	3.75
No	3.0	598	83.0	427	5.14	2.9	608	84.3	433	5.13
Housing Structure										
Mobile Home .....	.4	386	52.4	333	6.35	Q	396	53.9	341	12.04
Single Family	5.2	782	108.4	655	6.04	4.3	909	126.0	758	3.47
Building of 2 or More Units	3.5	597	82.8	495	5.25	3.3	615	85.2	448	5.30
Number of Rooms										
1 to 3	1.7	515	71.4	350	4.90	1.6	536	74.3	364	6.16
4 to 5	3.2	603	83.4	480	5.75	2.9	641	88.8	509	4.12
6 or More	4.3	831	115.1	694	6.03	3.5	959	133.0	799	4.03
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	3.4	537	74.3	392	5.28	3.2	555	76.8	405	5.59
1,000 to 1,999	2.9	668	92.5	555	6.00	2.3	794	110.1	657	4.16
2,000 or More	2.8	904	125.2	750	5.99	2.5	994	137.8	825	4.02
Year of Construction										
1949 or Before	4.7	722	100.1	580	5.80	4.3	764	105.9	612	5.23
1950 to 1974	3.4	685	94.9	542	5.71	3.0	773	107.1	610	5.05
1975 or After	1.0	586	81.1	490	6.05	.8	698	96.5	581	9.73
Status of Unit										
Owned	5.8	767	106.2	640	6.02	5.0	859	118.9	715	3.74
Rented	3.3	564	78.1	409	5.23	3.0	598	82.8	430	4.64
1987 Family Income										
Less than \$10,000	1.6	625	86.5	474	5.48	1.5	650	89.9	490	6.90
\$10,000 to \$19,999	1.9	653	90.5	526	5.81	1.7	719	99.6	577	7.06
\$20,000 to \$34,999	2.7	611	84.7	486	5.74	2.4	665	92.1	526	5.92
\$35,000 or More	2.9	833	115.5	687	5.95	2.5	951	131.8	783	4.70
Below 100 Percent of Poverty Line .....	.8	623	86.3	455	5.27	.7	665	92.1	476	7.34
Below 125 Percent of Poverty Line	1.5	618	85.6	467	5.46	1.3	651	90.2	488	6.14
Assistance for Heating in Winter										
Yes .....	.4	615	85.0	476	5.60	.4	654	90.5	503	8.02
No	8.7	697	96.6	560	5.80	7.6	766	106.2	614	3.32
Age of Householder										
Under 35 Years	2.4	576	79.8	452	5.66	2.0	650	90.0	505	5.04
35 to 59 Years	3.7	734	101.7	599	5.89	3.1	834	115.7	679	3.31
60 Years and Over	3.0	735	101.8	585	5.75	2.9	758	105.0	604	7.13

See footnotes at end of table.

Table 14. Fuel Oil or Kerosene Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Household Size										
1 Person	2.3	607	84.1	469	5.58	2.1	644	89.2	495	8.56
2 to 4 Persons	5.8	716	99.2	579	5.83	5.1	789	109.4	636	3.49
5 or More Persons	1.0	758	105.0	624	5.94	.8	883	122.4	725	7.96
Secondary Heating										
Yes	3.4	668	92.5	547	5.92	2.4	883	122.4	719	5.31
No	5.7	709	98.2	562	5.72	5.7	709	98.3	562	4.79
Hot Water Fuel										
Natural Gas	1.6	514	71.2	439	6.17	1.2	675	93.5	573	7.01
Electricity	2.1	540	74.6	446	5.98	1.6	634	87.7	520	6.31
Fuel Oil or Kerosene	5.1	828	114.8	650	5.66	5.0	836	115.9	656	4.01
Other .....	.2	410	56.7	337	5.94	.2	437	60.4	362	15.93
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	1.4	631	87.3	507	5.81	1.2	716	99.1	575	6.42
5,500 to 7,000 HDD	3.3	780	108.0	646	5.98	3.0	835	115.6	691	6.66
4,000 to 5,499 HDD	4.4	648	89.8	504	5.61	3.8	716	99.3	553	5.77
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 14. Fuel Oil or Kerosene Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	2.164	0.908	0.912	0.987	0.263	2.166	0.961	0.964	1.063	
New England Division	2.6	736	102.1	604	5.91	2.4	773	107.1	634	3.76
Metropolitan Status										
Metropolitan	1.9	779	108.1	642	5.94	1.8	812	112.6	669	3.60
Central City .....	.6	662	91.7	538	5.86	.5	687	95.2	558	5.52
Outside Central City	1.3	830	115.1	686	5.96	1.2	865	119.9	717	4.40
Nonmetropolitan .....	.7	619	85.7	500	5.83	.6	663	91.7	534	7.51
Fuel Oil or Kerosene Paid by Household										
Yes	2.1	771	106.8	636	5.95	1.9	811	112.4	669	4.04
No .....	.5	596	82.7	473	5.71	.5	618	85.8	493	10.57
Housing Structure										
Mobile Home .....	.2	357	48.5	323	6.66	.1	385	52.3	346	6.47
Single Family	1.6	828	114.8	679	5.91	1.5	875	121.3	717	4.06
Building of 2 or More Units .....	.8	617	85.5	499	5.84	.7	636	88.2	517	8.38
Number of Rooms										
1 to 3 .....	.3	430	59.6	331	5.55	.3	427	59.2	332	7.54
4 to 5	1.0	665	92.0	546	5.93	1.0	688	95.3	566	4.47
6 or More	1.3	858	119.0	707	5.94	1.2	920	127.5	758	3.62
Measured Heated Area of Residence (square feet)										
Fewer than 1,000 .....	.7	505	69.8	408	5.84	.7	519	71.8	421	6.85
1,000 to 1,999 .....	.9	730	101.2	601	5.94	.8	772	107.1	636	4.23
2,000 or More	1.0	908	126.0	746	5.92	.9	961	133.2	790	4.13
Year of Construction										
1949 or Before	1.3	742	102.9	606	5.89	1.2	769	106.6	627	4.66
1950 to 1974 .....	.9	751	104.0	617	5.93	.8	811	112.3	668	7.04
1975 or After .....	.4	678	93.9	562	5.98	.3	696	96.4	576	12.38
Status of Unit										
Owned	1.9	811	112.4	668	5.94	1.7	853	118.2	702	4.00
Rented .....	.7	541	75.0	436	5.81	.7	561	77.7	454	5.75
1987 Family Income										
Less than \$10,000 .....	.4	681	94.3	550	5.83	.4	681	94.3	550	6.44
\$10,000 to \$19,999 .....	.5	620	86.0	514	5.97	.5	656	90.9	543	4.34
\$20,000 to \$34,999 .....	.7	697	96.5	568	5.89	.7	733	101.5	599	7.19
\$35,000 or More .....	.9	856	118.7	705	5.94	.8	913	126.6	753	5.08
Below 100 Percent of Poverty Line .....	.2	609	84.2	491	5.83	.2	615	84.9	495	10.27
Below 125 Percent of Poverty Line .....	.4	671	92.9	539	5.81	.4	675	93.4	542	7.82
Assistance for Heating in Winter										
Yes .....	.2	652	89.9	527	5.86	.2	652	89.9	527	11.26
No	2.4	742	102.9	609	5.92	2.2	782	108.4	642	3.77
Age of Householder										
Under 35 Years .....	.7	600	83.1	494	5.94	.6	660	91.4	545	5.32
35 to 59 Years	1.0	769	106.6	628	5.89	.9	807	111.8	660	5.17
60 Years and Over .....	.9	809	112.1	664	5.92	.9	818	113.4	672	6.92

See footnotes at end of table.

Table 14. Fuel Oil or Kerosene Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	2.184	0.908	0.912	0.987	0.263	2.166	0.961	0.964	1.063	
Household Size										
1 Person	0.6	672	93.1	557	5.98	0.6	688	95.3	572	6.95
2 to 4 Persons	1.8	768	106.5	630	5.91	1.6	812	112.6	666	5.56
5 or More Persons .....	.2	662	91.7	530	5.78	.2	706	97.8	565	17.83
Secondary Heating										
Yes	1.1	749	103.9	605	5.83	1.0	844	117.0	683	3.89
No	1.4	726	100.6	602	5.99	1.4	726	100.6	602	4.73
Hot Water Fuel										
Natural Gas .....	.3	631	87.5	523	5.98	.3	680	94.3	571	12.49
Electricity .....	.7	536	74.1	441	5.95	.6	582	80.5	478	7.80
Fuel Oil or Kerosene	1.4	885	122.7	723	5.89	1.4	904	125.4	739	4.04
Other .....	.1	418	57.9	348	6.00	.1	436	60.4	362	16.67
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	1.0	612	84.7	488	5.77	.9	652	90.2	519	5.76
5,500 to 7,000 HDD	1.5	812	112.7	675	5.99	1.4	845	117.2	703	3.38
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 14. Fuel Oil or Kerosene Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	2.164	0.908	0.912	0.987	0.263	2.166	0.961	0.984	1.068	
Middle Atlantic Division	6.5	676	93.6	537	5.74	5.6	756	104.7	597	4.37
Metropolitan Status										
Metropolitan	6.0	686	95.0	544	5.73	5.3	759	105.1	599	4.43
Central City	2.4	623	86.3	458	5.30	2.2	672	93.2	488	8.72
Outside Central City	3.5	729	101.0	604	5.98	3.0	823	113.9	680	6.41
Nonmetropolitan	Q	573	79.4	464	5.85	.4	710	98.3	576	25.30
Fuel Oil or Kerosene Paid by Household										
Yes	4.1	723	100.1	610	6.10	3.2	869	120.3	730	5.41
No	2.5	599	83.0	417	5.02	2.4	605	84.0	422	5.15
Housing Structure										
Mobile Home	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Single Family	3.6	761	105.4	644	6.10	2.8	927	128.5	780	4.88
Building of 2 or More Units	2.7	591	82.0	416	5.08	2.6	609	84.4	428	5.84
Number of Rooms										
1 to 3	1.4	532	73.8	354	4.80	1.3	557	77.3	370	7.20
4 to 5	2.2	574	79.4	449	5.65	2.0	619	85.6	482	5.79
6 or More	3.0	819	113.4	688	6.07	2.4	979	135.7	819	5.46
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	2.6	546	75.5	388	5.14	2.5	564	78.1	401	6.75
1,000 to 1,999	2.0	641	88.7	535	6.03	1.5	806	111.7	668	5.81
2,000 or More	1.9	901	124.9	752	6.03	1.6	1,014	140.5	844	5.60
Year of Construction										
1949 or Before	3.4	715	99.0	571	5.77	3.1	762	105.6	607	6.91
1950 to 1974	2.5	660	91.5	514	5.62	2.1	758	105.0	587	6.33
1975 or After .....	.7	536	74.1	452	6.10	.4	699	96.5	585	14.73
Status of Unit										
Owned	3.9	746	103.2	626	6.07	3.3	862	119.3	722	5.27
Rented	2.6	570	79.0	401	5.08	2.4	608	84.3	424	5.73
1987 Family Income										
Less than \$10,000	1.2	605	83.8	447	5.34	1.1	637	88.2	466	9.30
\$10,000 to \$19,999	1.4	665	92.1	530	5.76	1.2	742	102.7	590	9.20
\$20,000 to \$34,999	2.0	580	80.2	455	5.67	1.7	639	88.5	497	7.87
\$35,000 or More	2.0	823	114.0	678	5.95	1.6	971	134.6	799	6.06
Below 100 Percent of Poverty Line .....	.6	628	87.0	443	5.09	.5	683	94.7	470	8.95
Below 125 Percent of Poverty Line	1.0	598	82.7	440	5.31	.9	641	88.8	464	8.39
Assistance for Heating in Winter										
Yes .....	.3	594	82.2	447	5.44	.2	655	90.8	487	11.01
No	6.2	680	94.2	541	5.75	5.4	760	105.3	602	4.38
Age of Householder										
Under 35 Years	1.7	566	78.4	434	5.54	1.4	646	89.4	487	7.05
35 to 59 Years	2.7	722	100.0	588	5.89	2.2	846	117.2	687	4.07
60 Years and Over	2.1	704	97.5	553	5.67	2.0	732	101.4	575	9.57

See footnotes at end of table.

Table 14. Fuel Oil or Kerosene Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	2.184	0.908	0.912	0.987	0.263	2.166	0.961	0.964	1.063	
Household Size										
1 Person	1.7	585	81.0	440	5.43	1.6	628	87.0	468	10.88
2 to 4 Persons	4.0	694	96.1	557	5.80	3.5	779	107.9	623	4.41
5 or More Persons .....	.8	789	109.3	654	5.98	.6	946	131.2	782	8.63
Secondary Heating										
Yes	2.3	627	86.7	518	5.97	1.4	910	126.1	743	7.71
No	4.2	703	97.4	548	5.63	4.2	704	97.5	549	6.31
Hot Water Fuel										
Natural Gas	1.3	484	67.0	418	6.24	.9	673	93.2	574	8.56
Electricity	1.4	542	74.8	448	5.99	1.0	664	91.8	544	8.52
Fuel Oil or Kerosene	3.7	806	111.7	621	5.56	3.6	810	112.3	624	5.33
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
5,500 to 7,000 HDD	1.8	752	104.0	621	5.97	1.6	825	114.1	681	12.12
4,000 to 5,499 HDD	4.3	645	89.4	501	5.61	3.8	714	99.1	551	5.86
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 15. Liquefied Petroleum Gas Consumption and Expenditures for Northeast Region Households, 1987

Household Characteristics	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	RSE Row Factors
RSE Column Factors	1.385	1.274	1.274	1.101	0.404	
Northeast Region	1.1	180	16.5	218	13.24	10.84
Metropolitan Status						
Metropolitan .....	.7	166	15.1	204	13.50	19.02
Central City	Q	Q	Q	Q	Q	a
Outside Central City .....	.6	158	14.4	200	13.87	18.60
Nonmetropolitan .....	.4	202	18.5	239	12.91	13.19
LPG Paid by Household						
Yes	1.0	177	16.2	220	13.58	10.61
No	Q	Q	Q	Q	Q	a
Housing Structure						
Mobile Home .....	.3	155	14.1	164	11.59	20.38
Single Family .....	.7	183	16.8	237	14.17	11.57
Building of 2 or More Units	Q	Q	Q	Q	Q	a
Number of Rooms						
1 to 3	Q	Q	Q	Q	Q	a
4 to 5 .....	.6	126	11.5	167	14.51	16.86
6 or More .....	.5	209	19.0	261	13.70	14.10
Measured Heated Area of Residence (square feet)						
Fewer than 1,000 .....	.5	195	17.8	215	12.08	14.15
1,000 to 1,999 .....	.3	156	14.2	202	14.22	21.95
2,000 or More .....	.3	184	16.8	243	14.49	19.53
Year of Construction						
1949 or Before .....	.5	206	18.8	269	14.31	11.07
1950 to 1974 .....	.3	182	16.6	206	12.39	20.40
1975 or After .....	.3	138	12.6	149	11.82	29.61
Status of Unit						
Owned	1.0	172	15.7	213	13.51	19.53
Rented .....	.1	240	21.9	258	11.78	33.75
1987 Family Income						
Less than \$10,000 .....	.2	Q	Q	159	12.97	34.87
\$10,000 to \$19,999 .....	.3	206	18.8	240	12.75	18.93
\$20,000 to \$34,999 .....	.4	215	19.6	255	13.00	13.20
\$35,000 or More .....	.2	144	13.2	194	14.72	28.20
Below 100 Percent of Poverty Line	Q	287	26.2	300	11.45	32.59
Below 125 Percent of Poverty Line .....	.2	192	17.5	210	11.95	25.69
Assistance for Heating in Winter						
Yes	Q	Q	Q	Q	Q	a
No	1.0	181	16.6	220	13.31	10.85
Age of Householder						
Under 35 Years .....	.4	94	8.6	125	14.43	21.26
35 to 59 Years .....	.4	223	20.4	249	12.23	19.03
60 Years and Over .....	.3	242	22.1	309	13.98	12.69
Household Size						
1 Person .....	.3	171	15.6	208	13.29	28.35
2 to 4 Persons .....	.7	170	15.5	210	13.50	10.38
5 or More Persons .....	.1	282	25.8	308	11.97	35.76
Secondary Heating						
Yes .....	.5	270	24.7	314	12.72	13.55
No .....	.6	115	10.5	148	14.11	11.20

See footnotes at end of table.

Table 15. Liquefied Petroleum Gas Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	RSE Row Factors
RSE Column Factors:	1.385	1.274	1.274	1.101	0.404	
Hot Water Fuel						
Natural Gas	NC	NC	NC	NC	NC	NC
Electricity	0.6	165	15.1	210	13.93	16.08
Fuel Oil or Kerosene .....	.3	63	5.7	101	17.59	9.91
Other .....	.3	326	29.7	347	11.66	17.77
Climate Zone						
Under 2,000 CDD and--						
Over 7,000 HDD .....	.5	187	17.1	211	12.33	11.72
5,500 to 7,000 HDD .....	.5	185	16.9	239	14.15	19.39
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	a
Under 4,000 HDD	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --						
Under 4,000 HDD	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 15. Liquefied Petroleum Gas Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	RSE Row Factors
RSE Column Factors	1.385	1.274	1.274	1.101	0.404	
New England Division	0.5	207	18.9	226	11.93	8.87
Metropolitan Status						
Metropolitan .....	.2	217	19.9	239	12.06	20.74
Central City	Q	Q	Q	Q	Q	a
Outside Central City .....	.2	203	18.5	233	12.57	14.86
Nonmetropolitan .....	.2	198	18.1	213	11.79	11.25
LPG Paid by Household						
Yes .....	.4	195	17.8	218	12.29	8.91
No	Q	Q	Q	Q	Q	a
Housing Structure						
Mobile Home .....	.2	255	23.3	246	10.58	12.11
Single Family .....	.3	164	15.0	205	13.74	13.60
Building of 2 or More Units	Q	Q	Q	Q	Q	a
Number of Rooms						
1 to 3	Q	Q	Q	Q	Q	a
4 to 5 .....	.2	183	16.7	224	13.36	18.05
6 or More .....	.2	138	12.6	169	13.42	17.85
Measured Heated Area of Residence (square feet)						
Fewer than 1,000 .....	.2	259	23.7	258	10.90	5.60
1,000 to 1,999 .....	.1	108	9.9	137	13.93	20.20
2,000 or More .....	.1	191	17.5	234	13.40	20.38
Year of Construction						
1949 or Before .....	.2	163	14.9	197	13.26	25.43
1950 to 1974 .....	.2	190	17.4	208	11.99	17.13
1975 or After	Q	Q	Q	Q	Q	a
Status of Unit						
Owned .....	.4	213	19.4	234	12.05	9.56
Rented .....	.1	Q	Q	193	11.35	32.14
1987 Family Income						
Less than \$10,000 .....	.1	152	13.9	172	12.38	29.80
\$10,000 to \$19,999 .....	.1	246	22.5	230	10.21	12.04
\$20,000 to \$34,999 .....	.2	248	22.6	278	12.28	10.11
\$35,000 or More .....	.1	135	12.3	164	13.33	24.03
Below 100 Percent of Poverty Line	Q	Q	Q	Q	Q	a
Below 125 Percent of Poverty Line .....	.1	193	17.6	201	11.38	24.21
Assistance for Heating in Winter						
Yes	Q	Q	Q	Q	Q	a
No .....	.4	214	19.5	233	11.94	7.59
Age of Householder						
Under 35 Years .....	.2	148	13.5	185	13.68	22.18
35 to 59 Years .....	.2	268	24.5	263	10.72	12.27
60 Years and Over .....	.1	187	17.1	222	12.97	28.15
Household Size						
1 Person .....	.1	187	17.1	200	11.67	38.34
2 to 4 Persons .....	.3	207	18.9	228	12.07	11.61
5 or More Persons	Q	Q	Q	Q	Q	a
Secondary Heating						
Yes .....	.2	267	24.4	286	11.73	9.66
No .....	.3	160	14.6	178	12.19	11.14

See footnotes at end of table.

Table 15. Liquefied Petroleum Gas Consumption and Expenditures for Northeast Region Households, 1987 (Continued)

Household Characteristics	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	RSE Row Factors
RSE Column Factors:	1.385	1.274	1.274	1.101	0.404	
Hot Water Fuel						
Natural Gas	NC	NC	NC	NC	NC	NC
Electricity	0.2	126	11.5	162	14.03	26.84
Fuel Oil or Kerosene .....	.1	64	5.8	116	20.07	11.18
Other .....	.2	378	34.5	358	10.38	16.65
Climate Zone						
Under 2,000 CDD and--						
Over 7,000 HDD .....	.3	223	20.3	235	11.56	8.34
5,500 to 7,000 HDD .....	.2	177	16.1	207	12.85	16.61
4,000 to 5,499 HDD	NC	NC	NC	NC	NC	NC
Under 4,000 HDD	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --						
Under 4,000 HDD	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

NC No cases in sample.

^o Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • Data on LPG used as main heating fuel and data on LPG in the Middle Atlantic Division are not presented due to a scarcity of data. • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 16. Wood Consumption for Northeast Region Households for Year Ending November 1987

Household Characteristics	Households Burning Wood		Cords Burned		Cords Burned per Household	RSE Row Factors
	(million)	(percent)	(million)	(percent)		
RSE Column Factors	0.724	0.656	1.492	1.259	1.120	
Northeast Region	3.7	100.0	8.3	100.0	2.2	22.47
Census Division						
New England	1.2	32.2	2.1	25.5	1.8	11.98
Middle Atlantic	2.5	67.8	Q	74.5	Q	9.55
Metropolitan Status						
Metropolitan	2.8	74.3	4.0	Q	1.4	9.13
Central City .....	.4	11.3	.5	Q	1.2	38.79
Outside Central City	2.4	63.0	3.5	Q	1.5	14.16
Nonmetropolitan	1.0	25.7	Q	52.5	Q	20.29
Measured Heated Area of Residence (square feet)						
Fewer than 1,000 .....	.2	6.3	Q	12.7	4.5	30.17
1,000 to 1,999	1.1	30.3	Q	42.0	Q	21.83
2,000 or More	2.4	63.4	3.8	45.3	1.6	14.90
1987 Family Income						
Less than \$10,000 .....	.1	3.9	Q	Q	Q	64.58
\$10,000 to \$19,999 .....	.5	12.8	Q	25.3	Q	28.19
\$20,000 to \$34,999 .....	.9	25.4	2.2	26.3	2.3	18.86
\$35,000 or More	2.2	57.9	3.3	39.1	1.5	18.33
Assistance for Heating in Winter						
Yes	Q	Q	Q	Q	Q	a
No	3.7	99.2	7.9	94.3	2.1	12.57
Amount of Wood Burned						
Less than 2 Cords	2.6	69.6	1.3	Q	.5	9.64
2 to 4 Cords .....	.6	17.0	1.8	21.5	2.8	12.01
More than 4 Cords	Q	Q	Q	62.8	10.5	22.50
Wood is Main Heating Fuel						
Yes .....	.6	16.1	Q	58.1	8.1	42.23
No	3.1	83.9	3.5	41.9	1.1	14.37
Year of Construction						
1949 or Before	1.4	37.0	Q	49.4	3.0	19.57
1950 to 1974	1.5	39.4	2.2	26.0	1.5	17.76
1975 or After .....	.9	23.6	Q	24.6	Q	18.09
Climate Zone						
Under 2,000 CDD and--						
Over 7,000 HDD .....	.9	23.6	Q	60.4	5.7	46.80
5,500 to 7,000 HDD	2.2	58.1	2.6	Q	1.2	16.51
4,000 to 5,499 HDD .....	.7	18.3	Q	Q	1.1	33.09
Under 4,000 HDD	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --						
Under 4,000 HDD	NC	NC	NC	NC	NC	NC

a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Percentages are calculated on unrounded numbers. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 17. Energy Consumption and Expenditures for Midwest Region Households, 1987

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Flow Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.589	0.601	0.593	0.753	0.747	0.733	0.691	1.859	1.825	2.186	2.258	
Midwest Region	22.3	2.73	25.0	1.83	9.0	0.61	14.1	0.16	1.0	0.13	1.0	5.81
Metropolitan Status												
Metropolitan	15.8	2.00	18.0	1.44	7.1	.42	10.0	.10	.6	.04	.3	7.62
Central City	6.7	.85	7.3	.66	3.3	.16	3.8	.03	.2	.04	.3	9.55
Outside Central City	9.1	1.15	10.7	.78	3.8	.26	6.2	.07	.4	.04	.3	7.95
Nonmetropolitan	6.4	.73	7.0	.39	1.9	.19	4.1	.06	.4	.09	.7	7.26
Payment Method for Utilities												
All Paid by Household	18.2	2.35	22.0	1.52	7.5	.56	12.7	.15	.9	.13	1.0	7.18
Some or None Paid by Household, Other Method	4.0	.38	3.0	.31	1.5	.05	1.4	Q	Q	Q	Q	22.67
Housing Structure												
Mobile Home	1.2	.11	1.2	.05	.2	.03	.8	Q	Q	.02	.2	37.00
Single Family	15.6	2.10	19.6	1.35	6.7	.50	11.2	.15	.9	.11	.8	7.47
Building of 2 or More Units	5.4	.51	4.2	.43	2.1	.08	2.1	Q	Q	Q	Q	16.84
Number of Rooms												
1 to 3	2.5	.19	1.7	.13	.6	.04	.9	.01	*	Q	Q	17.08
4 to 5	9.5	1.03	9.4	.69	3.5	.22	5.1	.06	.4	.06	.5	8.92
6 or More	10.3	1.52	14.0	1.00	4.9	.36	8.1	.10	.6	.06	.4	8.18
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	6.9	.63	5.7	.44	2.2	.13	3.1	.02	.1	.03	.3	9.98
1,000 to 1,999	7.8	.96	8.8	.63	3.1	.21	4.9	.06	.4	.06	.4	9.93
2,000 or More	7.5	1.14	10.5	.75	3.7	.27	6.1	.08	.5	.04	.3	8.57
Year of Construction												
1949 or Before	9.2	1.25	10.6	.89	4.4	.22	5.3	.09	.5	.05	.3	9.39
1950 to 1974	9.0	1.07	10.0	.71	3.5	.25	5.8	.06	.3	.05	.4	10.83
1975 or After	4.1	.41	4.4	.22	1.1	.13	3.0	.01	.1	.03	.3	15.53
Status of Unit												
Owned	15.3	2.03	19.0	1.30	6.4	.48	11.0	.13	.8	.11	.9	6.73
Rented	6.9	.70	6.0	.53	2.6	.13	3.1	.03	.2	.02	.1	10.26
1987 Family Income												
Less than \$10,000	4.3	.50	4.2	.36	1.8	.08	2.0	.03	.2	.03	.2	16.18
\$10,000 to \$19,999	5.9	.66	5.9	.44	2.2	.14	3.2	.04	.2	.04	.3	10.42
\$20,000 to \$34,999	6.4	.74	7.0	.47	2.3	.18	4.1	.05	.3	.04	.3	10.17
\$35,000 or More	5.7	.83	7.9	.56	2.7	.21	4.8	.04	.2	.02	.2	10.74
Below 100 Percent of Poverty Line	2.5	.31	2.6	.23	1.1	.05	1.3	Q	Q	.02	.1	16.86
Below 125 Percent of Poverty Line	4.4	.52	4.6	.37	1.8	.10	2.3	.03	.2	.03	.2	16.71
Assistance for Heating in Winter												
Yes	1.4	.18	1.5	.13	.6	.03	.7	.01	*	.02	.1	22.55
No	20.9	2.55	23.5	1.70	8.4	.58	13.3	.15	.9	.12	.9	5.47
Age of Householder												
Under 35 Years	6.9	.81	7.3	.55	2.8	.17	4.0	.05	.3	.04	.3	12.44
35 to 59 Years	8.4	1.12	10.6	.73	3.5	.28	6.3	.06	.4	.05	.4	8.26
60 Years and Over	6.9	.80	7.1	.55	2.7	.16	3.8	.05	.3	.04	.3	10.38

See footnotes at end of table.

Table 17. Energy Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors	0.589	0.601	0.593	0.753	0.747	0.733	0.691	1.859	1.825	2.186	2.258	
Household Size												
1 Person	5.4	0.56	4.5	0.43	2.1	0.09	2.2	0.02	0.1	0.02	0.2	12.77
2 to 4 Persons	14.5	1.83	17.1	1.18	5.8	.43	9.8	.13	.8	.09	.7	7.64
5 or More Persons	2.4	.34	3.4	.21	1.1	.09	2.1	.02	.1	.02	.1	16.81
Secondary Heating												
Yes	8.6	1.11	10.8	.65	3.2	.29	6.4	.09	.6	.08	.6	8.76
No	13.7	1.62	14.2	1.18	5.8	.32	7.6	.07	.4	.05	.4	7.61
Hot Water Fuel												
Natural Gas	15.2	2.02	16.8	1.66	8.2	.33	8.5	.02	.1	Q	Q	8.44
Electricity	5.8	.58	6.9	.16	.8	.24	4.9	.13	.8	.05	.4	13.45
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	NC	NC	a
Other	1.2	.12	1.4	Q	Q	.03	.7	.01	*	.08	.6	24.62
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	5.6	.62	5.8	.33	1.7	.15	3.1	.09	.5	.06	Q	20.76
5,500 to 7,000 HDD	13.5	1.75	15.5	1.30	6.3	.35	8.5	.07	.4	.04	.3	12.83
4,000 to 5,499 HDD	3.1	.35	3.7	.20	1.0	.11	2.5	Q	Q	.03	.2	24.11
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --												
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 17. Energy Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.589	0.601	0.593	0.753	0.747	0.733	0.691	1.859	1.825	2.186	2.258	
East North Central Division	15.9	1.99	18.2	1.35	6.8	0.42	10.0	0.13	0.8	0.08	0.7	6.99
Metropolitan Status												
Metropolitan	12.3	1.58	14.1	1.15	5.7	.31	7.6	.09	.6	.03	.3	7.97
Central City	4.9	.65	5.5	.51	2.5	.11	2.8	.03	.2	.03	.1	12.41
Outside Central City	7.3	.93	8.6	.64	3.2	.20	4.9	.06	.4	.03	.3	8.12
Nonmetropolitan	3.6	.41	4.1	.20	1.1	.11	2.3	.04	.3	.03	.3	8.56
Payment Method for Utilities												
All Paid by Household	12.7	1.69	15.8	1.10	5.5	.38	8.9	.13	.8	.08	.7	9.38
Some or None Paid by Household, Other Method	3.1	.30	2.4	.25	1.2	.04	1.1	Q	Q	Q	Q	29.07
Housing Structure												
Mobile Home .....	.9	.08	.9	Q	Q	.03	.6	Q	Q	.02	.1	43.08
Single Family	10.8	1.50	14.0	.97	4.9	.34	7.8	.13	.8	.07	.5	9.82
Building of 2 or More Units	4.2	.40	3.3	.35	1.7	.05	1.6	Q	Q	Q	Q	20.58
Number of Rooms												
1 to 3	1.8	.13	1.2	.10	.5	.02	.6	Q	Q	Q	Q	19.13
4 to 5	6.7	.73	6.7	.50	2.6	.15	3.5	.05	.3	.04	Q	11.64
6 or More	7.3	1.12	10.3	.75	3.7	.25	5.8	.09	.5	.03	.3	9.25
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	5.3	.48	4.4	.35	1.7	.10	2.4	.02	.1	.02	.2	12.97
1,000 to 1,999	5.3	.67	6.2	.44	2.3	.14	3.3	.05	.3	.04	Q	12.53
2,000 or More	5.3	.83	7.6	.56	2.8	.18	4.3	.07	.4	.03	.2	9.77
Year of Construction												
1949 or Before	6.6	.92	7.8	.66	3.3	.16	3.8	.07	.4	.03	.2	11.19
1950 to 1974	6.3	.77	7.2	.51	2.6	.17	4.0	.05	.3	.03	.3	14.37
1975 or After	2.9	.30	3.2	.17	.9	.09	2.1	.01	.1	.02	.2	17.47
Status of Unit												
Owned	10.7	1.46	13.7	.95	4.8	.33	7.7	.11	.6	.08	.6	8.78
Rented	5.1	.52	4.5	.40	2.0	.09	2.3	.03	.2	.01	.1	12.65
1987 Family Income												
Less than \$10,000	3.0	.36	3.0	.26	1.3	.06	1.4	Q	Q	.02	.1	19.13
\$10,000 to \$19,999	4.4	.50	4.5	.34	1.7	.10	2.3	.04	.2	Q	Q	11.07
\$20,000 to \$34,999	4.4	.52	5.0	.33	1.7	.12	2.8	.04	.3	.03	.2	13.20
\$35,000 or More	4.1	.61	5.7	.42	2.0	.14	3.4	.03	.2	.02	.1	13.22
Below 100 Percent of Poverty Line	1.7	.23	1.9	.17	.8	.04	.9	Q	Q	.01	.1	22.23
Below 125 Percent of Poverty Line	3.2	.39	3.4	.28	1.4	.07	1.7	Q	Q	.02	.2	19.83
Assistance for Heating in Winter												
Yes	1.0	.14	1.2	.10	.5	.02	.6	.01	*	Q	Q	29.74
No	14.9	1.85	17.0	1.25	6.3	.39	9.4	.13	.8	.07	.6	7.22
Age of Householder												
Under 35 Years	4.9	.59	5.3	.41	2.1	.12	2.8	.04	.3	.02	.2	16.45
35 to 59 Years	5.9	.81	7.8	.54	2.6	.19	4.4	.05	.3	.03	.2	10.25
60 Years and Over	5.0	.59	5.3	.40	2.0	.11	2.7	.04	.2	.03	.3	13.53

See footnotes at end of table.

Table 17. Energy Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors	0.589	0.601	0.593	0.753	0.747	0.733	0.681	1.859	1.825	2.186	2.258	
Household Size												
1 Person	3.6	0.39	3.1	0.31	1.6	0.05	1.4	0.01	0.1	Q	Q	17.44
2 to 4 Persons	10.4	1.34	12.6	.87	4.4	.30	7.0	.11	.7	0.06	0.5	9.80
5 or More Persons	1.8	.26	2.6	.16	.8	.07	1.6	.01	.1	.01	.1	20.81
Secondary Heating												
Yes	6.0	.81	7.9	.47	2.4	.21	4.7	.08	.5	.05	.4	10.99
No	9.8	1.17	10.3	.88	4.4	.21	5.3	.05	.3	.03	.3	9.65
Hot Water Fuel												
Natural Gas	10.9	1.47	12.2	1.23	6.2	.22	6.0	.02	.1	Q	Q	10.17
Electricity	4.2	.44	5.1	.11	.6	.18	3.6	.11	.7	.03	.3	17.08
Fuel Oil or Kerosene	Q	Q	Q	NC	NC	Q	Q	Q	Q	NC	NC	a
Other .....	.7	.07	.9	Q	Q	.02	.4	Q	Q	.05	.4	39.88
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	3.4	.38	3.6	.16	1.0	.10	1.9	.07	.4	Q	Q	32.82
5,500 to 7,000 HDD	11.8	1.54	13.8	1.15	5.6	.30	7.6	.06	.4	.02	.2	14.46
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --												
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 17. Energy Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Flow Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.589	0.601	0.593	0.753	0.747	0.733	0.691	1.859	1.825	2.186	2.258	
West North Central Division	6.4	0.74	6.8	0.48	2.2	0.19	4.1	0.02	0.1	0.05	0.3	9.44
Metropolitan Status												
Metropolitan	3.5	.42	3.9	.29	1.4	.11	2.4	Q	Q	.01	*	10.86
Central City	1.8	.20	1.8	.16	.7	.05	1.1	Q	Q	Q	Q	21.80
Outside Central City	1.8	.21	2.0	.14	.7	.06	1.3	Q	Q	.01	*	16.40
Nonmetropolitan	2.9	.32	2.9	.18	.8	.08	1.7	.02	.1	.04	.3	14.41
Payment Method for Utilities												
All Paid by Household	5.5	.66	6.2	.42	2.0	.18	3.8	.02	.1	.05	.3	9.87
Some or None Paid by Household, Other Method .....	.9	.08	.6	.06	.3	.02	.3	Q	Q	Q	Q	23.31
Housing Structure												
Mobile Home .....	.3	.03	.3	.01	.1	.01	.2	Q	Q	Q	Q	51.29
Single Family	4.8	.60	5.6	.38	1.8	.16	3.5	.02	.1	.04	.2	9.62
Building of 2 or More Units	1.3	.11	.9	.08	.4	.02	.5	Q	Q	Q	Q	19.99
Number of Rooms												
1 to 3 .....	.7	.05	.5	.04	.2	.01	.3	Q	Q	Q	Q	28.72
4 to 5	2.8	.29	2.7	.19	.9	.07	1.5	.01	.1	.02	.1	14.16
6 or More	2.9	.39	3.7	.25	1.2	.11	2.3	.01	.1	.02	.2	14.66
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	1.6	.14	1.3	.10	.4	.03	.7	*	*	.01	.1	19.26
1,000 to 1,999	2.5	.29	2.6	.19	.9	.07	1.6	.01	.1	.02	.1	13.14
2,000 or More	2.2	.31	2.9	.19	.9	.09	1.8	.01	.1	.01	.1	15.24
Year of Construction												
1949 or Before	2.6	.33	2.7	.23	1.0	.07	1.5	.02	.1	.02	.1	14.66
1950 to 1974	2.6	.30	2.9	.19	.9	.08	1.8	Q	Q	.02	.1	13.39
1975 or After	1.2	.11	1.2	.05	.3	.04	.9	Q	Q	.01	.1	27.81
Status of Unit												
Owned	4.6	.57	5.3	.35	1.6	.15	3.3	.02	.1	.04	.3	10.56
Rented	1.8	.17	1.5	.12	.6	.04	.8	Q	Q	.01	*	16.46
1987 Family Income												
Less than \$10,000	1.4	.14	1.1	.10	.4	.03	.6	*	*	.01	.1	21.67
\$10,000 to \$19,999	1.5	.16	1.5	.11	.5	.04	.9	*	*	.01	.1	13.23
\$20,000 to \$34,999	1.9	.22	2.1	.13	.6	.06	1.3	Q	Q	.02	.1	12.63
\$35,000 or More	1.6	.22	2.1	.14	.7	.07	1.4	Q	Q	.01	*	15.34
Below 100 Percent of Poverty Line .....	.8	.08	.7	.06	.3	.02	.4	*	*	.01	.1	20.21
Below 125 Percent of Poverty Line	1.3	.13	1.1	.09	.4	.03	.6	*	*	.01	.1	21.00
Assistance for Heating in Winter												
Yes .....	.4	.04	.3	.03	.1	.01	.2	*	*	.01	*	23.50
No	6.0	.70	6.5	.45	2.1	.18	4.0	.02	.1	.04	.3	9.69
Age of Householder												
Under 35 Years	2.0	.22	2.0	.14	.7	.05	1.2	.01	*	.01	.1	13.89
35 to 59 Years	2.5	.31	3.0	.19	.9	.09	1.8	.01	.1	.02	.1	13.92
60 Years and Over	1.9	.21	1.9	.14	.7	.05	1.1	.01	*	.01	.1	13.86

See footnotes at end of table.

Table 17. Energy Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors	0.589	0.601	0.593	0.753	0.747	0.733	0.691	1.859	1.825	2.186	2.258	
Household Size												
1 Person	1.8	0.17	1.4	0.12	0.6	0.03	0.8	0.01	*	0.01	0.1	17.89
2 to 4 Persons	4.0	.49	4.5	.31	1.5	.13	2.8	.01	0.1	.03	.2	11.63
5 or More Persons .....	.6	.08	.8	.05	.2	.02	.5	Q	Q	*	*	20.84
Secondary Heating												
Yes	2.5	.30	2.8	.18	.8	.09	1.8	.01	.1	.03	.2	16.50
No	3.9	.44	4.0	.30	1.4	.11	2.4	.01	.1	.02	.1	10.58
Hot Water Fuel												
Natural Gas	4.3	.54	4.5	.43	2.0	.11	2.5	Q	Q	Q	Q	10.33
Electricity	1.6	.15	1.7	.05	.2	.07	1.3	.02	.1	.01	.1	17.09
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	NC	NC	a
Other .....	.5	.05	.5	Q	Q	.01	.3	Q	Q	.03	.2	24.74
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	2.2	.25	2.1	.16	.8	.06	1.2	.02	.1	.01	.1	16.47
5,500 to 7,000 HDD	1.7	.21	1.7	.15	.7	.04	.9	Q	Q	.02	.1	24.04
4,000 to 5,499 HDD	2.5	.28	3.0	.17	.8	.09	2.0	Q	Q	.02	.2	14.49
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --												
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

NC No cases in sample.

* Data cannot be displayed due to rounding.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 18. Total Consumption per Midwest Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987

Household Characteristics	Total Consumption in Households Where:										RSE Row Factors
	Total		Main Heating Fuel Is Natural Gas		Main Heating Fuel Is Electricity		Main Heating Fuel Is Fuel Oil or Kerosene		Main Heating Fuel Is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.699	0.307	0.889	0.340	3.145	1.336	2.493	0.998	2.565	0.575	
Midwest Region	22.3	122.5	16.5	132.1	1.5	70.1	1.5	122.6	1.3	115.2	6.10
Metropolitan Status											
Metropolitan	15.8	126.4	12.8	134.1	.9	64.5	1.0	122.8	.4	112.3	8.78
Central City	8.7	127.0	5.9	134.4	.4	52.5	.3	110.2	Q	Q	11.35
Outside Central City	9.1	125.9	7.0	133.9	.5	75.5	.7	128.7	.4	116.3	8.72
Nonmetropolitan	6.4	113.2	3.7	124.9	.5	79.4	.6	122.2	.9	116.5	7.78
Payment Method for Utilities											
All Paid by Household	18.2	129.0	12.7	143.2	1.3	73.1	1.5	122.7	1.3	114.8	5.93
Some or None Paid by Household, Other Method	4.0	93.3	3.8	95.0	Q	36.1	Q	Q	Q	Q	20.05
Housing Structure											
Mobile Home	1.2	92.9	.6	102.2	Q	Q	Q	Q	.3	88.0	20.89
Single Family	15.6	134.6	10.9	149.0	1.0	80.4	1.4	124.5	1.0	124.8	6.23
Building of 2 or More Units	5.4	94.4	5.0	98.6	.3	38.3	Q	Q	NC	NC	12.55
Number of Rooms											
1 to 3	2.5	73.5	2.0	77.2	.3	46.7	Q	Q	.2	84.1	13.05
4 to 5	9.5	108.5	7.1	115.8	.5	63.9	.6	106.2	.6	104.7	8.31
6 or More	10.3	147.6	7.5	161.8	.6	85.6	.8	136.0	.5	137.7	7.33
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	6.9	90.7	5.4	95.5	.5	53.9	.2	104.5	.4	89.6	8.95
1,000 to 1,999	7.8	122.8	5.5	135.6	.5	68.8	.6	106.5	.6	118.2	7.54
2,000 or More	7.5	151.6	5.6	164.3	.4	94.2	.7	144.0	.3	140.4	7.85
Year of Construction											
1949 or Before	9.2	136.0	7.1	145.7	.3	60.1	.8	130.1	.4	126.2	7.85
1950 to 1974	9.0	119.4	6.9	126.6	.5	76.8	.6	115.7	.6	112.0	9.58
1975 or After	4.1	99.2	2.6	109.5	.6	68.9	.2	111.7	.3	107.5	12.42
Status of Unit											
Owned	15.3	132.4	10.6	147.3	1.0	78.7	1.3	125.2	1.1	115.7	5.76
Rented	6.9	100.6	5.9	104.5	.5	53.3	.2	107.2	.2	111.7	12.48
1987 Family Income											
Less than \$10,000	4.3	115.3	3.4	123.7	.2	60.4	.2	101.8	.3	101.6	12.88
\$10,000 to \$19,999	5.9	112.7	4.3	121.6	.3	56.3	.4	123.9	.4	109.5	10.45
\$20,000 to \$34,999	6.4	116.1	4.4	126.0	.5	63.2	.6	123.0	.4	127.0	8.25
\$35,000 or More	5.7	145.5	4.5	154.2	.4	93.8	.3	137.0	.2	126.4	10.08
Below 100 Percent of Poverty Line	2.5	123.3	1.9	136.8	.2	60.1	Q	Q	.2	107.0	13.91
Below 125 Percent of Poverty Line	4.4	118.2	3.3	129.5	.3	65.5	.3	105.0	.3	106.9	11.71
Assistance for Heating in Winter											
Yes	1.4	133.2	1.0	147.3	Q	Q	Q	Q	.2	112.9	19.53
No	20.9	121.8	15.6	131.1	1.4	69.3	1.5	123.9	1.2	115.5	5.22

See footnotes at end of table.

Table 18. Total Consumption per Midwest Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.699	0.307	0.889	0.340	3.145	1.336	2.493	0.998	2.565	0.575	
Age of Householder											
Under 35 Years	6.9	116.1	5.4	124.2	0.5	57.1	0.4	128.2	0.3	114.0	9.75
35 to 59 Years	8.4	133.4	6.0	147.4	.7	84.3	.6	117.0	.5	123.7	7.37
60 Years and Over	6.9	115.8	5.2	122.6	.3	58.3	.5	125.2	.5	108.2	9.32
Household Size											
1 Person	5.4	103.3	4.6	108.3	.2	46.0	.2	86.4	.3	97.1	10.41
2 to 4 Persons	14.5	126.4	10.4	137.5	1.1	72.6	1.1	131.0	.9	121.9	6.83
5 or More Persons	2.4	143.1	1.6	165.3	Q	Q	.2	118.6	.2	110.8	13.18
Secondary Heating											
Yes	8.6	129.8	5.1	152.0	.7	84.4	.8	124.4	.7	113.8	8.20
No	13.7	118.0	11.5	123.2	.7	56.2	.7	120.3	.6	116.7	7.28
Hot Water Fuel											
Natural Gas	15.2	132.2	14.8	133.1	Q	Q	Q	Q	NC	NC	6.58
Electricity	5.8	100.7	1.7	123.2	1.4	69.3	1.3	122.9	.5	116.2	9.64
Fuel Oil or Kerosene	Q	Q	Q	Q	NC	NC	Q	Q	NC	NC	a
Other	1.2	103.9	NC	NC	NC	NC	Q	Q	.8	114.5	14.91
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	5.6	110.3	3.2	121.6	.3	68.2	.9	116.6	.6	110.6	12.21
5,500 to 7,000 HDD	13.5	129.8	11.2	136.2	.9	70.6	.6	134.6	.4	122.1	10.06
4,000 to 5,499 HDD	3.1	113.0	2.1	125.8	.3	70.3	Q	Q	.3	114.9	13.19
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --											
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 18. Total Consumption per Midwest Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.699	0.307	0.889	0.340	3.145	1.336	2.493	0.998	2.565	0.575	
East North Central Division	15.9	125.3	11.8	134.5	1.1	70.7	1.2	126.4	0.9	117.3	7.90
Metropolitan Status											
Metropolitan	12.3	128.5	9.9	136.6	.7	63.1	.9	123.8	.4	116.0	9.23
Central City	4.9	130.9	4.2	139.9	Q	53.1	.3	110.8	Q	Q	13.32
Outside Central City	7.3	126.9	5.6	134.2	.3	73.4	.6	130.8	.3	121.2	9.59
Nonmetropolitan	3.6	114.0	1.9	123.7	.4	83.4	.3	133.4	Q	118.3	9.00
Payment Method for Utilities											
All Paid by Household	12.7	132.5	8.8	147.0	1.0	74.2	1.2	126.9	.8	116.6	7.93
Some or None Paid by Household, Other Method	3.1	95.9	3.0	97.5	Q	Q	Q	Q	Q	Q	25.05
Housing Structure											
Mobile Home .....	.9	93.2	.5	102.9	Q	Q	Q	Q	.3	88.1	27.36
Single Family	10.8	138.9	7.5	154.1	.8	81.1	1.1	128.3	.6	129.7	7.98
Building of 2 or More Units	4.2	96.8	3.9	100.6	Q	37.1	Q	Q	NC	NC	18.05
Number of Rooms											
1 to 3	1.8	73.4	1.4	76.3	.2	49.9	Q	Q	Q	Q	17.07
4 to 5	6.7	109.5	5.0	117.2	.4	64.2	.5	105.7	.4	102.6	11.13
6 or More	7.3	152.6	5.4	165.9	.5	85.3	.7	140.6	.3	150.6	9.10
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	5.3	91.6	4.2	96.0	.4	56.2	.2	108.7	.3	92.3	11.92
1,000 to 1,999	5.3	126.8	3.7	141.0	.4	72.7	.5	111.5	.4	116.1	10.18
2,000 or More	5.3	157.4	3.9	169.6	.2	93.5	.6	144.9	.2	146.1	9.85
Year of Construction											
1949 or Before	6.6	139.0	5.1	148.7	.2	60.4	.6	136.6	.2	132.5	9.60
1950 to 1974	6.3	121.1	4.8	127.9	.4	74.3	.5	117.1	.4	115.4	13.17
1975 or After	2.9	103.0	1.9	112.7	.5	72.2	Q	Q	.3	107.1	17.92
Status of Unit											
Owned	10.7	136.3	7.4	151.3	.7	80.5	1.0	127.7	.8	119.5	7.54
Rented	5.1	102.3	4.4	106.1	.4	51.4	.2	119.0	Q	Q	15.17
1987 Family Income											
Less than \$10,000	3.0	121.6	2.3	130.3	.2	62.4	Q	Q	.2	106.3	17.59
\$10,000 to \$19,999	4.4	114.6	3.2	122.9	.2	60.1	.4	131.6	Q	103.1	13.53
\$20,000 to \$34,999	4.4	117.9	3.1	126.9	.4	66.0	.5	121.7	.2	130.8	10.81
\$35,000 or More	4.1	147.2	3.2	155.9	Q	87.2	.2	136.0	Q	Q	12.31
Below 100 Percent of Poverty Line	1.7	133.1	1.3	146.7	Q	Q	Q	Q	Q	Q	17.25
Below 125 Percent of Poverty Line	3.2	124.6	2.4	136.6	.3	65.9	.2	116.4	.2	109.9	15.35
Assistance for Heating in Winter											
Yes	1.0	139.9	.7	157.1	Q	Q	Q	Q	Q	Q	26.92
No	14.9	124.3	11.1	133.0	1.0	69.7	1.1	128.7	.7	118.4	7.23

See footnotes at end of table.

Table 18. Total Consumption per Midwest Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.699	0.307	0.889	0.340	3.145	1.336	2.493	0.998	2.565	0.575	
Age of Householder											
Under 35 Years	4.9	119.5	3.9	127.4	0.3	50.1	0.3	138.9	0.2	115.4	12.94
35 to 59 Years	5.9	136.8	4.2	151.3	.6	86.8	.5	115.8	.3	126.7	9.25
60 Years and Over	5.0	117.3	3.8	123.2	.2	56.3	.4	130.0	.4	109.7	12.35
Household Size											
1 Person	3.6	105.8	3.2	109.1	Q	Q	Q	Q	Q	Q	15.36
2 to 4 Persons	10.4	128.7	7.4	140.2	.8	71.6	1.0	131.6	.6	125.1	8.85
5 or More Persons	1.8	145.0	1.2	168.6	Q	Q	Q	Q	Q	Q	16.66
Secondary Heating											
Yes	6.0	134.4	3.5	157.9	.5	84.7	.7	130.0	.5	112.8	10.55
No	9.8	119.6	8.3	124.6	.5	56.2	.5	121.5	.4	123.2	9.79
Hot Water Fuel											
Natural Gas	10.9	134.6	10.6	135.5	Q	Q	Q	Q	NC	NC	8.77
Electricity	4.2	104.3	1.2	125.3	1.0	69.5	1.0	126.9	.4	123.0	12.43
Fuel Oil or Kerosene	Q	Q	NC	NC	NC	NC	Q	Q	NC	NC	a
Other .....	.7	103.7	NC	NC	NC	NC	Q	Q	.5	112.9	24.21
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	3.4	110.4	1.6	124.0	Q	72.6	.6	118.9	Q	114.1	18.56
5,500 to 7,000 HDD	11.8	130.4	9.8	137.2	.8	70.6	.6	134.3	.3	119.3	11.43
4,000 to 5,499 HDD	Q	109.9	Q	109.3	Q	Q	Q	Q	Q	Q	59.36
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --											
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Midwest

West North Central

Averages

Table 18. Total Consumption per Midwest Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.699	0.307	0.889	0.340	3.145	1.336	2.493	0.998	2.565	0.575	
West North Central Division	6.4	115.8	4.8	126.1	0.4	68.6	0.3	108.0	0.5	111.3	7.76
Metropolitan Status											
Metropolitan	3.5	118.7	3.0	126.1	.2	68.2	Q	112.3	Q	Q	12.41
Central City	1.8	116.0	1.6	120.4	Q	50.4	Q	Q	NC	NC	17.99
Outside Central City	1.8	121.5	1.3	132.9	.1	80.4	Q	Q	Q	Q	12.89
Nonmetropolitan	2.9	112.1	1.8	126.2	.2	69.2	.2	106.3	.4	114.5	10.30
Payment Method for Utilities											
All Paid by Household	5.5	121.1	3.9	134.5	.4	70.3	.3	105.6	.5	111.5	7.62
Some or None Paid by Household, Other Method .....	.9	84.2	.8	85.8	Q	Q	Q	Q	Q	Q	19.34
Housing Structure											
Mobile Home .....	.3	92.0	.1	100.0	Q	Q	Q	Q	Q	87.8	29.50
Single Family	4.8	124.9	3.5	138.2	.3	78.5	.3	109.5	.4	117.0	3.58
Building of 2 or More Units	1.3	86.2	1.1	91.7	Q	41.3	Q	Q	NC	NC	16.54
Number of Rooms											
1 to 3 .....	.7	73.7	.5	79.8	Q	37.9	Q	Q	Q	Q	24.61
4 to 5	2.8	106.1	2.1	112.5	.1	63.2	.1	108.1	.2	109.3	11.01
6 or More	2.9	135.0	2.1	151.3	.2	86.3	Q	113.2	.2	120.7	10.75
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	1.6	87.9	1.2	93.9	.1	45.8	Q	Q	.2	85.4	12.01
1,000 to 1,999	2.5	114.4	1.9	125.0	.1	57.0	.1	90.1	.2	121.9	11.11
2,000 or More	2.2	137.8	1.6	151.8	.2	95.4	Q	139.3	.1	128.7	12.49
Year of Construction											
1949 or Before	2.6	128.2	2.0	138.0	.1	59.5	.2	110.8	.2	118.5	12.34
1950 to 1974	2.6	115.1	2.0	123.4	.2	82.4	.1	106.6	.2	106.2	12.71
1975 or After	1.2	89.8	.7	101.2	.2	58.7	Q	Q	.1	109.0	17.25
Status of Unit											
Owned	4.6	123.5	3.2	138.2	.3	73.9	.3	116.0	.4	108.4	3.53
Rented	1.8	95.8	1.5	99.9	.1	58.2	Q	Q	.1	125.9	14.91
1987 Family Income											
Less than \$10,000	1.4	101.5	1.0	108.9	Q	Q	.1	76.6	.1	94.8	16.63
\$10,000 to \$19,999	1.5	107.2	1.1	118.0	.1	50.2	Q	Q	.1	127.0	9.91
\$20,000 to \$34,999	1.9	112.0	1.3	123.9	.2	57.0	.1	128.4	.1	120.6	13.47
\$35,000 or More	1.6	140.9	1.3	149.7	.1	115.0	Q	Q	.1	102.8	15.84
Below 100 Percent of Poverty Line .....	.8	103.3	.6	114.3	Q	Q	Q	Q	.1	94.7	17.38
Below 125 Percent of Poverty Line	1.3	102.3	.9	111.3	Q	Q	.1	76.6	.1	101.9	15.77
Assistance for Heating in Winter											
Yes .....	.4	114.1	.3	119.6	Q	Q	Q	Q	Q	Q	32.62
No	6.0	115.9	4.5	126.5	.4	68.4	.3	105.7	.4	110.4	7.96

See footnotes at end of table.

Table 18. Total Consumption per Midwest Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors	0.689	0.307	0.889	0.340	3.145	1.336	2.493	0.998	2.565	0.575	
Age of Householder											
Under 35 Years	2.0	107.9	1.5	116.1	0.2	71.1	0.1	93.8	0.2	112.4	12.50
35 to 59 Years	2.5	125.2	1.8	138.4	.1	72.7	.1	121.2	.2	117.2	11.43
60 Years and Over	1.9	111.9	1.5	121.3	Q	61.3	.1	100.4	.2	104.9	14.46
Household Size											
1 Person	1.8	98.2	1.3	106.2	.1	43.7	.1	77.7	.1	97.2	14.08
2 to 4 Persons	4.0	120.3	3.0	130.9	.3	75.5	.2	126.7	.3	115.8	9.62
5 or More Persons .....	.6	137.1	.4	155.8	Q	Q	Q	Q	Q	Q	14.66
Secondary Heating											
Yes	2.5	118.7	1.6	138.8	.2	83.4	.1	96.5	.2	116.1	12.59
No	3.9	113.9	3.2	119.7	.2	56.3	.2	116.9	.3	107.1	9.22
Hot Water Fuel											
Natural Gas	4.3	126.1	4.2	127.1	Q	Q	Q	Q	NC	NC	9.22
Electricity	1.6	91.5	.5	118.6	.4	68.6	.3	108.0	.1	99.2	12.30
Fuel Oil or Kerosene	Q	Q	Q	Q	NC	NC	Q	Q	NC	NC	a
Other .....	.5	104.3	NC	NC	NC	NC	Q	Q	.3	116.9	13.76
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	2.2	110.3	1.6	119.3	Q	59.5	.2	110.5	.1	95.6	11.99
5,500 to 7,000 HDD	1.7	125.7	1.4	129.6	Q	Q	Q	Q	.1	127.8	16.99
4,000 to 5,499 HDD	2.5	113.9	1.7	129.8	.3	71.3	Q	Q	.2	109.4	11.60
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --											
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

NC No cases in sample.

^Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. • Column totals will not sum to total number of households because households with no main heating fuel or with other main heating fuel, such as wood, were not included.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 19. Total Expenditures per Midwest Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987

Household Characteristics	Total Expenditures In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.703	0.297	0.893	0.338	3.161	0.973	2.523	1.145	2.589	0.689	
Midwest Region	22.3	1,124	16.5	1,096	1.5	1,261	1.5	1,271	1.3	1,309	6.47
Metropolitan Status											
Metropolitan	15.8	1,138	12.8	1,123	.9	1,178	1.0	1,243	.4	1,421	8.56
Central City	6.7	1,092	5.9	1,104	.4	954	.3	1,062	Q	Q	11.48
Outside Central City	9.1	1,172	7.0	1,139	.5	1,384	.7	1,329	.4	1,422	8.94
Nonmetropolitan	6.4	1,091	3.7	1,003	.5	1,398	.6	1,319	.9	1,255	7.76
Payment Method for Utilities											
All Paid by Household	18.2	1,209	12.7	1,205	1.3	1,303	1.5	1,267	1.3	1,306	5.99
Some or None Paid by Household, Other Method	4.0	745	3.8	733	Q	785	Q	Q	Q	Q	20.21
Housing Structure											
Mobile Home	1.2	1,028	.6	966	Q	Q	Q	Q	.3	1,091	22.86
Single Family	15.6	1,252	10.9	1,248	1.0	1,402	1.4	1,297	1.0	1,385	6.19
Building of 2 or More Units	5.4	778	5.0	779	.3	790	Q	Q	NC	NC	13.12
Number of Rooms											
1 to 3	2.5	654	2.0	593	.3	839	Q	Q	.2	985	14.28
4 to 5	9.5	989	7.1	959	.5	1,174	.6	1,083	.6	1,159	8.23
6 or More	10.3	1,365	7.5	1,357	.6	1,520	.8	1,428	.5	1,592	6.56
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	6.9	823	5.4	783	.5	999	.2	1,018	.4	1,017	9.80
1,000 to 1,999	7.8	1,128	5.5	1,113	.5	1,258	.6	1,112	.6	1,325	7.83
2,000 or More	7.5	1,398	5.6	1,386	.4	1,627	.7	1,510	.3	1,627	6.86
Year of Construction											
1949 or Before	9.2	1,145	7.1	1,135	.3	995	.8	1,298	.4	1,362	7.53
1950 to 1974	9.0	1,122	6.9	1,091	.5	1,362	.6	1,220	.6	1,294	8.91
1975 or After	4.1	1,082	2.6	1,004	.6	1,296	.2	1,308	.3	1,271	14.21
Status of Unit											
Owned	15.3	1,241	10.6	1,244	1.0	1,399	1.3	1,290	1.1	1,320	6.00
Rented	6.9	865	5.9	829	.5	990	.2	1,158	.2	1,236	12.06
1987 Family Income											
Less than \$10,000	4.3	966	3.4	932	.2	1,133	.2	1,006	.3	1,173	12.48
\$10,000 to \$19,999	5.9	1,012	4.3	984	.3	1,053	.4	1,275	.4	1,177	10.36
\$20,000 to \$34,999	6.4	1,105	4.4	1,067	.5	1,129	.6	1,274	.4	1,486	8.14
\$35,000 or More	5.7	1,383	4.5	1,354	.4	1,645	.3	1,477	.2	1,462	9.04
Below 100 Percent of Poverty Line	2.5	1,043	1.9	1,033	.2	1,132	Q	Q	.2	1,207	14.68
Below 125 Percent of Poverty Line	4.4	1,029	3.3	1,001	.3	1,152	.3	1,071	.3	1,228	11.95
Assistance for Heating in Winter											
Yes	1.4	1,129	1.0	1,096	Q	Q	Q	Q	.2	1,226	16.57
No	20.9	1,124	15.6	1,096	1.4	1,249	1.5	1,283	1.2	1,320	5.73

See footnotes at end of table.

Table 19. Total Expenditures per Midwest Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.703	0.297	0.893	0.338	3.161	0.973	2.523	1.145	2.589	0.689	
Age of Householder											
Under 35 Years	6.9	1,052	5.4	1,023	0.5	996	0.4	1,369	0.3	1,308	9.78
35 to 59 Years	8.4	1,259	6.0	1,248	.7	1,511	.6	1,254	.5	1,352	6.85
60 Years and Over	6.9	1,033	5.2	998	.3	1,106	.5	1,218	.5	1,270	9.81
Household Size											
1 Person	5.4	840	4.6	830	.2	874	.2	813	.3	1,023	9.73
2 to 4 Persons	14.5	1,181	10.4	1,157	1.1	1,282	1.1	1,345	.9	1,398	6.82
5 or More Persons	2.4	1,426	1.6	1,466	Q	Q	.2	1,409	.2	1,317	11.67
Secondary Heating											
Yes	8.6	1,259	5.1	1,268	.7	1,469	.8	1,325	.7	1,305	7.70
No	13.7	1,040	11.5	1,020	.7	1,058	.7	1,205	.6	1,313	7.49
Hot Water Fuel											
Natural Gas	15.2	1,099	14.8	1,098	Q	Q	Q	Q	NC	NC	6.70
Electricity	5.8	1,182	1.7	1,085	1.4	1,261	1.3	1,278	.5	1,439	9.08
Fuel Oil or Kerosene	Q	Q	Q	Q	NC	NC	Q	Q	NC	NC	a
Other	1.2	1,172	NC	NC	NC	NC	Q	Q	.8	1,224	15.51
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	5.6	1,022	3.2	967	.3	1,133	.9	1,210	.6	1,183	11.59
5,500 to 7,000 HDD	13.5	1,151	11.2	1,116	.9	1,308	.6	1,403	.4	1,454	10.27
4,000 to 5,499 HDD	3.1	1,194	2.1	1,187	.3	1,248	Q	Q	.3	1,352	14.18
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --											
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 19. Total Expenditures per Midwest Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.703	0.297	0.893	0.338	3.161	0.973	2.523	1.145	2.589	0.689	
East North Central Division	15.9	1,149	11.8	1,113	1.1	1,300	1.2	1,298	0.9	1,382	7.84
Metropolitan Status											
Metropolitan	12.3	1,150	9.9	1,129	.7	1,199	.9	1,253	.4	1,489	8.91
Central City	4.9	1,112	4.2	1,126	Q	965	.3	1,071	Q	Q	3.45
Outside Central City	7.3	1,175	5.6	1,131	.3	1,440	.6	1,351	.3	1,499	9.62
Nonmetropolitan	3.6	1,145	1.9	1,035	.4	1,468	.3	1,421	Q	1,301	10.28
Payment Method for Utilities											
All Paid by Household	12.7	1,243	8.8	1,234	1.0	1,349	1.2	1,304	.8	1,375	8.17
Some or None Paid by Household, Other Method	3.1	765	3.0	758	Q	Q	Q	Q	Q	Q	25.47
Housing Structure											
Mobile Home .....	.9	1,051	.5	987	Q	Q	Q	Q	.3	1,111	30.60
Single Family	10.8	1,292	7.5	1,284	.8	1,457	1.1	1,321	.6	1,498	8.35
Building of 2 or More Units	4.2	798	3.9	800	Q	748	Q	Q	NC	NC	19.60
Number of Rooms											
1 to 3	1.8	653	1.4	592	.2	846	Q	Q	Q	Q	17.25
4 to 5	6.7	1,001	5.0	966	.4	1,211	.5	1,094	.4	1,189	11.32
6 or More	7.3	1,407	5.4	1,388	.5	1,577	.7	1,441	.3	1,819	7.90
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	5.3	836	4.2	790	.4	1,032	.2	1,069	.3	1,074	12.95
1,000 to 1,999	5.3	1,172	3.7	1,158	.4	1,332	.5	1,155	.4	1,359	10.33
2,000 or More	5.3	1,438	3.9	1,418	.2	1,728	.6	1,495	.2	1,752	8.71
Year of Construction											
1949 or Before	6.6	1,180	5.1	1,171	.2	1,031	.6	1,310	.2	1,540	8.69
1950 to 1974	6.9	1,135	4.8	1,095	.4	1,366	.5	1,258	.4	1,364	12.43
1975 or After	2.9	1,106	1.9	1,005	.5	1,363	Q	Q	.3	1,275	20.16
Status of Unit											
Owned	10.7	1,277	7.4	1,273	.7	1,475	1.0	1,306	.8	1,398	7.94
Rented	5.1	881	4.4	844	.4	954	.2	1,254	Q	Q	16.02
1987 Family Income											
Less than \$10,000	3.0	1,025	2.3	988	.2	1,172	Q	Q	.2	1,323	17.84
\$10,000 to \$19,999	4.4	1,024	3.2	990	.2	1,089	.4	1,363	Q	1,144	14.09
\$20,000 to \$34,999	4.4	1,125	3.1	1,072	.4	1,172	.5	1,282	.2	1,623	10.48
\$35,000 or More	4.1	1,395	3.2	1,364	Q	1,645	.2	1,380	Q	Q	12.31
Below 100 Percent of Poverty Line	1.7	1,133	1.3	1,119	Q	Q	Q	Q	Q	Q	16.06
Below 125 Percent of Poverty Line	3.2	1,090	2.4	1,059	.3	1,182	.2	1,159	.2	1,362	15.26
Assistance for Heating in Winter											
Yes	1.0	1,196	.7	1,164	Q	Q	Q	Q	Q	Q	25.78
No	14.9	1,145	11.1	1,110	1.0	1,278	1.1	1,317	.7	1,394	8.10

See footnotes at end of table.

Table 19. Total Expenditures per Midwest Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:										RSE Row Factors
	Total		Main Heating Fuel Is Natural Gas		Main Heating Fuel Is Electricity		Main Heating Fuel Is Fuel Oil or Kerosene		Main Heating Fuel Is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.703	0.297	0.893	0.898	3.161	0.973	2.523	1.145	2.589	0.689	
Age of Householder											
Under 35 Years	4.9	1,078	3.9	1,051	0.3	935	0.3	1,464	0.2	1,349	13.74
35 to 59 Years	5.9	1,287	4.2	1,262	.6	1,584	.5	1,224	.3	1,443	8.06
60 Years and Over	5.0	1,054	3.8	1,014	.2	1,048	.4	1,268	.4	1,345	13.33
Household Size											
1 Person	3.6	849	3.2	840	Q	Q	Q	Q	Q	Q	15.47
2 to 4 Persons	10.4	1,203	7.4	1,177	.8	1,297	1.0	1,330	.6	1,483	8.95
5 or More Persons	1.8	1,445	1.2	1,472	Q	Q	Q	Q	Q	Q	14.69
Secondary Heating											
Yes	6.0	1,314	3.5	1,322	.5	1,533	.7	1,376	.5	1,340	9.96
No	9.8	1,046	8.3	1,025	.5	1,058	.5	1,191	.4	1,440	10.08
Hot Water Fuel											
Natural Gas	10.9	1,116	10.6	1,114	Q	Q	Q	Q	NC	NC	8.97
Electricity	4.2	1,223	1.2	1,108	1.0	1,294	1.0	1,302	.4	1,539	11.71
Fuel Oil or Kerosene	Q	Q	NC	NC	NC	NC	Q	Q	NC	NC	a
Other .....	.7	1,206	NC	NC	NC	NC	Q	Q	.5	1,262	26.50
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	3.4	1,062	1.6	1,000	Q	1,186	.6	1,208	Q	1,214	16.08
5,500 to 7,000 HDD	11.8	1,172	9.8	1,136	.8	1,319	.6	1,404	.3	1,560	11.14
4,000 to 5,499 HDD	Q	1,187	Q	1,003	Q	Q	Q	Q	Q	Q	69.81
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --											
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 19. Total Expenditures per Midwest Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.703	0.297	0.893	0.338	3.161	0.973	2.523	1.145	2.589	0.689	
West North Central Division	6.4	1,064	4.8	1,053	0.4	1,159	0.3	1,168	0.5	1,175	8.40
Metropolitan Status											
Metropolitan	3.5	1,097	3.0	1,103	.2	1,120	Q	1,149	Q	Q	12.10
Central City	1.8	1,035	1.6	1,046	Q	917	Q	Q	NC	NC	20.27
Outside Central City	1.8	1,158	1.3	1,172	.1	1,260	Q	Q	Q	Q	11.94
Nonmetropolitan	2.9	1,025	1.8	968	.2	1,220	.2	1,175	.4	1,202	11.07
Payment Method for Utilities											
All Paid by Household	5.5	1,129	3.9	1,139	.4	1,183	.3	1,120	.5	1,177	8.09
Some or None Paid by Household, Other Method .....	.9	677	.8	641	Q	Q	Q	Q	Q	Q	20.08
Housing Structure											
Mobile Home .....	.3	964	.1	895	Q	Q	Q	Q	Q	1,037	37.44
Single Family	4.8	1,162	3.5	1,170	.3	1,258	.3	1,201	.4	1,208	9.57
Building of 2 or More Units	1.3	714	1.1	708	Q	890	Q	Q	NC	NC	14.29
Number of Rooms											
1 to 3 .....	.7	656	.5	598	Q	820	Q	Q	Q	Q	24.06
4 to 5	2.8	960	2.1	942	.1	1,076	.1	1,047	.2	1,093	10.13
6 or More	2.9	1,261	2.1	1,279	.2	1,373	Q	1,364	.2	1,290	10.75
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	1.6	781	1.2	757	.1	879	Q	Q	.2	927	11.64
1,000 to 1,999	2.5	1,037	1.9	1,023	.1	1,036	.1	970	.2	1,263	11.13
2,000 or More	2.2	1,304	1.6	1,311	.2	1,471	Q	1,584	.1	1,367	10.64
Year of Construction											
1949 or Before	2.6	1,057	2.0	1,045	.1	906	.2	1,262	.2	1,144	13.06
1950 to 1974	2.6	1,090	2.0	1,080	.2	1,353	.1	992	.2	1,172	11.12
1975 or After	1.2	1,023	.7	1,000	.2	1,088	Q	Q	.1	1,257	16.75
Status of Unit											
Owned	4.6	1,159	3.2	1,177	.3	1,197	.3	1,232	.4	1,171	9.60
Rented	1.8	820	1.5	785	.1	1,084	Q	Q	.1	1,196	12.48
1987 Family Income											
Less than \$10,000	1.4	837	1.0	808	Q	Q	.1	851	.1	961	13.35
\$10,000 to \$19,999	1.5	976	1.1	967	.1	993	Q	Q	.1	1,268	9.91
\$20,000 to \$34,999	1.9	1,060	1.3	1,054	.2	1,034	.1	1,241	.1	1,252	12.44
\$35,000 or More	1.6	1,352	1.3	1,329	.1	1,643	Q	Q	.1	1,276	14.15
Below 100 Percent of Poverty Line .....	.8	857	.6	839	Q	Q	Q	Q	.1	954	17.76
Below 125 Percent of Poverty Line	1.3	878	.9	852	Q	Q	.1	851	.1	1,008	14.67
Assistance for Heating in Winter											
Yes .....	.4	939	.3	905	Q	Q	Q	Q	Q	Q	30.20
No	6.0	1,072	4.5	1,061	.4	1,174	.3	1,157	.4	1,192	8.65

See footnotes at end of table.

Table 19. Total Expenditures per Midwest Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.703	0.297	0.893	0.338	3.161	0.973	2.523	1.145	2.589	0.689	
Age of Householder											
Under 35 Years	2.0	987	1.5	953	0.2	1,119	0.1	1,063	0.2	1,263	11.14
35 to 59 Years	2.5	1,192	1.8	1,215	.1	1,175	.1	1,356	.2	1,159	11.76
60 Years and Over	1.9	979	1.5	956	Q	1,193	.1	955	.2	1,105	13.36
Household Size											
1 Person	1.8	822	1.3	805	.1	893	.1	752	.1	1,010	11.48
2 to 4 Persons	4.0	1,125	3.0	1,110	.3	1,240	.2	1,439	.3	1,234	9.45
5 or More Persons .....	.6	1,370	.4	1,449	Q	Q	Q	Q	Q	Q	16.81
Secondary Heating											
Yes	2.5	1,126	1.6	1,148	.2	1,281	.1	1,070	.2	1,227	12.01
No	3.9	1,024	3.2	1,005	.2	1,057	.2	1,243	.3	1,130	9.29
Hot Water Fuel											
Natural Gas	4.3	1,054	4.2	1,056	Q	Q	Q	Q	NC	NC	9.62
Electricity	1.6	1,078	.5	1,033	.4	1,175	.3	1,187	.1	1,190	12.34
Fuel Oil or Kerosene	Q	Q	Q	Q	NC	NC	Q	Q	NC	NC	a
Other .....	.5	1,123	NC	NC	NC	NC	Q	Q	.3	1,168	12.94
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	2.2	961	1.6	936	Q	1,026	.2	1,215	.1	1,055	10.91
5,500 to 7,000 HDD	1.7	1,007	1.4	977	Q	Q	Q	Q	.1	1,240	18.35
4,000 to 5,499 HDD	2.5	1,196	1.7	1,232	.3	1,220	Q	Q	.2	1,196	12.90
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --											
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors.

• Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. • Column totals will not sum to total number of households because households with no main heating fuel or with other main heating fuel, such as wood or LPG, were not included.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 20. Natural Gas Consumption and Expenditures for Midwest Region Households, 1987

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	2.093	0.878	0.878	0.878	0.490	2.173	0.866	0.866	0.884	
Midwest Region	17.1	103.5	106.8	526	4.93	16.5	105.5	108.8	534	2.46
Metropolitan Status										
Metropolitan	13.2	105.9	109.2	536	4.91	12.8	107.5	110.8	542	2.89
Central City	6.0	106.9	110.2	544	4.94	5.9	108.9	112.2	553	3.85
Outside Central City	7.2	105.0	108.3	528	4.88	7.0	106.4	109.7	534	3.11
Nonmetropolitan	3.9	95.7	98.6	493	5.00	3.7	98.6	101.6	505	4.19
Natural Gas Paid by Household										
Yes	13.3	110.9	114.3	565	4.94	12.8	113.4	116.9	576	2.47
No	3.8	77.8	80.3	389	4.85	3.8	78.7	81.2	393	6.17
Housing Structure										
Mobile Home .....	.6	69.7	71.8	369	5.13	.6	72.1	74.3	380	9.53
Single Family	11.4	115.2	118.8	587	4.95	10.9	117.6	121.2	597	2.50
Building of 2 or More Units	5.1	81.8	84.3	409	4.85	5.0	83.1	85.7	415	4.91
Number of Rooms										
1 to 3	2.1	62.4	64.4	315	4.89	2.0	64.7	66.7	325	5.17
4 to 5	7.4	90.9	93.7	471	5.03	7.1	92.6	95.4	478	3.50
6 or More	7.7	126.6	130.5	635	4.86	7.5	128.4	132.4	642	2.41
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	5.6	76.5	78.8	389	4.93	5.4	77.8	80.2	394	3.32
1,000 to 1,999	5.8	106.4	109.7	544	4.96	5.5	108.6	112.0	553	2.79
2,000 or More	5.7	127.2	131.1	642	4.90	5.6	129.6	133.6	653	2.69
Year of Construction										
1949 or Before	7.4	117.6	121.2	594	4.90	7.1	120.5	124.2	607	3.40
1950 to 1974	7.1	96.8	99.8	493	4.93	6.9	98.7	101.8	500	3.83
1975 or After	2.6	82.4	84.9	424	5.00	2.6	82.8	85.4	426	7.42
Status of Unit										
Owned	11.1	114.0	117.5	580	4.93	10.6	116.4	120.0	590	2.42
Rented	6.0	84.4	87.0	427	4.91	5.9	85.8	88.5	433	4.09
1987 Family Income										
Less than \$10,000	3.4	102.0	105.1	515	4.90	3.4	103.1	106.3	520	4.76
\$10,000 to \$19,999	4.5	96.6	99.6	502	5.04	4.3	98.6	101.7	511	4.39
\$20,000 to \$34,999	4.6	97.9	100.9	501	4.96	4.4	100.1	103.2	509	3.18
\$35,000 or More	4.6	117.0	120.7	582	4.83	4.5	119.2	122.9	592	3.23
Below 100 Percent of Poverty Line	2.0	110.5	113.9	557	4.89	1.9	112.6	116.0	566	5.03
Below 125 Percent of Poverty Line	3.4	104.7	108.0	534	4.94	3.3	106.9	110.2	544	4.94
Assistance for Heating in Winter										
Yes	1.0	124.2	128.0	639	4.99	1.0	125.0	128.9	643	8.59
No	16.1	102.3	105.5	519	4.92	15.6	104.3	107.5	527	2.31
Age of Householder										
Under 35 Years	5.5	97.4	100.4	500	4.99	5.4	99.2	102.2	508	4.12
35 to 59 Years	6.2	113.1	116.7	568	4.87	6.0	116.1	119.7	580	2.81
60 Years and Over	5.4	98.7	101.8	503	4.94	5.2	100.0	103.1	508	3.93

See footnotes at end of table.

Table 20. Natural Gas Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	2.099	0.878	0.878	0.878	0.490	2.173	0.886	0.886	0.884	
Household Size										
1 Person	4.7	89.3	92.1	451	4.90	4.6	91.1	93.9	459	4.47
2 to 4 Persons	10.7	106.6	109.9	543	4.94	10.4	108.7	112.0	552	2.62
5 or More Persons	1.7	123.7	127.6	626	4.90	1.6	126.8	130.7	638	4.11
Secondary Heating										
Yes	5.5	114.4	118.0	580	4.92	5.1	119.1	122.8	600	3.29
No	11.6	98.4	101.4	500	4.93	11.5	99.4	102.5	505	3.02
Hot Water Fuel										
Natural Gas	15.2	105.9	109.2	535	4.90	14.8	107.3	110.6	541	2.71
Electricity	1.8	85.1	87.8	454	5.17	1.7	90.2	93.0	477	6.12
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Other	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	3.3	94.1	97.0	516	5.32	3.2	96.3	99.3	526	4.51
5,500 to 7,000 HDD	11.6	108.7	112.1	542	4.84	11.2	110.6	114.0	550	3.68
4,000 to 5,499 HDD	2.2	90.6	93.4	453	4.85	2.1	92.4	95.3	461	5.61
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 20. Natural Gas Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	2.093	0.878	0.878	0.878	0.490	2.173	0.866	0.866	0.884	
East North Central Division	12.2	107.1	110.5	553	5.01	11.8	109.2	112.6	562	3.14
Metropolitan Status										
Metropolitan	10.1	109.9	113.3	560	4.94	9.9	111.6	115.0	567	3.64
Central City	4.3	113.3	116.8	581	4.98	4.2	115.7	119.3	592	5.53
Outside Central City	5.8	107.3	110.7	544	4.92	5.6	108.5	111.9	548	3.93
Nonmetropolitan	2.1	93.6	96.5	522	5.41	1.9	97.0	100.0	539	4.80
Natural Gas Paid by Household										
Yes	9.2	115.5	119.1	600	5.03	8.8	118.4	122.1	613	3.12
No	3.0	81.1	83.6	411	4.91	3.0	81.5	84.1	413	7.64
Housing Structure										
Mobile Home .....	.5	69.5	71.6	377	5.27	.5	71.4	73.6	386	15.35
Single Family	7.8	120.9	124.7	629	5.05	7.5	123.5	127.4	641	2.97
Building of 2 or More Units	4.0	84.7	87.3	426	4.88	3.9	86.1	88.8	432	5.92
Number of Rooms										
1 to 3	1.5	62.4	64.4	320	4.98	1.4	64.6	66.6	330	6.01
4 to 5	5.2	93.2	96.1	493	5.13	5.0	95.2	98.1	501	4.60
6 or More	5.5	132.4	136.5	674	4.93	5.4	134.0	138.1	680	2.78
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	4.3	77.7	80.1	400	5.00	4.2	79.1	81.5	406	4.23
1,000 to 1,999	3.8	111.9	115.3	589	5.10	3.7	114.5	118.1	600	2.96
2,000 or More	4.0	134.3	138.5	685	4.95	3.9	136.4	140.7	694	3.21
Year of Construction										
1949 or Before	5.3	121.0	124.7	627	5.03	5.1	124.3	128.2	642	3.98
1950 to 1974	5.0	100.0	103.1	515	4.99	4.8	101.7	104.9	522	5.15
1975 or After	1.9	86.9	89.6	449	5.01	1.9	87.3	90.0	450	10.34
Status of Unit										
Owned	7.7	119.1	122.8	619	5.04	7.4	121.7	125.5	630	3.05
Rented	4.5	86.5	89.2	442	4.95	4.4	88.1	90.8	448	5.23
1987 Family Income										
Less than \$10,000	2.4	108.1	111.5	560	5.02	2.3	109.1	112.5	564	5.95
\$10,000 to \$19,999	3.3	99.3	102.3	525	5.13	3.2	101.1	104.2	534	5.63
\$20,000 to \$34,999	3.2	100.3	103.4	524	5.07	3.1	102.8	106.0	534	3.84
\$35,000 or More	3.3	120.7	124.4	605	4.86	3.2	123.2	127.0	615	3.63
Below 100 Percent of Poverty Line	1.4	118.5	122.2	609	4.99	1.3	120.4	124.1	618	6.04
Below 125 Percent of Poverty Line	2.4	110.7	114.1	576	5.04	2.4	113.2	116.8	587	5.87
Assistance for Heating in Winter										
Yes .....	.7	134.5	138.6	698	5.04	.7	134.5	138.6	698	10.06
No	11.5	105.4	108.7	544	5.01	11.1	107.5	110.9	554	2.92
Age of Householder										
Under 35 Years	4.0	100.8	103.9	528	5.08	3.9	102.5	105.7	536	5.49
35 to 59 Years	4.4	119.0	122.6	603	4.92	4.2	122.1	125.9	616	3.37
60 Years and Over	3.9	100.3	103.4	524	5.07	3.8	101.7	104.9	530	4.85

See footnotes at end of table.

Table 20. Natural Gas Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	2.093	0.878	0.878	0.878	0.490	2.173	0.866	0.866	0.884	
Household Size										
1 Person	3.3	91.2	94.0	471	5.00	3.2	93.1	96.0	479	5.47
2 to 4 Persons	7.6	110.7	114.2	573	5.02	7.4	112.7	116.2	582	3.27
5 or More Persons	1.2	127.8	131.8	654	4.96	1.2	131.3	135.3	668	5.00
Secondary Heating										
Yes	3.8	120.4	124.2	621	5.00	3.5	125.3	129.2	642	3.89
No	8.4	101.1	104.3	523	5.02	8.3	102.4	105.5	529	3.83
Hot Water Fuel										
Natural Gas	10.9	109.4	112.8	562	4.98	10.6	111.1	114.5	569	3.40
Electricity	1.3	87.5	90.2	482	5.34	1.2	92.1	95.0	504	7.90
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	1.6	97.1	100.1	578	5.77	1.6	99.3	102.4	589	6.19
5,500 to 7,000 HDD	10.2	109.7	113.1	554	4.90	9.8	111.8	115.3	563	3.87
4,000 to 5,499 HDD	Q	84.7	87.3	448	5.13	Q	84.7	87.3	448	18.28
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 20. Natural Gas Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used				Natural Gas Used as Main Heating Fuel					RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	2.093	0.878	0.878	0.878	0.490	2.173	0.866	0.866	0.884	
West North Central Division	4.9	94.6	97.5	457	4.69	4.8	96.4	99.4	464	3.86
Metropolitan Status										
Metropolitan	3.1	92.6	95.5	455	4.77	3.0	94.2	97.1	462	4.41
Central City	1.7	90.3	93.1	448	4.81	1.6	91.4	94.2	453	6.97
Outside Central City	1.4	95.4	98.3	465	4.73	1.3	97.5	100.5	473	4.23
Nonmetropolitan	1.8	98.0	101.0	460	4.56	1.8	100.3	103.4	468	6.88
Natural Gas Paid by Household										
Yes	4.1	100.4	103.5	487	4.70	4.0	102.1	105.3	493	3.61
No .....	.8	66.0	68.0	312	4.58	.8	68.2	70.3	320	7.41
Housing Structure										
Mobile Home .....	.2	70.3	72.5	341	4.71	.1	74.5	76.8	358	15.74
Single Family	3.6	102.9	106.1	497	4.68	3.5	104.9	108.1	504	3.47
Building of 2 or More Units	1.1	71.7	73.9	349	4.72	1.1	72.9	75.1	354	7.93
Number of Rooms										
1 to 3 .....	.6	62.5	64.4	299	4.64	.5	65.1	67.1	310	9.72
4 to 5	2.2	85.5	88.2	419	4.75	2.1	86.5	89.1	422	5.77
6 or More	2.2	111.8	115.3	536	4.65	2.1	114.3	117.8	546	3.66
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	1.3	72.4	74.6	350	4.70	1.2	73.5	75.8	355	5.57
1,000 to 1,999	1.9	95.5	98.5	454	4.61	1.9	96.9	99.9	459	5.97
2,000 or More	1.7	110.3	113.7	541	4.76	1.6	113.2	116.8	554	4.15
Year of Construction										
1949 or Before	2.1	108.8	112.2	510	4.55	2.0	110.7	114.2	518	5.76
1950 to 1974	2.1	89.2	92.0	440	4.78	2.0	91.5	94.3	448	4.40
1975 or After .....	.7	70.7	72.9	361	4.95	.7	71.3	73.5	364	10.34
Status of Unit										
Owned	3.4	102.2	105.4	491	4.66	3.2	104.3	107.6	500	3.32
Rented	1.5	78.0	80.4	383	4.77	1.5	79.4	81.8	388	6.14
1987 Family Income										
Less than \$10,000	1.1	88.3	91.0	416	4.57	1.0	89.5	92.3	422	7.09
\$10,000 to \$19,999	1.2	88.9	91.7	436	4.75	1.1	91.6	94.4	445	5.38
\$20,000 to \$34,999	1.4	92.2	95.1	446	4.69	1.3	93.8	96.7	451	5.39
\$35,000 or More	1.3	107.5	110.9	523	4.72	1.3	109.2	112.6	531	6.81
Below 100 Percent of Poverty Line .....	.6	92.5	95.4	439	4.60	.6	94.8	97.8	450	8.31
Below 125 Percent of Poverty Line .....	.9	89.3	92.0	427	4.64	.9	90.7	93.5	432	7.34
Assistance for Heating in Winter										
Yes .....	.3	96.6	99.6	481	4.83	.3	98.3	101.4	486	14.31
No	4.6	94.5	97.4	456	4.68	4.5	96.3	99.3	463	3.80
Age of Householder										
Under 35 Years	1.6	88.7	91.4	431	4.72	1.5	90.6	93.4	439	4.19
35 to 59 Years	1.9	99.5	102.6	487	4.74	1.8	102.0	105.2	496	3.82
60 Years and Over	1.5	94.6	97.5	447	4.59	1.5	95.5	98.5	451	7.44

See footnotes at end of table.

Table 20. Natural Gas Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	2.033	0.878	0.878	0.878	0.490	2.173	0.886	0.866	0.884	
Household Size										
1 Person	1.4	84.8	87.4	404	4.62	1.3	86.1	88.8	410	7.84
2 to 4 Persons	3.1	96.5	99.5	469	4.71	3.0	98.6	101.7	477	4.27
5 or More Persons .....	.4	112.0	115.4	543	4.71	.4	114.0	117.5	550	5.79
Secondary Heating										
Yes	1.7	101.1	104.3	490	4.70	1.6	105.6	108.8	508	4.61
No	3.2	91.1	94.0	440	4.68	3.2	91.8	94.7	442	4.52
Hot Water Fuel										
Natural Gas	4.3	96.8	99.8	467	4.68	4.2	97.8	100.9	471	4.03
Electricity .....	.6	79.9	82.4	393	4.77	.5	85.9	88.6	417	9.48
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Other	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	1.7	91.2	94.1	456	4.85	1.6	93.5	96.4	465	4.41
5,500 to 7,000 HDD	1.4	101.8	105.0	462	4.40	1.4	102.3	105.5	464	10.85
4,000 to 5,499 HDD	1.8	91.9	94.8	454	4.79	1.7	94.3	97.2	464	5.80
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

^{nc} No cases in sample.

^Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors.

• Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, F of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 21. Electricity Consumption and Expenditures for Midwest Region Households, 1987

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.922	0.661	0.661	0.630	0.334	3.944	1.562	1.562	1.225	
Midwest Region	22.3	8.03	27.4	633	23.09	1.5	18.92	64.5	1,220	5.62
Metropolitan Status										
Metropolitan	15.8	7.72	26.3	632	24.01	.9	17.88	61.0	1,155	8.61
Central City	6.7	6.86	23.4	573	24.50	.4	14.77	50.4	939	11.19
Outside Central City	9.1	8.35	28.5	676	23.71	.5	20.76	70.8	1,354	8.74
Nonmetropolitan	6.4	8.78	30.0	633	21.12	.5	20.62	70.4	1,328	6.10
Electricity Paid by Household										
Yes	20.8	8.30	28.3	653	23.06	1.4	19.69	67.2	1,257	5.32
No	1.5	4.18	14.2	341	23.95	Q	Q	Q	Q	12.24
Housing Structure										
Mobile Home	1.2	8.52	29.1	636	21.87	Q	Q	Q	Q	16.12
Single Family	15.6	9.34	31.9	717	22.51	1.0	21.68	74.0	1,355	4.95
Building of 2 or More Units	5.4	4.15	14.2	388	27.41	.3	10.17	34.7	766	9.57
Number of Rooms										
1 to 3	2.5	4.12	14.0	341	24.28	.3	9.86	33.6	740	9.66
4 to 5	9.5	6.78	23.1	536	23.16	.5	18.09	61.7	1,155	6.34
6 or More	10.3	10.14	34.6	793	22.93	.6	23.65	80.7	1,488	5.31
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	6.9	5.48	18.7	450	24.05	.5	13.57	46.3	941	8.40
1,000 to 1,999	7.8	7.92	27.0	624	23.10	.5	19.62	67.0	1,245	6.80
2,000 or More	7.5	10.49	35.8	810	22.63	.4	25.39	86.6	1,574	5.25
Year of Construction										
1949 or Before	9.2	7.15	24.4	577	23.66	.3	14.01	47.8	898	6.34
1950 to 1974	9.0	8.20	28.0	648	23.16	.5	21.28	72.6	1,333	7.16
1975 or After	4.1	9.62	32.8	724	22.03	.6	19.11	65.2	1,271	11.24
Status of Unit										
Owned	15.3	9.24	31.5	714	22.67	1.0	21.35	72.8	1,355	5.46
Rented	6.9	5.35	18.3	452	24.73	.5	14.15	48.3	956	10.53
1987 Family Income										
Less than \$10,000	4.3	5.72	19.5	471	24.13	.2	16.95	57.8	1,118	12.31
\$10,000 to \$19,999	5.9	6.93	23.6	539	22.80	.3	15.97	54.5	1,036	7.46
\$20,000 to \$34,999	6.4	8.23	28.1	641	22.83	.5	16.08	54.9	1,064	6.09
\$35,000 or More	5.7	10.69	36.5	842	23.09	.4	25.66	87.6	1,604	6.98
Below 100 Percent of Poverty Line	2.5	6.28	21.4	518	24.20	.2	16.63	56.7	1,113	14.28
Below 125 Percent of Poverty Line	4.4	6.44	22.0	526	23.92	.3	17.57	60.0	1,119	10.30
Assistance for Heating in Winter										
Yes	1.4	6.87	23.4	546	23.31	Q	Q	Q	Q	18.05
No	20.9	8.10	27.6	638	23.08	1.4	18.74	63.9	1,209	5.03
Age of Householder										
Under 35 Years	6.9	7.26	24.8	576	23.24	.5	15.43	52.6	966	8.23
35 to 59 Years	8.4	9.66	32.9	747	22.67	.7	22.32	76.1	1,449	4.96
60 Years and Over	6.9	6.82	23.3	551	23.68	.3	16.63	56.8	1,097	7.74

See footnotes at end of table.

Table 21. Electricity Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.922	0.661	0.661	0.690	0.334	3.944	1.562	1.562	1.225	
Household Size										
1 Person	5.4	4.70	16.0	398	24.84	0.2	12.75	43.5	855	7.67
2 to 4 Persons	14.5	8.72	29.8	678	22.80	1.1	19.44	66.3	1,235	5.98
5 or More Persons	2.4	11.40	38.9	888	22.84	Q	Q	Q	Q	7.80
Secondary Heating										
Yes	8.6	10.08	34.4	752	21.88	.7	22.27	76.0	1,408	5.80
No	13.7	6.74	23.0	558	24.23	.7	15.64	53.4	1,037	6.26
Hot Water Fuel										
Natural Gas	15.2	6.44	22.0	556	25.32	Q	Q	Q	Q	4.49
Electricity	5.8	12.28	41.9	838	19.99	1.4	19.22	65.6	1,231	6.44
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Other	1.2	7.67	26.2	618	23.60	NC	NC	NC	NC	17.97
All-Electric Home										
Yes	1.3	19.39	66.2	1,241	18.75	1.3	19.39	66.2	1,241	8.17
No	20.9	7.30	24.9	594	23.83	.1	13.40	45.7	981	7.21
Air Conditioning										
Yes	15.1	8.55	29.2	679	23.30	1.1	19.01	64.9	1,231	5.71
Central Unit	7.2	10.68	36.4	832	22.84	.7	22.16	75.6	1,397	6.12
Electric	7.1	10.65	36.3	830	22.84	.7	22.16	75.6	1,397	6.31
Individual Room Units ¹	7.9	6.60	22.5	540	23.98	.4	14.36	49.0	986	7.80
One Unit	6.3	6.27	21.4	509	23.77	.4	14.05	48.0	942	8.54
Two or More Units	1.6	7.86	26.8	660	24.60	Q	Q	Q	Q	7.33
No	7.2	6.94	23.7	534	22.56	.3	18.61	63.5	1,185	9.42
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	5.6	7.98	27.2	545	20.02	.3	16.37	55.9	1,034	8.59
5,500 to 7,000 HDD	13.5	7.53	25.7	632	24.59	.9	19.67	67.1	1,283	9.07
4,000 to 5,499 HDD	3.1	10.26	35.0	793	22.66	.3	19.14	65.3	1,217	8.87
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 21. Electricity Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.922	0.661	0.661	0.630	0.334	3.944	1.562	1.562	1.225	
East North Central Division	15.9	7.74	26.4	628	23.77	1.1	19.16	65.4	1,259	6.42
Metropolitan Status										
Metropolitan	12.3	7.29	24.9	621	24.96	.7	17.59	60.0	1,178	9.30
Central City	4.9	6.46	22.0	562	25.47	Q	14.90	50.8	948	15.06
Outside Central City	7.3	7.85	26.8	661	24.68	.3	20.36	69.5	1,416	9.80
Nonmetropolitan	3.6	9.31	31.7	653	20.57	.4	21.79	74.3	1,394	8.59
Electricity Paid by Household										
Yes	14.9	8.00	27.3	647	23.68	1.0	20.19	68.9	1,308	6.07
No .....	.9	3.63	12.4	335	27.04	Q	Q	Q	Q	17.19
Housing Structure										
Mobile Home .....	.9	8.91	30.4	659	21.66	Q	Q	Q	Q	22.01
Single Family	10.8	9.17	31.3	719	22.97	.8	22.08	75.3	1,414	6.45
Building of 2 or More Units	4.2	3.81	13.0	388	29.84	Q	9.55	32.6	717	15.98
Number of Rooms										
1 to 3	1.8	3.91	13.3	330	24.72	.2	9.60	32.8	714	12.35
4 to 5	6.7	6.46	22.0	526	23.89	.4	18.59	63.4	1,203	8.91
6 or More	7.3	9.87	33.7	795	23.62	.5	23.96	81.7	1,552	6.70
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	5.3	5.40	18.4	454	24.64	.4	14.21	48.5	970	10.98
1,000 to 1,999	5.3	7.75	26.4	625	23.62	.4	20.59	70.2	1,314	9.33
2,000 or More	5.3	10.09	34.4	806	23.42	.2	25.72	87.7	1,690	6.82
Year of Construction										
1949 or Before	6.6	6.96	23.7	577	24.32	.2	13.77	47.0	921	7.85
1950 to 1974	6.3	7.75	26.4	638	24.11	.4	20.92	71.4	1,345	9.58
1975 or After	2.9	9.52	32.5	723	22.26	.5	20.08	68.5	1,337	15.47
Status of Unit										
Owned	10.7	9.01	30.8	714	23.20	.7	21.85	74.6	1,428	7.22
Rented	5.1	5.09	17.4	449	25.88	.4	13.86	47.3	927	14.61
1987 Family Income										
Less than \$10,000	3.0	5.80	19.8	486	24.58	.2	17.65	60.2	1,159	15.51
\$10,000 to \$19,999	4.4	6.63	22.6	526	23.23	.2	16.93	57.8	1,074	12.79
\$20,000 to \$34,999	4.4	8.03	27.4	638	23.30	.4	16.91	57.7	1,103	8.31
\$35,000 or More	4.1	10.02	34.2	828	24.22	Q	23.95	81.7	1,606	10.75
Below 100 Percent of Poverty Line	1.7	6.59	22.5	552	24.56	Q	Q	Q	Q	14.02
Below 125 Percent of Poverty Line	3.2	6.60	22.5	545	24.20	.3	18.38	62.7	1,161	12.47
Assistance for Heating in Winter										
Yes	1.0	7.19	24.5	576	23.46	Q	Q	Q	Q	23.98
No	14.9	7.78	26.5	632	23.79	1.0	18.75	64.0	1,234	7.11
Age of Householder										
Under 35 Years	4.9	7.00	23.9	571	23.90	.3	13.89	47.4	916	11.28
35 to 59 Years	5.9	9.41	32.1	747	23.28	.6	23.17	79.1	1,523	6.06
60 Years and Over	5.0	6.50	22.2	543	24.49	.2	15.83	54.0	1,034	10.68

See footnotes at end of table.

Table 21. Electricity Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors	0.922	0.661	0.661	0.630	0.334	3.944	1.562	1.562	1.225	
Household Size										
1 Person	3.6	4.21	14.4	378	26.31	Q	Q	Q	Q	10.55
2 to 4 Persons	10.4	8.37	28.6	671	23.52	0.8	19.12	65.2	1,249	8.10
5 or More Persons	1.8	11.33	38.7	887	22.93	Q	Q	Q	Q	9.93
Secondary Heating										
Yes	6.0	10.15	34.6	774	22.35	.5	22.36	76.3	1,469	6.91
No	9.8	6.26	21.4	538	25.19	.5	15.84	54.1	1,042	8.68
Hot Water Fuel										
Natural Gas	10.9	5.96	20.3	545	26.80	Q	Q	Q	Q	5.56
Electricity	4.2	12.43	42.4	850	20.04	1.0	19.35	66.0	1,264	8.26
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Other .....	.7	7.52	25.7	605	23.57	NC	NC	NC	NC	30.69
All-Electric Home										
Yes	1.0	19.52	66.6	1,272	19.11	1.0	19.52	66.6	1,272	10.00
No	14.9	6.97	23.8	586	24.63	Q	Q	Q	Q	5.28
Air Conditioning										
Yes	10.0	8.15	27.8	675	24.27	.8	19.10	65.2	1,274	8.13
Central Unit	4.3	10.47	35.7	851	23.82	.4	22.61	77.2	1,464	9.08
Electric	4.2	10.39	35.5	846	23.84	.4	22.61	77.2	1,464	9.51
Individual Room Units ¹	5.7	6.38	21.8	541	24.84	.3	14.31	48.8	1,014	10.65
One Unit	4.6	5.99	20.4	505	24.71	.3	13.83	47.2	954	11.81
Two or More Units	1.1	7.99	27.3	688	25.24	Q	Q	Q	Q	9.00
No	5.9	7.06	24.1	550	22.80	.3	19.32	65.9	1,223	10.88
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	3.4	8.30	28.3	552	19.50	Q	Q	Q	1,073	7.26
5,500 to 7,000 HDD	11.8	7.54	25.7	644	25.02	.8	19.62	66.9	1,293	10.23
4,000 to 5,499 HDD	Q	8.59	29.3	749	25.55	Q	Q	Q	Q	35.59
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Shaded #'s used by market researchers working for NIPSCO - Northern Indiana Public Service Company.

Table 21. Electricity Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.922	0.661	0.661	0.630	0.334	3.944	1.562	1.562	1.225	
West North Central Division	6.4	8.73	29.8	644	21.60	0.4	18.28	62.4	1,117	5.32
Metropolitan Status										
Metropolitan	3.5	9.22	31.5	673	21.38	.2	18.67	63.7	1,092	8.41
Central City	1.8	7.99	27.2	607	22.28	Q	14.35	48.9	911	16.33
Outside Central City	1.8	10.46	35.7	739	20.70	.1	21.64	73.8	1,216	9.54
Nonmetropolitan	2.9	8.13	27.7	608	21.91	.2	17.65	60.2	1,158	6.93
Electricity Paid by Household										
Yes	5.9	9.07	30.9	671	21.68	.4	18.43	62.9	1,128	5.74
No	5	5.12	17.5	352	20.16	Q	Q	Q	Q	20.04
Housing Structure										
Mobile Home .....	.3	7.41	25.3	571	22.58	Q	Q	Q	Q	21.77
Single Family	4.8	9.71	33.1	714	21.55	.3	20.65	70.4	1,203	6.85
Building of 2 or More Units	1.3	5.30	18.1	391	21.60	Q	11.63	39.7	883	10.91
Number of Rooms										
1 to 3	7	4.65	15.9	370	23.32	Q	10.56	36.0	812	20.43
4 to 5	2.8	7.57	25.8	560	21.68	.1	16.76	57.2	1,030	7.30
6 or More	2.9	10.81	36.9	789	21.37	.2	22.85	78.0	1,320	7.56
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	1.6	5.76	19.6	438	22.27	.1	11.21	38.3	836	8.16
1,000 to 1,999	2.5	8.29	28.3	624	22.07	.1	16.71	57.0	1,036	6.96
2,000 or More	2.2	11.43	39.0	818	20.97	.2	24.88	84.9	1,396	8.75
Year of Construction										
1949 or Before	2.6	7.64	26.1	576	22.11	.1	14.60	49.8	840	9.98
1950 to 1974	2.6	9.29	31.7	673	21.24	.2	22.12	75.5	1,305	9.78
1975 or After	1.2	9.89	33.7	725	21.49	.2	16.15	55.1	1,068	8.21
Status of Unit										
Owned	4.6	9.75	33.3	716	21.51	.3	20.01	68.3	1,161	7.07
Rented	1.8	6.10	20.8	458	21.97	.1	14.90	50.8	1,032	11.08
1987 Family Income										
Less than \$10,000	1.4	5.54	18.9	437	23.11	Q	Q	Q	Q	12.96
\$10,000 to \$19,999	1.5	7.78	26.5	577	21.75	.1	14.41	49.2	973	5.48
\$20,000 to \$34,999	1.9	8.71	29.7	649	21.86	.2	14.24	48.6	977	6.79
\$35,000 or More	1.6	12.44	42.4	879	20.71	.1	31.20	106.5	1,597	12.50
Below 100 Percent of Poverty Line .....	.8	5.63	19.2	448	23.33	Q	Q	Q	Q	15.32
Below 125 Percent of Poverty Line	1.3	6.04	20.6	477	23.15	Q	Q	Q	Q	13.98
Assistance for Heating in Winter										
Yes .....	.4	5.97	20.4	464	22.80	Q	Q	Q	Q	19.22
No	6.0	8.89	30.3	654	21.55	.4	18.72	63.9	1,142	5.92
Age of Householder										
Under 35 Years	2.0	7.90	26.9	588	21.81	.2	18.49	63.1	1,066	10.00
35 to 59 Years	2.5	10.24	34.9	745	21.32	.1	18.43	62.9	1,110	6.94
60 Years and Over	1.9	7.65	26.1	570	21.86	Q	17.85	60.9	1,192	9.07

See footnotes at end of table.

Table 21. Electricity Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors	0.922	0.661	0.661	0.630	0.334	3.944	1.562	1.562	1.225	
Household Size										
1 Person	1.8	5.69	19.4	439	22.58	0.1	12.68	43.3	891	8.58
2 to 4 Persons	4.0	9.63	32.9	696	21.18	.3	20.34	69.4	1,198	6.27
5 or More Persons .....	.6	11.59	39.6	893	22.57	Q	Q	Q	Q	10.08
Secondary Heating										
Yes	2.5	9.92	33.8	701	20.71	.2	22.02	75.1	1,229	9.57
No	3.9	7.96	27.2	606	22.32	.2	15.17	51.8	1,025	7.44
Hot Water Fuel										
Natural Gas	4.3	7.66	26.1	585	22.39	Q	Q	Q	Q	7.22
Electricity	1.6	11.89	40.6	805	19.85	.4	18.86	64.4	1,144	7.77
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Other .....	.5	7.90	26.9	637	23.65	NC	NC	NC	NC	15.28
All-Electric Home										
Yes .....	.4	19.05	65.0	1,156	17.79	.4	19.05	65.0	1,156	12.16
No	6.0	8.11	27.7	613	22.14	Q	Q	Q	Q	5.54
Air Conditioning										
Yes	5.1	9.32	31.8	688	21.65	.4	18.84	64.3	1,143	6.45
Central Unit	2.9	10.99	37.5	804	21.46	.2	21.30	72.7	1,270	7.79
Electric	2.9	11.01	37.6	807	21.47	.2	21.30	72.7	1,270	7.82
Individual Room Units ¹	2.2	7.15	24.4	537	22.02	.1	14.49	49.5	917	8.28
One Unit	1.7	7.02	23.9	518	21.65	.1	14.49	49.5	917	9.50
Two or More Units .....	.5	7.60	25.9	600	23.16	NC	NC	NC	NC	11.98
No	1.3	6.33	21.6	461	21.32	Q	Q	Q	Q	9.95
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	2.2	7.50	25.6	535	20.90	Q	14.79	50.4	957	8.19
5,500 to 7,000 HDD	1.7	7.48	25.5	550	21.56	Q	Q	Q	Q	11.03
4,000 to 5,499 HDD	2.5	10.69	36.5	805	22.06	.3	19.15	65.3	1,184	9.07
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

¹ Homes having both a central air conditioner and one or more window or wall units are not included here. They are included under "Central Unit".

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, E of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 22. Fuel Oil or Kerosene Consumption and Expenditures for Midwest Region Households, 1987

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.574	1.246	1.248	1.206	0.180	2.245	0.941	0.944	0.942	
Midwest Region	3.1	375	51.8	309	5.97	1.5	585	80.9	475	5.69
Metropolitan Status										
Metropolitan	1.9	383	53.0	316	5.97	1.0	599	82.9	488	6.41
Central City .....	.7	321	44.4	269	6.07	.3	504	69.7	414	16.32
Outside Central City	1.2	420	58.1	344	5.93	.7	644	89.1	523	6.89
Nonmetropolitan	1.2	363	49.9	298	5.97	.6	561	77.3	453	10.56
Fuel Oil or Kerosene Paid by Household										
Yes	3.0	366	50.5	301	5.97	1.5	586	81.0	476	5.82
No	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Housing Structure										
Mobile Home .....	.3	194	26.6	170	6.38	Q	Q	Q	Q	26.48
Single Family	2.7	403	55.6	331	5.94	1.4	593	82.0	479	5.68
Building of 2 or More Units .....	.1	Q	Q	Q	6.13	Q	Q	Q	Q	32.86
Number of Rooms										
1 to 3 .....	.2	179	24.6	151	6.14	Q	Q	Q	Q	29.03
4 to 5	1.2	363	50.1	304	6.07	.6	500	69.0	415	9.57
6 or More	1.7	407	56.2	331	5.90	.8	652	90.2	523	6.57
Measured Heated Area of Residence (square feet)										
Fewer than 1,000 .....	.6	261	35.9	223	6.22	.2	542	74.6	461	13.94
1,000 to 1,999	1.2	349	48.1	293	6.10	.6	497	68.5	410	9.09
2,000 or More	1.2	458	63.5	368	5.80	.7	683	94.7	541	7.34
Year of Construction										
1949 or Before	1.6	384	53.0	315	5.95	.8	645	89.0	520	7.29
1950 to 1974	1.1	390	53.9	320	5.94	.6	545	75.3	445	12.77
1975 or After .....	.4	291	40.2	249	6.20	.2	460	63.6	379	11.25
Status of Unit										
Owned	2.6	367	50.6	302	5.97	1.3	592	81.8	481	6.21
Rented .....	.5	419	57.9	345	5.96	.2	544	75.2	444	16.02
1987 Family Income										
Less than \$10,000 .....	.5	439	60.6	366	6.03	.2	560	77.1	464	17.16
\$10,000 to \$19,999 .....	.9	334	46.0	273	5.94	.4	594	82.0	475	10.96
\$20,000 to \$34,999	1.0	375	51.7	318	6.14	.6	558	77.0	467	10.79
\$35,000 or More .....	.7	386	53.4	305	5.71	.3	647	89.7	501	14.31
Below 100 Percent of Poverty Line .....	.3	Q	Q	Q	6.14	Q	Q	Q	Q	19.27
Below 125 Percent of Poverty Line .....	.5	426	58.9	351	5.96	.3	545	75.3	445	17.77
Assistance for Heating in Winter										
Yes .....	.2	250	34.6	219	6.35	Q	Q	Q	Q	21.36
No	2.9	385	53.1	316	5.95	1.5	592	81.8	479	5.50
Age of Householder										
Under 35 Years .....	.9	364	50.3	307	6.10	.4	617	85.1	513	11.04
35 to 59 Years	1.3	353	48.8	291	5.96	.6	537	74.4	430	8.82
60 Years and Over .....	.8	423	58.3	342	5.85	.5	621	85.8	503	10.53

See footnotes at end of table.

Table 22. Fuel Oil or Kerosene Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1,574	1,246	1,248	1,206	0.180	2,245	0,941	0,944	0,942	
Household Size										
1 Person	0.5	242	33.3	203	6.09	0.2	440	60.6	363	14.93
2 to 4 Persons	2.3	411	56.8	339	5.96	1.1	637	88.1	517	6.98
5 or More Persons .....	.4	321	44.4	263	5.91	.2	463	64.2	371	18.66
Secondary Heating										
Yes	2.3	292	40.3	245	6.07	.8	577	79.7	475	7.19
No .....	.8	617	85.3	497	5.82	.7	595	82.2	476	8.18
Hot Water Fuel										
Natural Gas .....	.8	153	21.1	136	6.44	Q	Q	Q	Q	25.58
Electricity	2.1	471	65.1	384	5.90	1.3	606	83.8	490	5.46
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Other	Q	Q	Q	Q	6.43	Q	Q	Q	Q	52.45
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	1.4	447	61.8	360	5.82	.9	558	77.1	443	6.59
5,500 to 7,000 HDD	1.4	341	47.0	289	6.16	.6	635	87.6	531	9.85
4,000 to 5,499 HDD .....	.3	Q	Q	Q	6.01	Q	Q	Q	Q	60.62
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 22. Fuel Oil or Kerosene Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.574	1.246	1.248	1.206	0.180	2.245	0.941	0.944	0.942	
East North Central Division	2.5	392	54.2	326	6.01	1.2	606	83.7	496	6.17
Metropolitan Status										
Metropolitan	1.7	395	54.7	327	5.99	.9	606	83.9	495	6.72
Central City .....	.7	326	45.0	273	6.06	.3	507	70.2	416	16.49
Outside Central City	1.0	443	61.3	364	5.95	.6	659	91.2	538	7.22
Nonmetropolitan .....	.8	387	53.2	322	6.06	.3	606	83.3	497	10.93
Fuel Oil or Kerosene Paid by Household										
Yes	2.4	377	52.0	313	6.01	1.2	608	84.0	497	6.42
No	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Housing Structure										
Mobile Home .....	.2	Q	Q	Q	6.31	Q	Q	Q	Q	27.20
Single Family	2.2	415	57.3	344	5.99	1.1	609	84.1	496	6.26
Building of 2 or More Units	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Number of Rooms										
1 to 3	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
4 to 5 .....	.9	379	52.3	320	6.12	.5	493	68.0	412	11.72
6 or More	1.5	421	58.2	345	5.94	.7	682	94.2	551	7.07
Measured Heated Area of Residence (square feet)										
Fewer than 1,000 .....	.5	283	39.1	242	6.19	.2	595	82.2	505	15.49
1,000 to 1,999	1.0	363	50.0	308	6.17	.5	514	70.8	430	10.09
2,000 or More	1.0	473	65.5	382	5.83	.6	688	95.3	549	8.26
Year of Construction										
1949 or Before	1.3	382	52.7	318	6.04	.6	683	94.2	559	8.02
1950 to 1974 .....	.8	450	62.2	368	5.92	.5	554	76.6	451	14.03
1975 or After .....	.3	284	39.3	244	6.22	Q	Q	Q	Q	11.79
Status of Unit										
Owned	2.1	376	51.9	312	6.02	1.0	604	83.5	494	6.92
Rented .....	.4	476	65.8	393	5.97	.2	616	85.3	505	19.35
1987 Family Income										
Less than \$10,000 .....	.3	511	70.6	427	6.04	Q	Q	Q	Q	20.98
\$10,000 to \$19,999 .....	.7	368	50.7	301	5.94	.4	637	88.0	510	12.13
\$20,000 to \$34,999 .....	.8	355	48.9	305	6.24	.5	536	73.9	454	12.64
\$35,000 or More .....	.6	410	56.7	328	5.78	.2	665	92.1	524	15.82
Below 100 Percent of Poverty Line .....	.2	Q	Q	Q	6.10	Q	Q	Q	Q	41.00
Below 125 Percent of Poverty Line .....	.4	484	67.0	399	5.95	.2	609	84.3	497	21.80
Assistance for Heating in Winter										
Yes .....	.2	248	34.3	218	6.36	Q	Q	Q	Q	23.73
No	2.3	404	55.8	334	5.99	1.1	615	85.0	502	5.89
Age of Householder										
Under 35 Years .....	.7	403	55.6	342	6.16	.3	678	93.5	572	12.48
35 to 59 Years	1.0	366	50.5	304	6.02	.5	540	74.7	435	9.88
60 Years and Over .....	.7	421	58.2	340	5.85	.4	633	87.4	513	11.19

See footnotes at end of table.

Table 22. Fuel Oil or Kerosene Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.574	1.246	1.246	1.206	0.180	2.245	0.941	0.944	0.942	
Household Size										
1 Person	0.3	240	32.9	203	6.19	Q	Q	Q	Q	28.79
2 to 4 Persons	1.9	430	59.3	356	5.99	1.0	647	89.4	528	7.15
5 or More Persons .....	.3	294	40.7	245	6.01	Q	Q	Q	Q	17.21
Secondary Heating										
Yes	1.9	312	43.0	262	6.08	.7	606	83.7	499	7.51
No .....	.6	652	90.1	531	5.90	.5	607	83.8	491	9.78
Hot Water Fuel										
Natural Gas .....	.7	175	24.1	155	6.41	Q	Q	Q	Q	25.93
Electricity	1.7	492	67.9	404	5.94	1.0	631	87.3	514	6.12
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	1.1	456	63.0	368	5.84	.6	572	79.1	454	7.94
5,500 to 7,000 HDD	1.3	354	48.7	301	6.19	.6	633	87.3	533	9.72
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 22. Fuel Oil or Kerosene Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1,574	1,246	1,248	1,206	0.180	2,245	0.941	0.944	0.942	
West North Central Division	0.6	301	41.6	239	5.74	0.3	506	70.0	398	11.92
Metropolitan Status										
Metropolitan .....	.2	276	38.2	221	5.77	Q	528	73.2	417	43.60
Central City	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Outside Central City .....	.2	290	40.2	231	5.74	Q	Q	Q	Q	50.41
Nonmetropolitan .....	.4	314	43.3	248	5.73	.2	497	68.7	390	15.32
Fuel Oil or Kerosene Paid by Household										
Yes .....	.6	316	43.7	251	5.74	.3	506	70.0	398	12.06
No	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Housing Structure										
Mobile Home	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Single Family .....	.5	344	47.6	270	5.66	.3	530	73.4	411	11.98
Building of 2 or More Units	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Number of Rooms										
1 to 3	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
4 to 5 .....	.3	310	42.8	252	5.89	.1	526	72.6	424	14.26
6 or More .....	.3	324	44.9	251	5.60	Q	505	70.0	386	20.91
Measured Heated Area of Residence (square feet)										
Fewer than 1,000 .....	.1	183	25.0	160	6.39	Q	Q	Q	Q	29.01
1,000 to 1,999 .....	.2	286	39.6	226	5.69	.1	439	60.8	344	21.51
2,000 or More .....	.2	391	54.2	303	5.60	Q	659	91.4	503	18.22
Year of Construction										
1949 or Before .....	.3	394	54.6	303	5.56	.2	530	73.4	402	15.47
1950 to 1974 .....	.2	182	25.1	153	6.08	.1	490	67.7	410	26.20
1975 or After	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Status of Unit										
Owned .....	.5	329	45.5	261	5.75	.3	549	75.9	432	12.96
Rented .....	.1	Q	Q	Q	5.69	Q	Q	Q	Q	54.58
1987 Family Income										
Less than \$10,000 .....	.1	249	34.2	205	5.98	.1	384	52.9	314	26.85
\$10,000 to \$19,999 .....	.2	183	25.2	149	5.91	Q	Q	Q	Q	24.92
\$20,000 to \$34,999 .....	.2	472	65.4	380	5.81	.1	644	89.2	518	25.10
\$35,000 or More .....	.1	Q	Q	Q	5.21	Q	Q	Q	Q	53.28
Below 100 Percent of Poverty Line	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Below 125 Percent of Poverty Line .....	.1	249	34.2	205	5.98	.1	384	52.9	314	26.85
Assistance for Heating in Winter										
Yes	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
No .....	.6	303	41.9	240	5.72	.3	504	69.7	395	13.10
Age of Householder										
Under 35 Years .....	.2	217	30.1	172	5.70	.1	422	58.4	325	29.00
35 to 59 Years .....	.3	309	42.7	243	5.69	.1	529	73.2	412	22.31
60 Years and Over .....	.1	431	59.4	350	5.88	.1	559	77.1	453	18.19

See footnotes at end of table.

Table 22. Fuel Oil or Kerosene Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.574	1.246	1.248	1.206	0.180	2.245	0.941	0.944	0.942	
Household Size										
1 Person	0.2	245	33.9	201	5.95	0.1	379	52.3	308	19.86
2 to 4 Persons .....	.3	305	42.2	240	5.69	.2	578	79.9	449	16.45
5 or More Persons	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Secondary Heating										
Yes .....	.4	195	26.9	162	6.00	.1	434	60.0	356	25.83
No .....	.2	512	70.9	393	5.55	.2	562	77.7	431	12.49
Hot Water Fuel										
Natural Gas	Q	29	3.9	29	7.58	Q	Q	Q	Q	50.08
Electricity .....	.4	386	53.4	302	5.66	.3	514	71.0	400	10.31
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD .....	.3	418	57.7	331	5.73	.2	521	72.0	412	10.57
5,500 to 7,000 HDD	Q	Q	Q	Q	5.49	Q	Q	Q	Q	185.49
4,000 to 5,499 HDD	Q	Q	Q	Q	6.03	Q	Q	Q	Q	238.26
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 23. Liquefied Petroleum Gas Consumption and Expenditures for Midwest Region Households, 1987

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
	2.355	1.081	1.081	0.950	0.503	2.396	0.632	0.632	0.795	
RSE Column Factors:	2.355	1.081	1.081	0.950	0.503	2.396	0.632	0.632	0.795	
Midwest Region	2.3	630	57.6	436	7.58	1.3	910	83.1	602	6.62
Metropolitan Status										
Metropolitan .....	.7	591	54.0	436	8.08	.4	856	78.2	610	11.03
Central City	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Outside Central City .....	.7	608	55.6	442	7.95	.4	909	83.1	637	10.23
Nonmetropolitan	1.5	649	59.3	436	7.36	.9	935	85.4	598	8.02
LPG Paid by Household										
Yes	2.3	629	57.4	435	7.57	1.3	908	83.0	601	6.69
No	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Housing Structure										
Mobile Home .....	.4	594	54.2	434	8.01	.3	689	62.9	506	12.52
Single Family	1.8	648	59.2	442	7.47	1.0	987	90.2	636	7.22
Building of 2 or More Units	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Number of Rooms										
1 to 3	Q	519	47.4	417	8.79	.2	715	65.3	545	13.61
4 to 5	1.1	606	55.4	428	7.73	.6	867	79.2	589	10.95
6 or More .....	.9	691	63.2	452	7.15	.5	1,024	93.5	636	8.75
Measured Heated Area of Residence (square feet)										
Fewer than 1,000 .....	.7	542	49.5	389	7.87	.4	735	67.1	506	9.18
1,000 to 1,999	1.0	612	55.9	431	7.71	.6	915	83.6	613	9.36
2,000 or More .....	.6	770	70.3	502	7.14	.3	1,107	101.1	697	9.47
Year of Construction										
1949 or Before .....	.8	624	57.0	406	7.13	.4	1,025	93.6	598	11.31
1950 to 1974 .....	.9	668	61.0	473	7.76	.6	870	79.5	612	10.96
1975 or After .....	.6	585	53.5	424	7.94	.3	842	76.9	589	12.16
Status of Unit										
Owned	2.0	625	57.1	436	7.64	1.1	907	82.9	605	6.89
Rented .....	.3	671	61.3	438	7.14	.2	922	84.2	582	16.04
1987 Family Income										
Less than \$10,000 .....	.5	555	50.7	397	7.84	.3	822	75.0	571	11.65
\$10,000 to \$19,999 .....	.6	688	62.9	484	7.71	.4	916	83.7	626	14.62
\$20,000 to \$34,999 .....	.8	563	51.5	393	7.64	.4	937	85.6	593	13.04
\$35,000 or More .....	.3	819	74.8	519	6.94	.2	985	90.0	621	10.80
Below 100 Percent of Poverty Line .....	.3	595	54.3	415	7.64	.2	878	80.2	594	12.44
Below 125 Percent of Poverty Line .....	.6	539	49.3	393	7.97	.3	877	80.1	614	10.28
Assistance for Heating in Winter										
Yes .....	.2	716	65.4	484	7.39	.2	942	86.1	624	14.96
No	2.0	620	56.7	431	7.60	1.2	905	82.6	599	7.07
Age of Householder										
Under 35 Years .....	.6	616	56.2	427	7.60	.3	907	82.8	591	9.95
35 to 59 Years .....	.9	625	57.1	421	7.37	.5	953	87.1	610	10.39
60 Years and Over .....	.8	649	59.3	462	7.79	.5	872	79.6	602	11.18

See footnotes at end of table.

Table 23. Liquefied Petroleum Gas Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	2.355	1.081	1.081	0.950	0.503	2.396	0.632	0.632	0.795	
Household Size										
1 Person	0.3	726	66.3	506	7.63	0.3	858	78.4	597	12.96
2 to 4 Persons	1.6	631	57.6	434	7.53	.9	939	85.7	610	7.60
5 or More Persons .....	.4	536	49.0	380	7.75	.2	853	77.9	571	13.14
Secondary Heating										
Yes	1.3	625	57.1	440	7.71	.7	919	83.9	612	10.06
No .....	.9	639	58.3	431	7.39	.6	899	82.1	591	8.26
Hot Water Fuel										
Natural Gas	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Electricity	1.1	462	42.2	345	8.19	.5	808	73.8	579	10.56
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	1.1	817	74.6	537	7.20	.8	975	89.1	617	7.40
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	Q	613	56.0	448	8.00	.6	887	81.0	617	12.91
5,500 to 7,000 HDD .....	.7	619	56.5	438	7.74	.4	963	88.0	650	11.92
4,000 to 5,499 HDD .....	.5	678	62.0	413	6.66	.3	884	80.7	519	8.97
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Midwest

East North Central

Liquefied Petroleum Gas

Table 23. Liquefied Petroleum Gas Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	2.355	1.081	1.081	0.950	0.503	2.396	0.632	0.632	0.795	
East North Central Division	1.5	608	55.5	454	8.18	0.9	906	82.8	650	9.51
Metropolitan Status										
Metropolitan .....	.6	617	56.4	458	8.11	.4	878	80.2	635	13.72
Central City	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Outside Central City .....	.6	636	58.1	464	7.99	.3	944	86.2	670	12.81
Nonmetropolitan .....	.9	601	54.9	451	8.22	Q	928	84.8	662	12.87
LPG Paid by Household										
Yes	1.5	608	55.5	454	8.18	.9	906	82.8	650	9.51
No	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Housing Structure										
Mobile Home .....	.3	549	50.1	416	8.30	.3	682	62.3	514	18.23
Single Family	1.2	635	58.0	472	8.14	.6	1,002	91.5	708	9.55
Building of 2 or More Units	Q	Q	Q	Q	Q	NC	NC	NC	NC	e
Number of Rooms										
1 to 3	Q	536	48.9	442	9.03	Q	Q	Q	Q	10.73
4 to 5 .....	.8	562	51.3	426	8.29	.4	842	76.9	614	13.98
6 or More .....	.5	701	64.0	499	7.80	.3	1,067	97.4	731	12.09
Measured Heated Area of Residence (square feet)										
Fewer than 1,000 .....	.4	506	46.2	382	8.26	.3	746	68.1	537	13.71
1,000 to 1,999 .....	.7	576	52.6	452	8.59	.4	866	79.1	656	13.82
2,000 or More .....	.3	802	73.2	549	7.50	.2	1,144	104.4	762	14.92
Year of Construction										
1949 or Before .....	.5	594	54.3	431	7.93	.2	1,048	95.7	691	16.97
1950 to 1974 .....	.6	638	58.2	489	8.39	.4	861	78.7	652	18.73
1975 or After .....	.4	586	53.5	437	8.17	.3	851	77.8	612	16.13
Status of Unit										
Owned	1.3	620	56.6	460	8.13	.8	923	84.3	656	9.79
Rented .....	.2	513	46.8	404	8.64	Q	Q	Q	Q	23.04
1987 Family Income										
Less than \$10,000 .....	.3	542	49.5	433	8.75	.2	817	74.6	633	17.20
\$10,000 to \$19,999	Q	625	57.1	476	8.34	Q	872	79.7	642	16.42
\$20,000 to \$34,999 .....	.5	512	46.7	380	8.14	.2	886	81.0	600	23.31
\$35,000 or More .....	.2	983	89.8	662	7.38	Q	Q	Q	Q	13.12
Below 100 Percent of Poverty Line .....	.2	595	54.3	472	8.69	Q	Q	Q	Q	23.61
Below 125 Percent of Poverty Line .....	.4	514	46.9	420	8.95	.2	865	79.0	679	14.74
Assistance for Heating in Winter										
Yes	Q	694	63.3	523	8.25	Q	Q	Q	Q	26.34
No	1.4	598	54.6	446	8.17	.7	910	83.1	650	10.38
Age of Householder										
Under 35 Years .....	.4	560	51.1	417	8.17	.2	903	82.4	639	14.58
35 to 59 Years .....	.6	603	55.0	432	7.85	.3	940	85.8	642	16.51
60 Years and Over .....	.5	649	59.3	504	8.50	.4	878	80.2	663	15.78

See footnotes at end of table.

Table 23. Liquefied Petroleum Gas Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	2.355	1.081	1.081	0.950	0.503	2.396	0.632	0.632	0.795	
Household Size										
1 Person	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
2 to 4 Persons	1.1	609	55.6	450	8.09	0.6	939	85.8	658	10.82
5 or More Persons .....	.3	516	47.2	389	8.26	Q	Q	Q	Q	15.24
Secondary Heating										
Yes .....	.9	612	55.9	456	8.17	.5	902	82.4	640	15.00
No .....	.6	602	55.0	450	8.19	.4	912	83.3	664	11.18
Hot Water Fuel										
Natural Gas	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Electricity .....	.8	459	42.0	362	8.63	.4	847	77.3	641	12.85
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other .....	.7	813	74.3	582	7.84	.5	952	87.0	657	10.53
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	Q	626	57.2	473	8.27	Q	913	83.4	657	20.43
5,500 to 7,000 HDD .....	.5	523	47.7	426	8.93	.3	890	81.2	697	16.36
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

See footnotes at end of table.

Table 23. Liquefied Petroleum Gas Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	2.355	1.081	1.081	0.950	0.503	2.396	0.632	0.632	0.795	
West North Central Division	0.8	675	61.6	402	6.52	0.5	915	83.6	515	6.55
Metropolitan Status										
Metropolitan .....	.1	478	43.7	344	7.88	Q	Q	Q	Q	15.89
Central City	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Outside Central City .....	.1	490	44.7	344	7.69	Q	Q	Q	Q	19.28
Nonmetropolitan .....	.6	718	65.5	414	6.32	.4	943	86.1	524	7.49
LPG Paid by Household										
Yes .....	.7	670	61.2	396	6.47	.5	912	83.3	510	6.52
No	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Housing Structure										
Mobile Home	Q	715	65.3	484	7.40	Q	710	64.8	483	18.29
Single Family .....	.6	672	61.4	387	6.31	.4	965	88.1	523	7.82
Building of 2 or More Units	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Number of Rooms										
1 to 3	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
4 to 5 .....	.3	718	65.5	434	6.63	.2	922	84.2	532	13.34
6 or More .....	.4	679	62.0	387	6.24	.2	967	88.3	511	12.77
Measured Heated Area of Residence (square feet)										
Fewer than 1,000 .....	.2	612	55.9	404	7.23	.2	717	65.4	457	10.97
1,000 to 1,999 .....	.3	689	62.9	385	6.12	.2	1,006	91.9	535	11.03
2,000 or More .....	.2	718	65.6	425	6.48	.1	1,031	94.1	560	13.12
Year of Construction										
1949 or Before .....	.3	675	61.7	364	5.91	.2	996	91.0	484	11.40
1950 to 1974 .....	.3	722	65.9	445	6.74	.2	886	80.9	542	11.19
1975 or After .....	.2	584	53.4	390	7.31	.1	808	73.8	511	14.51
Status of Unit										
Owned .....	.7	635	58.0	388	6.69	.4	878	80.2	508	7.01
Rented .....	.1	945	86.3	496	5.75	.1	1,098	100.3	548	16.31
1987 Family Income										
Less than \$10,000 .....	.2	572	52.3	347	6.64	.1	828	75.7	484	17.11
\$10,000 to \$19,999 .....	.1	892	81.5	511	6.27	.1	1,036	94.6	581	16.53
\$20,000 to \$34,999 .....	.3	672	61.4	420	6.84	.1	1,024	93.5	581	12.13
\$35,000 or More .....	.1	616	56.3	341	6.07	.1	724	66.2	373	17.88
Below 100 Percent of Poverty Line .....	.2	594	54.2	342	6.31	.1	831	75.9	469	16.17
Below 125 Percent of Poverty Line .....	.2	585	53.4	346	6.47	.1	898	82.0	508	16.02
Assistance for Heating in Winter										
Yes .....	.1	759	69.3	411	5.94	Q	Q	Q	Q	19.85
No .....	.7	664	60.7	401	6.60	.4	896	81.8	510	6.60
Age of Householder										
Under 35 Years .....	.2	715	65.3	445	6.82	.2	911	83.2	538	16.24
35 to 59 Years .....	.3	665	60.7	400	6.59	.2	982	89.7	543	7.79
60 Years and Over .....	.2	648	59.1	360	6.09	.2	857	78.3	467	11.13

See footnotes at end of table.

Table 23. Liquefied Petroleum Gas Consumption and Expenditures for Midwest Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	2.355	1.081	1.081	0.950	0.503	2.396	0.632	0.632	0.795	
Household Size										
1 Person	0.2	696	63.6	431	6.78	0.1	843	76.9	515	14.63
2 to 4 Persons .....	.5	678	61.9	399	6.45	.3	937	85.6	519	7.46
5 or More Persons .....	.1	602	55.0	346	6.30	Q	Q	Q	Q	17.98
Secondary Heating										
Yes .....	.4	653	59.6	404	6.78	.2	956	87.3	550	9.50
No .....	.3	702	64.1	399	6.22	.3	879	80.3	484	10.08
Hot Water Fuel										
Natural Gas	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Electricity .....	.3	468	42.8	300	7.00	.1	712	65.0	424	15.37
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other .....	.5	821	75.0	471	6.28	.3	1,009	92.2	557	9.23
Climate Zone										
Under 2,000 CDD and--										
Ove. 7,000 HDD .....	.2	555	50.7	340	6.71	.1	777	71.0	443	16.14
5,500 to 7,000 HDD .....	.2	873	79.8	468	5.87	.1	1,113	101.6	555	11.56
4,000 to 5,499 HDD .....	.4	634	57.9	399	6.90	.2	867	79.2	526	8.90
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --										
Under 4,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 24. Wood Consumption for Midwest Region Households for Year Ending November 1987

Household Characteristics	Households Burning Wood		Cords Burned		Cords Burned per Household	RSE Row Factors
	(million)	(percent)	(million)	(percent)		
RSE Column Factors	0.792	0.855	1.548	1.112	1.129	
Midwest Region	5.2	100.0	12.5	100.0	2.4	13.14
Census Division						
East North Central	3.7	72.6	9.4	75.3	2.5	12.68
West North Central	1.4	27.4	3.1	24.7	2.2	14.68
Metropolitan Status						
Metropolitan	3.4	66.1	7.5	59.9	2.2	15.23
Central City .....	.8	15.7	1.0	8.0	1.2	25.59
Outside Central City	2.6	50.4	6.5	52.0	2.5	19.02
Nonmetropolitan	1.7	33.9	5.0	40.1	2.9	16.63
Measured Heated Area of Residence (square feet)						
Fewer than 1,000 .....	.6	10.7	.8	6.4	4.4	37.69
1,000 to 1,999	1.8	35.1	4.2	33.8	2.3	17.08
2,000 or More	2.8	54.2	5.8	46.9	2.1	13.61
1987 Family Income						
Less than \$10,000 .....	.4	7.0	.8	6.7	2.3	26.09
\$10,000 to \$19,999	1.0	20.3	3.9	30.9	3.7	21.06
\$20,000 to \$34,999	1.5	28.3	5.0	40.3	3.4	14.98
\$35,000 or More	2.3	44.3	2.7	22.0	1.2	14.63
Assistance for Heating in Winter						
Yes .....	.8	15.4	.4	3.1	2.5	38.03
No	5.0	96.9	12.1	96.9	2.4	5.97
Amount of Wood Burned						
Less than 2 Cords	3.1	61.0	1.4	11.0	.4	10.50
2 to 4 Cords	1.0	18.8	2.6	21.1	2.7	15.37
More than 4 Cords	1.0	20.2	8.5	67.9	8.1	21.66
Wood is Main Heating Fuel						
Yes	1.3	25.7	7.3	58.4	5.5	15.79
No	3.8	74.3	5.2	41.6	1.4	12.40
Year of Construction						
1949 or Before	1.7	33.6	5.4	43.0	3.1	13.15
1950 to 1974	2.0	39.3	3.0	24.2	1.5	15.91
1975 or After	1.4	27.1	4.1	32.8	2.9	19.66
Climate Zone						
Under 2,000 CDD and--						
Over 7,000 HDD	1.7	33.5	7.1	57.1	4.1	29.47
5,500 to 7,000 HDD	2.7	51.5	3.9	31.3	1.5	18.98
4,000 to 5,499 HDD .....	.8	15.0	1.4	11.6	1.9	22.18
Under 4,000 HDD	NC	NC	NC	NC	NC	NC
2,000 CDD or More and --						
Under 4,000 HDD	NC	NC	NC	NC	NC	NC

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Percentages are calculated on unrounded numbers. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 25. Energy Consumption and Expenditures for South Region Households, 1987

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Flow Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
South Region	30.9	2.61	33.4	1.09	6.1	1.22	25.1	0.17	1.1	0.12	1.1	6.30
Metropolitan Status												
Metropolitan	22.1	1.90	24.2	.89	4.9	.88	18.3	.07	.5	.06	.6	7.92
Central City	9.4	.81	9.2	.44	2.2	.33	6.6	.04	.2	.01	.2	9.87
Outside Central City	12.7	1.08	15.0	.45	2.7	.55	11.7	.04	.2	.05	.4	10.91
Nonmetropolitan	8.8	.71	9.2	.21	1.2	.34	6.9	.10	.6	.06	.6	10.13
Payment Method for Utilities												
All Paid by Household	27.6	2.38	31.0	.96	5.3	1.14	23.5	.16	1.0	.12	1.1	6.59
Some or None Paid by Household, Other Method	3.3	.23	2.4	.13	.7	.08	1.6	.01	.1	Q	Q	19.90
Housing Structure												
Mobile Home	2.2	.14	2.2	.01	.1	.08	1.7	.02	.1	.02	.3	20.73
Single Family	22.2	2.09	26.3	.91	5.0	.95	19.6	.14	.9	.09	.9	8.24
Building of 2 or More Units	6.4	.37	4.9	.17	1.0	.19	3.8	.01	.1	NC	NC	17.50
Number of Rooms												
1 to 3	3.9	.20	2.6	.08	.4	.10	2.1	.01	.1	.01	.1	19.40
4 to 5	14.5	1.07	13.9	.42	2.3	.50	10.4	.08	.5	.07	.7	7.87
6 or More	12.5	1.34	16.9	.59	3.3	.62	12.7	.08	.5	.04	.4	9.76
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	11.7	.76	9.8	.33	1.9	.33	7.1	.05	.3	.04	.5	9.48
1,000 to 1,999	14.3	1.21	16.2	.44	2.5	.62	12.6	.08	.5	.07	.6	7.99
2,000 or More	4.9	.63	7.5	.32	1.7	.27	5.4	.04	.2	Q	Q	17.42
Year of Construction												
1949 or Before	6.8	.64	6.9	.33	1.9	.20	4.2	.08	.5	.03	.3	13.49
1950 to 1974	14.3	1.28	15.6	.61	3.3	.55	11.3	.08	.5	.04	.4	9.09
1975 or After	9.7	.68	10.9	.15	.8	.46	9.6	.02	.1	.05	.4	15.12
Status of Unit												
Owned	20.4	1.89	24.5	.77	4.2	.90	18.6	.12	.8	.10	.9	8.63
Rented	10.5	.72	8.9	.33	1.8	.31	6.5	.05	.3	.02	.2	11.51
1987 Family Income												
Less than \$10,000	7.2	.50	6.0	.23	1.3	.19	4.1	.04	.3	.04	.3	14.07
\$10,000 to \$19,999	7.9	.58	7.3	.24	1.3	.25	5.2	.05	.3	.04	.4	10.34
\$20,000 to \$34,999	8.2	.73	9.5	.29	1.6	.37	7.4	.05	.3	.02	.2	11.33
\$35,000 or More	7.6	.80	10.7	.34	1.9	.41	8.4	.03	.2	.02	.2	12.28
Below 100 Percent of Poverty Line												
Below 100 Percent of Poverty Line	5.6	.40	4.8	.18	1.0	.15	3.2	.03	.2	.04	.4	16.23
Below 125 Percent of Poverty Line												
Below 125 Percent of Poverty Line	7.7	.56	6.7	.26	1.5	.22	4.6	.04	.2	.05	.4	13.65
Assistance for Heating in Winter												
Yes	1.6	.12	1.4	.05	.3	.04	.9	.01	.1	Q	.2	26.63
No	29.3	2.49	32.0	1.04	5.8	1.18	24.2	.16	1.0	.10	1.0	6.32
Age of Householder												
Under 35 Years	9.5	.70	9.2	.29	1.6	.35	7.1	.04	.2	.03	.3	9.39
35 to 59 Years	13.4	1.22	16.1	.49	2.6	.61	12.5	.07	.5	.06	.5	8.09
60 Years and Over	8.1	.68	8.1	.32	1.8	.26	5.5	.06	.4	.04	.4	11.47

See footnotes at end of table.

Table 25. Energy Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.555	0.649	0.594	1.075	1.033	0.651	0.650	1.583	1.540	2.080	1.960	
Household Size												
1 Person	7.1	0.46	5.5	0.23	1.3	0.18	3.8	0.03	0.2	0.02	0.2	13.14
2 to 4 Persons	21.1	1.87	24.5	.76	4.2	.91	18.8	.13	.8	.08	.8	6.41
5 or More Persons	2.7	.27	3.4	.11	.6	.13	2.6	.01	.1	.01	.1	16.00
Secondary Heating												
Yes	13.8	1.25	16.5	.46	2.5	.62	12.6	.12	.7	.06	.6	9.52
No	17.1	1.35	16.9	.64	3.5	.60	12.5	.05	.3	.06	.5	8.51
Hot Water Fuel												
Natural Gas	12.6	1.36	13.4	.96	5.2	.38	8.0	.02	.1	NC	NC	12.28
Electricity	16.7	1.12	18.4	.14	.8	.79	16.1	.13	.8	.07	.7	10.27
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	NC	NC	a
Other	1.5	.10	1.4	Q	Q	.04	.9	Q	Q	.05	.5	30.61
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	Q	NC	NC	Q	Q	Q	Q	Q	Q	a
4,000 to 5,499 HDD	8.2	.82	8.7	.40	2.1	.30	5.7	.10	.6	.02	.2	23.34
Under 4,000 HDD	8.4	.70	9.3	.25	1.6	.33	6.8	.05	.3	.06	.5	21.33
2,000 CDD or More and --												
Under 4,000 HDD	14.2	1.07	15.3	.44	2.4	.58	12.5	Q	Q	.04	.4	14.36

See footnotes at end of table.

Table 25. Energy Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors	0.955	0.649	0.594	1.075	1.033	0.651	0.650	1.583	1.540	2.080	1.960	
South Atlantic Division	15.6	1.26	17.6	0.45	2.9	0.61	13.1	0.15	0.9	0.06	0.6	9.20
Metropolitan Status												
Metropolitan	11.9	.97	13.6	.40	2.6	.47	10.2	.07	.4	.03	.4	11.00
Central City	4.1	.34	4.3	.15	1.0	.14	2.9	.04	.2	.01	.2	16.02
Outside Central City	7.7	.63	9.3	.24	1.6	.33	7.3	.03	.2	.02	.2	17.50
Nonmetropolitan	3.7	.29	3.9	.05	.3	.14	2.8	.08	.5	Q	.2	14.45
Payment Method for Utilities												
All Paid by Household	13.9	1.14	16.3	.37	2.4	.57	12.4	.13	.8	.06	.6	9.95
Some or None Paid by Household, Other Method	1.7	.13	1.3	.08	.5	.03	.7	.01	.1	Q	Q	18.31
Housing Structure												
Mobile Home	1.5	.09	1.4	Q	Q	.05	1.0	.02	.1	.02	.2	23.97
Single Family	10.8	.97	13.5	.34	2.2	.47	10.1	.11	.7	.04	.4	11.90
Building of 2 or More Units	3.3	.21	2.7	.10	.7	.09	1.9	.01	.1	NC	NC	20.29
Number of Rooms												
1 to 3	2.0	.10	1.4	.04	.3	.05	1.1	.01	.1	*	*	26.93
4 to 5	7.0	.48	6.9	.15	1.0	.23	5.1	.06	.4	.03	.4	12.16
6 or More	6.6	.68	9.3	.26	1.7	.33	6.9	.07	.4	.02	.2	13.68
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	5.9	.37	5.2	.13	.9	.17	3.7	.04	.3	.02	.3	12.59
1,000 to 1,999	7.1	.56	8.2	.17	1.1	.30	6.4	.07	.4	.02	.3	11.62
2,000 or More	2.7	.33	4.2	.15	1.0	.14	3.0	.03	.2	Q	Q	22.16
Year of Construction												
1949 or Before	4.1	.38	4.4	.17	1.1	.12	2.6	.07	.4	.02	.2	17.46
1950 to 1974	6.5	.55	7.5	.22	1.4	.25	5.4	.07	.4	.02	.2	13.00
1975 or After	5.0	.33	5.7	.06	.4	.23	5.0	.01	.1	.02	.2	21.88
Status of Unit												
Owned	10.2	.89	12.7	.30	1.9	.45	9.6	.10	.6	.05	.5	12.98
Rented	5.4	.37	4.9	.16	1.0	.16	3.5	.05	.3	.01	.1	14.60
1987 Family Income												
Less than \$10,000	3.2	.22	2.8	.08	.5	.09	1.9	.04	.2	.02	.2	22.40
\$10,000 to \$19,999	4.0	.27	3.7	.09	.6	.12	2.6	.04	.3	.02	.2	13.85
\$20,000 to \$34,999	3.9	.32	4.5	.11	.7	.16	3.4	.04	.2	.01	.1	16.30
\$35,000 or More	4.5	.45	6.5	.17	1.1	.24	5.1	.03	.2	.01	.1	17.34
Below 100 Percent of Poverty Line	2.5	.17	2.3	.07	.4	.07	1.5	.02	.2	.01	.2	24.89
Below 125 Percent of Poverty Line	3.3	.23	3.0	.09	.6	.09	2.0	.03	.2	.02	.2	20.96
Assistance for Heating in Winter												
Yes .....	.7	.05	.6	.02	.1	.02	.4	.01	*	Q	Q	39.40
No	14.9	1.21	16.9	.43	2.8	.59	12.7	.14	.9	.05	.6	9.06
Age of Householder												
Under 35 Years	4.7	.33	4.8	.11	.7	.17	3.7	.03	.2	.02	.2	13.99
35 to 59 Years	6.8	.58	8.4	.20	1.3	.30	6.5	.06	.4	.02	.3	12.14
60 Years and Over	4.0	.35	4.4	.14	.9	.13	2.9	.05	.3	.02	.2	16.90

See footnotes at end of table.

South

Table 25. Energy Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.555	0.649	0.594	1.075	1.033	0.651	0.650	1.583	1.540	2.080	1.960	
Household Size												
1 Person	3.6	0.24	2.9	0.11	0.7	0.09	1.9	0.03	0.2	0.01	0.1	20.66
2 to 4 Persons	10.6	.89	12.8	.30	1.9	.45	9.8	.10	.6	.04	.5	10.12
5 or More Persons	1.4	.13	1.9	.05	.3	.07	1.4	.01	.1	*	Q	21.50
Secondary Heating												
Yes	7.1	.62	8.8	.18	1.2	.31	6.6	.10	.6	.04	.4	13.74
No	8.4	.64	8.8	.27	1.8	.30	6.5	.05	.3	.02	.3	12.90
Hot Water Fuel												
Natural Gas	4.6	.52	5.1	.37	2.4	.12	2.5	.02	.1	NC	NC	21.51
Electricity	10.1	.68	11.6	.08	.5	.46	10.0	.11	.7	.04	.4	14.14
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	NC	NC	a
Other .....	.8	.05	.8	Q	Q	.02	.5	*	Q	.02	.2	26.71
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	Q	NC	NC	Q	Q	Q	Q	Q	Q	a
4,000 to 5,499 HDD	5.1	.51	5.6	.24	1.6	.18	3.5	.08	.5	Q	Q	27.47
Under 4,000 HDD	5.4	.47	6.3	.18	1.2	.21	4.5	.05	.3	.03	.3	25.22
2,000 CDD or More and --												
Under 4,000 HDD	4.9	.26	5.4	.03	.2	.21	5.0	Q	Q	.02	.2	17.74

See footnotes at end of table.

South Atlantic

Aggregates

Table 25. Energy Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors	0.585	0.640	0.594	1.075	1.092	0.651	0.650	1.583	1.540	2.080	1.960	
East South Central Division	6.1	0.51	6.0	0.19	0.9	0.27	4.7	0.03	0.2	0.03	0.3	12.36
Metropolitan Status												
Metropolitan	3.4	.30	3.5	.13	.6	.15	2.7	Q	Q	.01	.1	14.29
Central City	1.7	.14	1.5	.07	.3	.07	1.2	*	*	NC	NC	21.27
Outside Central City	1.7	.16	1.9	.06	.3	.08	1.5	Q	Q	.01	.1	31.47
Nonmetropolitan	2.7	.21	2.6	.06	.3	.11	2.0	.02	.1	.02	.2	17.75
Payment Method for Utilities												
All Paid by Household	5.6	.48	5.7	.17	.8	.25	4.4	.03	.2	.03	.3	13.31
Some or None Paid by Household, Other Method .....	.5	.03	.3	.02	.1	.01	.2	Q	Q	NC	NC	45.31
Housing Structure												
Mobile Home .....	.4	.03	.4	Q	Q	.02	.3	Q	Q	.01	.1	38.04
Single Family	4.5	.41	4.8	.16	.8	.21	3.7	.02	.1	.03	.2	17.19
Building of 2 or More Units	1.2	.07	.8	.03	.2	.04	.6	Q	Q	NC	NC	42.79
Number of Rooms												
1 to 3 .....	.8	.04	.5	.02	.1	.02	.4	*	*	Q	Q	35.62
4 to 5	2.9	.21	2.6	.06	.3	.12	2.0	.02	.1	.02	.1	14.20
6 or More	2.4	.26	2.9	.11	.5	.13	2.2	Q	.1	.01	.1	16.89
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	2.2	.15	1.7	.06	.3	.07	1.2	.01	*	.01	.1	19.63
1,000 to 1,999	2.9	.24	3.1	.06	.3	.14	2.5	.01	.1	.02	.2	14.18
2,000 or More	1.0	.13	1.3	.06	.3	.06	1.0	Q	Q	Q	Q	42.90
Year of Construction												
1949 or Before	1.2	.12	1.2	.07	.3	.04	.7	Q	Q	Q	Q	33.57
1950 to 1974	3.3	.28	3.2	.11	.5	.14	2.4	.02	.1	.02	.2	14.94
1975 or After	1.6	.11	1.6	.02	.1	.09	1.5	*	*	.01	.1	19.22
Status of Unit												
Owned	4.2	.39	4.7	.14	.7	.21	3.6	.02	.1	.03	.3	17.97
Rented	1.9	.12	1.4	.05	.3	.06	1.1	.01	*	*	*	25.56
1987 Family Income												
Less than \$10,000	1.6	.11	1.2	.04	.2	.05	.8	.01	*	.01	.1	23.87
\$10,000 to \$19,999	1.6	.13	1.4	.05	.2	.06	1.1	Q	Q	.01	.1	15.34
\$20,000 to \$34,999	1.8	.15	1.9	.05	.2	.09	1.5	Q	Q	.01	.1	16.44
\$35,000 or More	1.1	.13	1.5	.05	.2	.07	1.2	Q	Q	Q	Q	18.37
Below 100 Percent of Poverty Line	1.2	.08	.9	.03	.2	.03	.6	Q	Q	.01	.1	25.61
Below 125 Percent of Poverty Line	1.6	.12	1.3	.05	.2	.05	.9	.01	*	.01	.1	26.81
Assistance for Heating in Winter												
Yes .....	.3	.02	.2	Q	Q	.01	.2	Q	Q	*	*	24.61
No	5.8	.49	5.8	.18	.9	.26	4.5	.02	.2	.03	.3	12.85
Age of Householder												
Under 35 Years	1.8	.13	1.6	.05	.2	.07	1.3	Q	Q	.01	*	13.58
35 to 59 Years	2.6	.24	2.9	.08	.4	.13	2.3	.01	.1	.02	.1	16.10
60 Years and Over	1.8	.14	1.5	.06	.3	.06	1.0	.01	.1	.01	.1	14.73

See footnotes at end of table.

South

Table 25. Energy Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.555	0.649	0.594	1.075	1.033	0.651	0.650	1.583	1.540	2.080	1.960	
Household Size												
1 Person	1.6	0.10	1.1	0.05	0.2	0.04	0.8	Q	Q	0.01	*	14.62
2 to 4 Persons	4.1	.37	4.4	.13	.6	.20	3.4	0.02	0.1	.02	0.2	14.18
5 or More Persons .....	.4	.04	.6	.01	.1	.03	.5	Q	Q	Q	Q	28.58
Secondary Heating												
Yes	2.6	.23	2.9	.06	.3	.13	2.3	.02	.1	.01	.1	18.33
No	3.4	.28	3.1	.13	.6	.13	2.3	Q	Q	.02	.2	12.43
Hot Water Fuel												
Natural Gas	1.8	.21	1.7	.15	.7	.05	1.0	Q	Q	NC	NC	17.83
Electricity	4.1	.29	4.1	.04	.2	.21	3.6	.02	.1	.02	.2	16.87
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other .....	.2	.02	.2	NC	NC	*	.1	Q	Q	.01	.1	35.48
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	2.5	.23	2.5	Q	Q	.11	1.9	Q	.1	.01	.1	40.83
Under 4,000 HDD	2.1	.15	2.2	Q	Q	.10	1.8	Q	Q	.02	.1	35.16
2,000 CDD or More and --												
Under 4,000 HDD	1.5	.13	1.4	Q	Q	Q	Q	Q	Q	Q	Q	82.03

See footnotes at end of table.

East South Central

Aggregates

Table 25. Energy Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors	0.555	0.649	0.594	1.075	1.033	0.651	0.650	1.583	1.540	2.080	1.960	
West South Central Division	9.2	0.83	9.8	0.45	2.2	0.35	7.4	Q	Q	Q	Q	10.23
Metropolitan Status												
Metropolitan	6.9	.63	7.1	.36	1.6	.25	5.3	Q	Q	Q	Q	12.36
Central City	3.6	.33	3.3	.21	.9	.12	2.4	Q	Q	NC	NC	15.66
Outside Central City	3.3	.30	3.7	.15	.7	.13	2.9	NC	NC	Q	Q	27.59
Nonmetropolitan	2.4	.20	2.7	.09	.6	.09	2.1	Q	Q	Q	Q	15.23
Payment Method for Utilities												
All Paid by Household	8.1	.76	8.9	.42	2.0	.31	6.7	Q	Q	Q	Q	13.42
Some or None Paid by Household, Other Method	1.2	.07	.9	.03	.1	.03	.7	NC	NC	NC	NC	40.17
Housing Structure												
Mobile Home	.4	.03	.4	.01	*	.02	.4	NC	NC	Q	Q	50.54
Single Family	6.9	.71	7.9	.41	2.0	.27	5.8	Q	Q	Q	Q	14.78
Building of 2 or More Units	2.0	.10	1.4	.04	.2	.06	1.2	Q	Q	NC	NC	31.83
Number of Rooms												
1 to 3	1.1	.05	.7	.02	.1	.03	.6	NC	NC	NC	NC	39.76
4 to 5	4.7	.38	4.4	.21	1.0	.15	3.2	Q	Q	Q	Q	9.23
6 or More	3.5	.40	4.7	.22	1.1	.17	3.5	Q	Q	Q	Q	22.27
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	3.6	.24	2.9	.14	.7	.10	2.2	Q	Q	Q	Q	15.21
1,000 to 1,999	4.4	.41	4.9	.21	1.0	.17	3.7	Q	Q	Q	Q	12.67
2,000 or More	1.2	.18	2.0	.10	.5	.07	1.5	Q	Q	Q	Q	39.23
Year of Construction												
1949 or Before	1.5	.14	1.4	.09	.5	.04	.9	NC	NC	Q	Q	16.15
1950 to 1974	4.5	.45	4.9	.29	1.4	.16	3.5	Q	Q	Q	Q	14.67
1975 or After	3.2	.24	3.6	.08	.4	.15	3.1	Q	Q	Q	Q	29.77
Status of Unit												
Owned	5.9	.61	7.2	.33	1.6	.25	5.4	Q	Q	Q	0.2	18.26
Rented	3.3	.22	2.6	.12	.6	.10	2.0	Q	Q	Q	Q	20.24
1987 Family Income												
Less than \$10,000	2.4	.17	1.9	.10	.5	.06	1.3	NC	NC	Q	Q	14.96
\$10,000 to \$19,999	2.3	.19	2.1	.10	.5	.07	1.5	Q	Q	Q	Q	15.52
\$20,000 to \$34,999	2.6	.25	3.1	.13	.6	.12	2.4	Q	Q	Q	Q	19.58
\$35,000 or More	2.0	.22	2.7	.12	.5	.10	2.1	Q	Q	Q	Q	21.66
Below 100 Percent of Poverty Line	1.9	.15	1.6	.08	.4	.05	1.1	NC	NC	Q	Q	18.88
Below 125 Percent of Poverty Line	2.8	.22	2.4	.12	.6	.08	1.7	Q	Q	Q	Q	15.91
Assistance for Heating in Winter												
Yes	.6	.05	.5	.03	.1	.01	.3	NC	NC	Q	Q	49.39
No	8.6	.78	9.3	.43	2.0	.33	7.1	Q	Q	Q	Q	10.96
Age of Householder												
Under 35 Years	3.0	.24	2.8	.13	.6	.10	2.2	NC	NC	Q	Q	15.56
35 to 59 Years	4.0	.40	4.8	.21	1.0	.17	3.6	Q	Q	Q	Q	10.33
60 Years and Over	2.3	.19	2.2	.11	.6	.07	1.6	NC	NC	Q	Q	20.95

See footnotes at end of table.

Table 25. Energy Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels		Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors	
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)		Total Expenditures (billion dollars)
RSE Column Factors:	0.555	0.649	0.594	1.075	1.039	0.651	0.650	1.583	1.540	2.060	1.960	
Household Size												
1 Person	2.0	0.13	1.5	0.07	0.3	0.05	1.1	Q	Q	Q	Q	21.88
2 to 4 Persons	6.4	.61	7.3	.33	1.6	.26	5.5	Q	Q	Q	Q	10.71
5 or More Persons .....	.9	.09	1.0	.05	.2	.03	.7	NC	NC	Q	Q	27.90
Secondary Heating												
Yes	4.1	.39	4.7	.21	1.0	.17	3.6	Q	Q	Q	0.1	18.69
No	5.2	.44	5.1	.24	1.2	.17	3.8	Q	Q	Q	Q	9.33
Hot Water Fuel												
Natural Gas	6.2	.64	6.6	.43	2.0	.21	4.5	Q	Q	NC	NC	14.81
Electricity	2.6	.15	2.8	.02	.1	.12	2.6	Q	Q	0.01	*	27.54
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	Q	Q	Q	Q	Q	Q	NC	NC	Q	Q	a
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Under 4,000 HDD	Q	Q	Q	Q	Q	Q	Q	NC	NC	Q	Q	a
2,000 CDD or More and --												
Under 4,000 HDD	7.8	.67	8.4	.35	1.8	.31	6.5	Q	Q	Q	Q	18.26

a No applicable RSE row factor.

NC No cases in sample.

* Data cannot be displayed due to rounding.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 26. Total Consumption per South Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987

Household Characteristics	Total Consumption in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors	0.797	0.510	1.262	0.474	1.679	0.872	1.943	0.867	2.578	1.068	
South Region	30.9	84.3	13.5	111.0	10.5	55.3	2.3	103.9	2.1	78.4	6.18
Metropolitan Status											
Metropolitan	22.1	85.8	10.7	113.7	8.4	53.6	1.1	101.9	1.1	71.6	7.92
Central City	9.4	86.3	5.0	113.2	3.4	49.3	.5	101.1	.3	65.8	11.03
Outside Central City	12.7	85.3	5.7	114.1	5.0	56.6	.6	102.7	.8	73.4	10.83
Nonmetropolitan	8.8	80.6	2.9	101.1	2.1	62.1	1.2	105.6	1.0	85.6	8.80
Payment Method for Utilities											
All Paid by Household	27.6	86.3	11.9	113.5	9.2	57.6	2.2	103.7	2.0	80.2	5.66
Some or None Paid by Household, Other Method	3.3	68.1	1.7	93.4	1.3	39.7	Q	Q	Q	Q	14.47
Housing Structure											
Mobile Home	2.2	63.4	.3	76.6	.8	52.3	.3	89.5	.7	60.1	12.76
Single Family	22.2	94.0	10.6	118.8	6.2	64.9	1.8	107.3	1.4	87.4	6.75
Building of 2 or More Units	6.4	58.0	2.6	83.2	3.6	39.2	Q	Q	NC	NC	10.16
Number of Rooms											
1 to 3	3.9	50.6	1.1	81.4	2.1	35.3	Q	Q	Q	45.5	15.08
4 to 5	14.5	73.8	6.1	94.4	4.6	51.4	1.3	91.4	1.5	71.0	6.25
6 or More	12.5	107.1	6.3	132.3	3.8	71.3	.9	122.2	.5	106.3	7.76
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	11.7	64.9	4.7	89.7	4.2	42.1	.8	86.8	1.1	58.2	7.36
1,000 to 1,999	14.3	84.5	6.1	106.4	4.9	58.8	1.2	100.6	.9	95.5	7.01
2,000 or More	4.9	130.5	2.8	157.5	1.5	81.6	.3	164.2	Q	Q	11.01
Year of Construction											
1949 or Before	6.8	94.3	3.8	111.1	.7	56.6	.8	123.2	.6	73.2	10.64
1950 to 1974	14.3	89.5	7.9	109.7	3.5	54.5	1.3	94.1	.8	75.4	7.23
1975 or After	9.7	69.7	1.8	116.3	6.3	55.6	.2	83.7	.7	85.8	12.77
Status of Unit											
Owned	20.4	92.7	9.0	120.1	6.3	64.4	1.6	106.1	1.7	84.0	6.68
Rented	10.5	68.0	4.6	93.2	4.2	41.5	.7	98.8	.5	57.8	8.99
1987 Family Income											
Less than \$10,000	7.2	69.6	3.3	89.8	1.8	42.3	.6	94.4	.7	61.0	10.51
\$10,000 to \$19,999	7.9	73.6	3.4	94.7	2.4	43.7	.7	101.6	.8	73.5	8.47
\$20,000 to \$34,999	8.2	88.6	3.3	120.5	3.1	57.7	.6	101.0	.4	96.7	8.45
\$35,000 or More	7.6	104.6	3.5	137.5	3.2	69.1	.3	132.2	.2	123.6	11.39
Below 100 Percent of Poverty Line	5.6	71.9	2.5	94.1	1.2	44.5	.5	81.7	.7	70.8	11.31
Below 125 Percent of Poverty Line	7.7	72.9	3.6	93.0	1.8	45.3	.6	84.5	.8	71.2	9.86
Assistance for Heating in Winter											
Yes	1.6	72.9	.7	87.2	.2	50.3	.2	78.5	.3	82.5	18.52
No	29.3	85.0	12.8	112.4	10.3	55.4	2.1	106.0	1.9	77.9	6.28

See footnotes at end of table.

Table 26. Total Consumption per South Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.737	0.510	1.262	0.474	1.679	0.572	1.943	0.867	2.578	1.068	
Age of Householder											
Under 35 Years	9.5	73.6	3.9	99.8	4.0	48.3	0.6	92.3	0.5	75.1	8.22
35 to 59 Years	13.4	91.6	5.6	123.1	4.7	63.2	.9	110.7	.9	82.1	6.94
60 Years and Over	8.1	84.8	4.1	105.1	1.9	50.5	.7	105.6	.7	75.9	10.02
Household Size											
1 Person	7.1	65.1	3.1	91.0	2.6	39.2	.5	86.0	.6	62.3	11.11
2 to 4 Persons	21.1	88.8	9.3	115.9	7.3	58.9	1.7	107.6	1.4	82.8	5.74
5 or More Persons	2.7	99.8	1.2	124.1	.7	77.9	.1	120.1	.2	92.3	11.35
Secondary Heating											
Yes	13.8	90.7	5.3	122.3	4.3	64.2	1.5	104.1	1.1	75.4	7.20
No	17.1	79.2	8.2	103.7	6.2	49.1	.8	103.4	1.0	81.5	7.71
Hot Water Fuel											
Natural Gas	12.6	108.3	11.3	113.3	1.1	49.1	Q	Q	NC	NC	11.56
Electricity	16.7	67.3	2.2	100.1	9.3	56.1	1.9	99.5	1.4	76.7	7.21
Fuel Oil or Kerosene	Q	Q	NC	NC	NC	NC	Q	Q	NC	NC	a
Other	1.5	68.4	Q	Q	Q	Q	Q	Q	.7	81.6	16.63
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	NC	NC	Q	Q	Q	Q	NC	NC	a
4,000 to 5,499 HDD	8.2	100.5	4.0	126.8	2.0	64.6	1.1	117.0	.3	90.4	11.81
Under 4,000 HDD	8.4	83.9	3.1	110.9	2.8	56.0	.8	94.2	.7	101.1	11.79
2,000 CDD or More and --											
Under 4,000 HDD	14.2	75.3	6.5	101.4	5.7	51.9	.3	68.9	1.0	58.6	12.56

See footnotes at end of table.

Table 26. Total Consumption per South Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.737	0.510	1.262	0.474	1.679	0.572	1.943	0.867	2.578	1.068	
South Atlantic Division	15.6	81.0	5.3	113.9	5.8	53.7	2.0	103.2	1.1	72.7	8.32
Metropolitan Status											
Metropolitan	11.9	81.4	4.5	117.0	5.1	53.4	1.0	99.5	.7	57.1	9.67
Central City	4.1	82.4	1.6	121.2	1.6	45.9	.5	100.5	.3	65.8	13.30
Outside Central City	7.7	80.9	2.9	114.6	3.5	56.7	.5	98.5	.5	52.5	13.92
Nonmetropolitan	3.7	79.6	.8	95.3	.7	56.0	1.0	106.8	Q	109.4	9.75
Payment Method for Utilities											
All Paid by Household	13.9	81.7	4.2	118.1	5.4	55.3	1.9	103.0	1.0	75.9	8.66
Some or None Paid by Household, Other Method	1.7	75.5	1.0	96.4	.4	28.9	Q	Q	Q	Q	13.95
Housing Structure											
Mobile Home	1.5	59.1	Q	Q	.5	43.2	.3	87.4	.5	54.3	15.56
Single Family	10.8	89.5	3.7	124.7	3.8	61.7	1.5	107.1	.6	88.5	9.86
Building of 2 or More Units	3.3	62.5	1.5	88.9	1.5	37.4	Q	Q	NC	NC	12.67
Number of Rooms											
1 to 3	2.0	51.9	.5	89.2	1.0	32.4	Q	Q	Q	Q	20.68
4 to 5	7.0	68.4	2.0	95.3	2.5	48.7	1.0	86.8	.7	64.5	9.24
6 or More	6.6	102.8	2.7	132.7	2.3	68.3	.8	121.6	.3	103.8	11.24
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	5.9	62.7	1.8	93.0	2.1	41.5	.7	85.3	.6	53.2	10.04
1,000 to 1,999	7.1	79.5	2.3	105.4	2.8	55.9	1.0	101.1	.3	92.8	10.45
2,000 or More	2.7	125.3	1.2	159.8	.9	76.8	.3	157.2	Q	Q	15.25
Year of Construction											
1949 or Before	4.1	93.8	1.9	114.0	.5	57.7	.8	120.3	.4	68.8	13.49
1950 to 1974	6.5	84.3	2.7	112.6	1.9	53.3	1.0	92.4	.3	67.1	11.32
1975 or After	5.0	66.0	.7	118.4	3.4	53.4	Q	Q	.4	82.2	16.47
Status of Unit											
Owned	10.2	87.2	3.2	123.9	3.8	60.2	1.4	105.4	.8	79.6	10.15
Rented	5.4	69.2	2.1	98.2	2.0	41.0	.6	98.3	.2	49.9	12.02
1987 Family Income											
Less than \$10,000	3.2	68.9	1.1	96.9	.9	38.6	.5	92.9	.3	61.2	16.38
\$10,000 to \$19,999	4.0	66.8	1.2	94.2	1.4	41.3	.6	100.3	.5	57.6	11.91
\$20,000 to \$34,999	3.9	83.7	1.2	117.8	1.5	55.3	.5	103.5	.2	94.3	12.24
\$35,000 or More	4.5	99.9	1.8	135.1	2.0	67.9	.3	126.3	Q	Q	13.24
Below 100 Percent of Poverty Line	2.5	69.9	.9	102.8	.6	38.6	.4	81.1	.3	63.3	17.77
Below 125 Percent of Poverty Line	3.3	69.3	1.2	99.8	.9	39.5	.5	83.0	.3	65.7	14.86
Assistance for Heating in Winter											
Yes .....	.7	71.0	.2	92.7	Q	46.8	.1	79.6	Q	Q	28.92
No	14.9	81.5	5.0	114.9	5.7	53.9	1.8	105.1	1.0	72.6	8.44

See footnotes at end of table.

South

South Atlantic

Averages

Table 26. Total Consumption per South Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.737	0.510	1.262	0.474	1.679	0.572	1.943	0.867	2.578	1.068	
Age of Householder											
Under 35 Years	4.7	69.7	1.5	99.8	2.0	46.1	0.6	92.4	0.3	76.2	11.47
35 to 59 Years	6.8	85.6	2.2	123.6	2.7	61.3	.7	110.6	.5	62.9	9.72
60 Years and Over	4.0	86.5	1.6	114.0	1.1	49.5	.6	104.3	.3	83.6	14.92
Household Size											
1 Person	3.6	66.3	1.4	94.7	1.3	37.5	.4	82.7	Q	Q	16.60
2 to 4 Persons	10.6	84.1	3.4	118.9	4.1	57.0	1.4	107.7	.7	76.4	8.92
5 or More Persons	1.4	95.3	.5	133.5	.4	72.9	.1	120.1	Q	Q	13.79
Secondary Heating											
Yes	7.1	87.6	2.0	128.1	2.3	63.6	1.2	102.3	.7	72.8	9.62
No	8.4	75.4	3.3	105.6	3.5	47.1	.7	104.7	.4	72.5	11.69
Hot Water Fuel											
Natural Gas	4.6	113.2	4.1	116.4	.3	38.8	Q	Q	NC	NC	18.58
Electricity	10.1	67.5	1.1	105.1	5.3	54.5	1.6	98.2	.8	71.4	10.65
Fuel Oil or Kerosene	Q	Q	NC	NC	NC	NC	Q	Q	NC	NC	a
Other .....	.8	58.6	Q	Q	Q	Q	Q	Q	Q	Q	22.59
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	NC	NC	Q	Q	Q	Q	NC	NC	a
4,000 to 5,499 HDD	5.1	100.8	2.5	124.1	1.1	62.9	.9	114.9	Q	Q	14.36
Under 4,000 HDD	5.4	87.5	2.1	115.3	1.6	53.7	.7	96.9	.3	103.9	16.30
2,000 CDD or More and --											
Under 4,000 HDD	4.9	53.6	Q	70.6	3.1	50.7	.3	64.7	.6	50.1	18.25

See footnotes at end of table.

Table 26. Total Consumption per South Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors	0.737	0.510	1.262	0.474	1.679	0.572	1.943	0.867	2.578	1.068	
East South Central Division	6.1	84.1	2.4	112.0	2.2	61.2	0.3	106.0	0.5	87.8	9.13
Metropolitan Status											
Metropolitan	3.4	89.3	1.7	110.9	1.3	61.1	Q	Q	.2	110.1	10.39
Central City	1.7	81.1	.9	103.2	.8	56.6	Q	Q	NC	NC	19.64
Outside Central City	1.7	97.7	.8	119.7	.5	68.5	Q	Q	.2	110.1	16.18
Nonmetropolitan	2.7	77.6	.7	114.7	.9	61.4	.2	99.8	.4	78.3	11.92
Payment Method for Utilities											
All Paid by Household	5.6	85.5	2.1	116.1	2.0	62.7	.3	106.0	.5	87.8	9.35
Some or None Paid by Household, Other Method .....	.5	66.6	.3	81.4	.2	45.3	NC	NC	NC	NC	27.87
Housing Structure											
Mobile Home .....	.4	68.9	Q	Q	.2	55.6	Q	Q	.1	75.1	13.34
Single Family	4.5	92.6	1.8	124.9	1.4	70.2	.3	106.1	.4	92.5	10.47
Building of 2 or More Units	1.2	57.6	.6	74.7	.6	41.3	NC	NC	NC	NC	18.48
Number of Rooms											
1 to 3 .....	.8	51.3	.3	73.0	.4	35.9	Q	Q	Q	Q	20.72
4 to 5	2.9	73.3	.9	95.6	1.1	57.6	.2	107.3	.3	76.6	10.49
6 or More	2.4	108.5	1.1	137.1	.8	77.3	Q	Q	.2	114.4	9.51
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	2.2	66.0	.9	87.0	.7	44.7	.1	86.8	.3	72.9	11.72
1,000 to 1,999	2.9	82.7	.9	111.6	1.2	63.6	.1	96.8	.3	103.4	10.55
2,000 or More	1.0	130.3	.6	154.1	.3	86.8	Q	Q	Q	Q	17.71
Year of Construction											
1949 or Before	1.2	101.2	.7	126.0	.1	66.1	Q	Q	Q	89.5	22.39
1950 to 1974	3.3	85.0	1.5	105.8	1.1	57.4	.2	98.3	.3	91.2	11.78
1975 or After	1.6	69.0	.2	109.9	1.0	64.6	Q	Q	.1	78.6	13.57
Status of Unit											
Owned	4.2	92.0	1.5	128.7	1.5	70.3	.2	108.0	.5	90.4	10.76
Rented	1.9	66.0	.9	83.6	.8	43.6	Q	Q	Q	Q	12.11
1987 Family Income											
Less than \$10,000	1.6	66.9	.6	90.8	.4	44.5	Q	Q	.2	74.4	16.25
\$10,000 to \$19,999	1.6	79.9	.7	102.0	.5	56.2	Q	Q	.1	80.2	14.18
\$20,000 to \$34,999	1.8	85.2	.6	117.5	.7	60.6	Q	Q	.2	102.6	12.06
\$35,000 or More	1.1	112.6	.5	144.2	.5	80.9	Q	Q	Q	Q	11.33
Below 100 Percent of Poverty Line	1.2	66.1	.4	93.2	.3	48.8	Q	Q	.2	74.0	15.00
Below 125 Percent of Poverty Line	1.6	71.3	.6	97.3	.4	51.8	Q	Q	.2	74.3	14.70
Assistance for Heating in Winter											
Yes .....	.3	57.9	Q	82.1	Q	Q	Q	Q	Q	Q	30.94
No	5.8	85.6	2.3	113.1	2.2	61.4	.3	110.1	.5	90.0	9.50

See footnotes at end of table.

Table 26. Total Consumption per South Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.737	0.510	1.262	0.474	1.679	0.572	1.943	0.867	2.578	1.068	
Age of Householder											
Under 35 Years	1.8	75.9	0.8	93.8	0.7	57.9	Q	Q	0.1	74.0	13.04
35 to 59 Years	2.6	92.1	.9	128.6	1.0	69.7	Q	Q	.2	97.3	9.45
60 Years and Over	1.8	80.7	.7	110.6	.5	49.5	Q	Q	.2	84.7	14.39
Household Size											
1 Person	1.6	62.8	.6	94.0	.6	39.9	Q	Q	.1	71.0	11.31
2 to 4 Persons	4.1	89.8	1.6	116.9	1.5	65.8	0.3	107.3	.4	90.4	11.19
5 or More Persons .....	.4	108.1	.1	137.9	.1	96.6	NC	NC	Q	Q	17.11
Secondary Heating											
Yes	2.6	88.7	.7	126.4	1.0	71.0	.2	110.9	.2	89.9	10.21
No	3.4	80.5	1.6	105.5	1.2	53.5	Q	Q	.3	86.2	11.51
Hot Water Fuel											
Natural Gas	1.8	113.0	1.8	115.4	Q	Q	NC	NC	NC	NC	17.02
Electricity	4.1	71.5	.6	102.5	2.2	61.9	.3	106.0	.4	89.9	10.48
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other .....	.2	76.1	NC	NC	NC	NC	NC	NC	.1	80.7	18.87
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	2.5	91.3	.9	127.9	.9	65.3	Q	127.4	.2	87.5	20.66
Under 4,000 HDD	2.1	72.8	Q	101.8	1.0	60.8	Q	Q	.3	89.4	11.50
2,000 CDD or More and --											
Under 4,000 HDD	1.5	88.0	Q	102.8	Q	50.7	Q	Q	Q	Q	34.36

See footnotes at end of table.

Table 26. Total Consumption per South Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors	0.737	0.510	1.262	0.474	1.679	0.572	1.943	0.867	2.578	1.068	
West South Central Division	9.2	90.1	5.9	108.0	2.5	53.9	Q	Q	Q	80.4	11.23
Metropolitan Status											
Metropolitan	6.9	91.5	4.5	111.4	2.1	49.7	Q	Q	Q	Q	12.62
Central City	3.6	93.5	2.5	111.6	1.1	48.8	Q	Q	NC	NC	12.92
Outside Central City	3.3	89.4	2.0	111.2	Q	50.6	NC	NC	Q	Q	23.81
Nonmetropolitan	2.4	85.8	1.4	97.5	Q	72.7	NC	NC	Q	Q	10.12
Payment Method for Utilities											
All Paid by Household	8.1	94.7	5.5	109.0	1.8	58.6	Q	Q	Q	80.4	12.17
Some or None Paid by Household, Other Method	1.2	58.2	.4	94.3	Q	43.3	NC	NC	NC	NC	32.57
Housing Structure											
Mobile Home .....	.4	74.6	.2	71.6	Q	Q	NC	NC	Q	Q	23.84
Single Family	6.9	102.0	5.2	112.5	1.0	69.7	Q	Q	Q	81.5	14.04
Building of 2 or More Units	2.0	50.5	.5	77.0	1.4	40.1	NC	NC	NC	NC	21.19
Number of Rooms											
1 to 3	1.1	47.7	.3	77.0	.8	38.6	NC	NC	NC	NC	23.87
4 to 5	4.7	82.1	3.1	93.4	1.0	51.6	Q	Q	Q	77.7	10.26
6 or More	3.5	114.2	2.5	129.7	.7	73.9	NC	NC	Q	Q	18.76
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	3.6	67.7	2.0	88.0	1.4	41.6	Q	Q	Q	Q	12.14
1,000 to 1,999	4.4	93.8	2.9	105.7	.9	61.8	NC	NC	Q	Q	13.00
2,000 or More	1.2	141.7	1.0	156.5	Q	90.5	NC	NC	Q	Q	27.01
Year of Construction											
1949 or Before	1.5	89.9	1.3	98.6	Q	Q	NC	NC	Q	Q	11.98
1950 to 1974	4.5	100.4	3.7	109.3	.6	53.0	Q	Q	Q	Q	11.08
1975 or After	3.2	75.6	.9	116.2	1.9	55.0	NC	NC	Q	Q	21.61
Status of Unit											
Owned	5.9	102.7	4.2	114.2	1.1	71.6	Q	Q	0.4	85.3	15.17
Rented	3.3	67.3	1.6	92.0	1.5	41.1	NC	NC	Q	Q	14.54
1987 Family Income											
Less than \$10,000	2.4	72.5	1.6	84.4	.5	47.6	NC	NC	Q	Q	14.88
\$10,000 to \$19,999	2.3	80.9	1.6	92.0	.5	37.2	Q	Q	Q	Q	10.52
\$20,000 to \$34,999	2.6	98.4	1.5	123.9	.9	59.2	NC	NC	Q	Q	14.91
\$35,000 or More	2.0	110.8	1.2	138.3	.7	63.3	NC	NC	Q	Q	21.10
Below 100 Percent of Poverty Line	1.9	78.3	1.2	88.1	.3	51.2	NC	NC	Q	Q	15.41
Below 125 Percent of Poverty Line	2.8	78.0	1.9	87.3	.5	49.7	NC	NC	Q	74.7	15.92
Assistance for Heating in Winter											
Yes .....	.6	82.7	.4	84.9	Q	Q	NC	NC	Q	Q	29.62
No	8.6	90.6	5.5	109.8	2.5	53.8	Q	Q	Q	76.3	11.05

See footnotes at end of table.

Table 26. Total Consumption per South Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.737	0.510	1.262	0.474	1.679	0.572	1.943	0.867	2.578	1.068	
Age of Householder											
Under 35 Years	3.0	78.6	1.6	102.7	1.3	46.6	NC	NC	Q	Q	15.70
35 to 59 Years	4.0	101.5	2.5	120.8	1.0	61.8	Q	Q	Q	Q	11.30
60 Years and Over	2.3	85.2	1.7	94.3	.3	57.1	NC	NC	Q	59.5	17.06
Household Size											
1 Person	2.0	64.9	1.0	84.0	.8	41.5	Q	Q	Q	Q	19.98
2 to 4 Persons	6.4	96.1	4.3	113.2	1.6	57.5	NC	NC	0.3	89.4	12.45
5 or More Persons .....	.9	103.1	.6	112.1	.2	73.3	NC	NC	Q	Q	19.60
Secondary Heating											
Yes	4.1	97.3	2.6	116.8	1.0	59.3	Q	Q	Q	Q	17.87
No	5.2	84.4	3.3	101.0	1.5	50.2	NC	NC	Q	87.7	12.26
Hot Water Fuel											
Natural Gas	6.2	103.4	5.4	110.3	Q	53.5	Q	Q	NC	NC	13.84
Electricity	2.6	59.5	.5	85.8	1.8	54.1	NC	NC	Q	Q	18.20
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	81.0	Q	Q	NC	NC	NC	NC	Q	84.2	43.14
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Under 4,000 HDD	Q	88.8	Q	100.7	Q	Q	NC	NC	Q	Q	9.49
2,000 CDD or More and --											
Under 4,000 HDD	7.8	86.7	4.8	105.4	2.4	53.6	Q	Q	Q	67.5	15.26

a No applicable RSE row factor.
 NC No cases in sample.
 Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.
 Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. • Column totals will not sum to total number of households because households with no main heating fuel or with other main heating fuel, such as wood, were not included.
 Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 27. Total Expenditures per South Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987

Household Characteristics	Total Expenditures in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors	0.834	0.363	1.493	0.465	1.903	0.637	2.263	0.665	2.990	0.909	
South Region	30.9	1,081	13.5	1,110	10.5	1,080	2.3	1,185	2.1	1,090	5.19
Metropolitan Status											
Metropolitan	22.1	1,093	10.7	1,126	8.4	1,063	1.1	1,199	1.1	1,013	6.26
Central City	9.4	977	5.0	1,004	3.4	917	.5	1,166	.3	1,011	8.05
Outside Central City	12.7	1,179	5.7	1,234	5.0	1,162	.6	1,229	.8	1,014	8.69
Nonmetropolitan	8.8	1,050	2.9	1,050	2.1	1,147	1.2	1,173	1.0	1,170	9.06
Payment Method for Utilities											
All Paid by Household	27.6	1,122	11.9	1,152	9.2	1,142	2.2	1,187	2.0	1,107	4.74
Some or None Paid by Household, Other Method	3.3	738	1.7	812	1.3	647	Q	Q	Q	Q	13.42
Housing Structure											
Mobile Home	2.2	1,007	.3	902	.8	1,051	.3	1,146	.7	961	12.97
Single Family	22.2	1,181	10.6	1,198	6.2	1,274	1.8	1,201	1.4	1,153	5.78
Building of 2 or More Units	6.4	760	2.6	775	3.6	746	Q	Q	NC	NC	9.35
Number of Rooms											
1 to 3	3.9	679	1.1	682	2.1	669	Q	Q	Q	712	13.40
4 to 5	14.5	957	6.1	931	4.6	1,004	1.3	1,102	1.5	1,004	5.26
6 or More	12.5	1,349	6.3	1,359	3.8	1,403	.9	1,321	.5	1,411	6.29
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	11.7	833	4.7	843	4.2	807	.8	1,083	1.1	868	6.76
1,000 to 1,999	14.3	1,129	6.1	1,121	4.9	1,165	1.2	1,173	.9	1,265	6.16
2,000 or More	4.9	1,536	2.8	1,542	1.5	1,576	.3	1,519	Q	Q	10.04
Year of Construction											
1949 or Before	6.8	1,016	3.8	1,023	.7	1,128	.8	1,288	.6	975	9.15
1950 to 1974	14.3	1,087	7.9	1,125	3.5	1,027	1.3	1,131	.8	1,085	6.53
1975 or After	9.7	1,118	1.8	1,225	6.3	1,104	.2	1,101	.7	1,190	11.80
Status of Unit											
Owned	20.4	1,202	9.0	1,229	6.3	1,269	1.6	1,210	1.7	1,162	5.66
Rented	10.5	846	4.6	876	4.2	794	.7	1,129	.5	820	8.04
1987 Family Income											
Less than \$10,000	7.2	830	3.3	863	1.8	790	.6	1,058	.7	856	9.65
\$10,000 to \$19,999	7.9	924	3.4	931	2.4	863	.7	1,165	.8	1,029	7.82
\$20,000 to \$34,999	8.2	1,155	3.3	1,200	3.1	1,109	.6	1,215	.4	1,336	7.26
\$35,000 or More	7.6	1,400	3.5	1,428	3.2	1,380	.3	1,416	.2	1,675	9.57
Below 100 Percent of Poverty Line	5.6	853	2.5	895	1.2	818	.5	1,017	.7	919	10.50
Below 125 Percent of Poverty Line	7.7	871	3.6	907	1.8	843	.6	1,021	.8	927	9.10
Assistance for Heating in Winter											
Yes	1.6	850	.7	874	.2	956	.2	982	.3	878	14.88
No	29.3	1,094	12.8	1,124	10.3	1,082	2.1	1,203	1.9	1,118	5.29

See footnotes at end of table.

Table 27. Total Expenditures per South Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.894	0.363	1.433	0.465	1.903	0.637	2.263	0.665	2.990	0.909	
Age of Householder											
Under 35 Years	9.5	971	3.9	985	4.0	930	0.6	1,152	0.5	1,128	7.74
35 to 59 Years	13.4	1,204	5.6	1,247	4.7	1,247	.9	1,247	.9	1,101	5.85
60 Years and Over	8.1	1,007	4.1	1,041	1.9	977	.7	1,140	.7	1,047	8.87
Household Size											
1 Person	7.1	766	3.1	822	2.6	721	.5	938	.6	828	9.10
2 to 4 Persons	21.1	1,161	9.3	1,191	7.3	1,167	1.7	1,238	1.4	1,164	5.00
5 or More Persons	2.7	1,288	1.2	1,223	.7	1,502	.1	1,400	.2	1,296	10.63
Secondary Heating											
Yes	13.8	1,191	5.3	1,257	4.3	1,256	1.5	1,179	1.1	1,091	6.45
No	17.1	992	8.2	1,015	6.2	957	.8	1,197	1.0	1,088	6.10
Hot Water Fuel											
Natural Gas	12.6	1,062	11.3	1,091	1.1	707	Q	Q	NC	NC	10.37
Electricity	16.7	1,104	2.2	1,210	9.3	1,121	1.9	1,182	1.4	1,113	6.56
Fuel Oil or Kerosene	Q	Q	NC	NC	NC	NC	Q	Q	NC	NC	a
Other	1.5	969	Q	Q	Q	Q	Q	Q	.7	1,046	12.45
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	NC	NC	Q	Q	Q	Q	NC	NC	a
4,000 to 5,499 HDD	8.2	1,058	4.0	1,051	2.0	1,127	1.1	1,224	.3	1,145	10.71
Under 4,000 HDD	8.4	1,111	3.1	1,193	2.8	1,026	.8	1,176	.7	1,296	10.90
2,000 CDD or More and --											
Under 4,000 HDD	14.2	1,078	6.5	1,107	5.7	1,092	.3	1,026	1.0	928	10.12

See footnotes at end of table.

Table 27. Total Expenditures per South Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors	0.834	0.363	1.433	0.485	1.905	0.637	2.263	0.665	2.990	0.909	
South Atlantic Division	15.6	1,128	5.3	1,171	5.8	1,142	2.0	1,185	1.1	1,112	6.83
Metropolitan Status											
Metropolitan	11.9	1,149	4.5	1,191	5.1	1,152	1.0	1,190	.7	931	7.91
Central City	4.1	1,041	1.6	1,138	1.6	941	.5	1,174	.3	1,011	10.40
Outside Central City	7.7	1,207	2.9	1,219	3.5	1,246	.5	1,206	.5	888	11.17
Nonmetropolitan	3.7	1,060	.8	1,052	.7	1,067	1.0	1,181	Q	1,537	11.28
Payment Method for Utilities											
All Paid by Household	13.9	1,171	4.2	1,246	5.4	1,183	1.9	1,187	1.0	1,150	7.00
Some or None Paid by Household, Other Method	1.7	775	1.0	862	.4	523	Q	Q	Q	Q	15.02
Housing Structure											
Mobile Home	1.5	955	Q	Q	.5	889	.3	1,139	.5	928	14.65
Single Family	10.8	1,246	3.7	1,313	3.8	1,311	1.5	1,203	.6	1,270	8.05
Building of 2 or More Units	3.3	816	1.5	829	1.5	803	Q	Q	NC	NC	12.16
Number of Rooms											
1 to 3	2.0	722	.5	732	1.0	693	Q	Q	Q	Q	18.92
4 to 5	7.0	988	2.0	966	2.5	1,029	1.0	1,081	.7	1,025	7.31
6 or More	6.6	1,396	2.7	1,410	2.3	1,460	.8	1,312	.3	1,464	8.55
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	5.9	882	1.8	882	2.1	867	.7	1,096	.6	855	8.72
1,000 to 1,999	7.1	1,159	2.3	1,148	2.8	1,193	1.0	1,176	.3	1,413	8.63
2,000 or More	2.7	1,589	1.2	1,632	.9	1,652	.3	1,448	Q	Q	13.12
Year of Construction											
1949 or Before	4.1	1,075	1.9	1,081	.5	1,213	.8	1,270	.4	995	11.46
1950 to 1974	6.5	1,145	2.7	1,221	1.9	1,119	1.0	1,124	.3	1,086	9.84
1975 or After	5.0	1,149	.7	1,211	3.4	1,144	Q	Q	.4	1,258	14.43
Status of Unit											
Owned	10.2	1,243	3.2	1,311	3.8	1,282	1.4	1,213	.8	1,218	8.28
Rented	5.4	909	2.1	951	2.0	869	.6	1,123	.2	761	10.45
1987 Family Income											
Less than \$10,000	3.2	882	1.1	955	.9	799	.5	1,058	.3	955	14.28
\$10,000 to \$19,999	4.0	934	1.2	942	1.4	888	.6	1,162	.5	972	11.08
\$20,000 to \$34,999	3.9	1,168	1.2	1,191	1.5	1,141	.5	1,238	.2	1,360	9.72
\$35,000 or More	4.5	1,441	1.8	1,445	2.0	1,474	.3	1,357	Q	Q	11.22
Below 100 Percent of Poverty Line	2.5	910	.9	1,023	.6	807	.4	1,027	.3	981	16.25
Below 125 Percent of Poverty Line	3.3	913	1.2	1,016	.9	829	.5	1,026	.3	1,002	13.69
Assistance for Heating in Winter											
Yes .....	.7	912	.2	951	Q	971	.1	998	Q	Q	24.38
No	14.9	1,138	5.0	1,181	5.7	1,145	1.8	1,200	1.0	1,123	6.92

See footnotes at end of table.

Table 27. Total Expenditures per South Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.834	0.363	1.433	0.465	1.903	0.637	2.263	0.665	2.990	0.909	
Age of Householder											
Under 35 Years	4.7	1,012	1.5	1,036	2.0	978	0.6	1,168	0.3	1,199	10.42
35 to 59 Years	6.8	1,231	2.2	1,279	2.7	1,311	.7	1,238	.5	964	7.90
60 Years and Over	4.0	1,090	1.6	1,150	1.1	1,034	.6	1,139	.3	1,244	11.74
Household Size											
1 Person	3.6	811	1.4	881	1.3	753	.4	910	Q	Q	13.05
2 to 4 Persons	10.6	1,208	3.4	1,260	4.1	1,227	1.4	1,246	.7	1,213	7.61
5 or More Persons	1.4	1,335	.5	1,376	.4	1,530	.1	1,400	Q	Q	12.44
Secondary Heating											
Yes	7.1	1,235	2.0	1,314	2.3	1,366	1.2	1,170	.7	1,124	8.54
No	8.4	1,038	3.3	1,087	3.5	991	.7	1,210	.4	1,091	8.77
Hot Water Fuel											
Natural Gas	4.6	1,114	4.1	1,136	.3	626	Q	Q	NC	NC	16.93
Electricity	10.1	1,144	1.1	1,301	5.3	1,165	1.6	1,181	.8	1,113	9.31
Fuel Oil or Kerosene	Q	Q	NC	NC	NC	NC	Q	Q	NC	NC	a
Other .....	.8	979	Q	Q	Q	Q	Q	Q	Q	Q	20.14
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	NC	NC	Q	Q	Q	Q	NC	NC	a
4,000 to 5,499 HDD	5.1	1,108	2.5	1,125	1.1	1,167	.9	1,196	Q	Q	12.53
Under 4,000 HDD	5.4	1,175	2.1	1,264	1.6	1,063	.7	1,211	.3	1,476	14.74
2,000 CDD or More and --											
Under 4,000 HDD	4.9	1,106	Q	1,044	3.1	1,179	.3	1,029	.6	874	13.61

See footnotes at end of table.

Table 27. Total Expenditures per South Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:										RSE Flow Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors	0.834	0.363	1.433	0.465	1.303	0.637	2.283	0.665	2.990	0.909	
East South Central Division	6.1	992	2.4	990	2.2	1,017	0.3	1,189	0.5	1,112	7.37
Metropolitan Status											
Metropolitan	3.4	1,030	1.7	1,025	1.3	1,005	Q	Q	.2	1,349	7.95
Central City	1.7	907	.9	899	.8	917	Q	Q	NC	NC	15.08
Outside Central City	1.7	1,156	.8	1,169	.5	1,154	Q	Q	.2	1,349	15.37
Nonmetropolitan	2.7	944	.7	907	.9	1,033	.2	1,134	.4	1,010	9.02
Payment Method for Utilities											
All Paid by Household	5.6	1,022	2.1	1,040	2.0	1,050	.3	1,189	.5	1,112	7.50
Some or None Paid by Household, Other Method .....	.5	632	.3	623	.2	653	NC	NC	NC	NC	33.40
Housing Structure											
Mobile Home .....	.4	983	Q	Q	.2	950	Q	Q	.1	976	15.80
Single Family	4.5	1,080	1.8	1,101	1.4	1,168	.3	1,188	.4	1,163	7.85
Building of 2 or More Units	1.2	667	.6	661	.6	675	NC	NC	NC	NC	16.68
Number of Rooms											
1 to 3 .....	.8	601	.3	618	.4	587	Q	Q	Q	Q	19.09
4 to 5	2.9	902	.9	844	1.1	958	.2	1,185	.3	1,000	8.75
6 or More	2.4	1,236	1.1	1,222	.8	1,287	Q	Q	.2	1,376	8.55
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	2.2	752	.9	759	.7	732	.1	999	.3	935	12.16
1,000 to 1,999	2.9	1,064	.9	1,082	1.2	1,059	.1	1,153	.3	1,298	10.28
2,000 or More	1.0	1,333	.6	1,228	.3	1,455	Q	Q	Q	Q	16.27
Year of Construction											
1949 or Before	1.2	964	.7	1,010	.1	1,064	Q	Q	Q	1,065	18.55
1950 to 1974	3.3	980	1.5	966	1.1	945	.2	1,161	.3	1,140	10.28
1975 or After	1.6	1,038	.2	1,093	1.0	1,088	Q	Q	.1	1,082	13.11
Status of Unit											
Owned	4.2	1,099	1.5	1,139	1.5	1,171	.2	1,199	.5	1,147	8.80
Rented	1.9	746	.9	737	.8	718	Q	Q	Q	Q	12.67
1987 Family Income											
Less than \$10,000	1.6	745	.6	756	.4	717	Q	Q	.2	911	14.22
\$10,000 to \$19,999	1.6	921	.7	895	.5	922	Q	Q	.1	1,098	11.65
\$20,000 to \$34,999	1.8	1,061	.6	1,084	.7	1,030	Q	Q	.2	1,298	10.34
\$35,000 or More	1.1	1,332	.5	1,286	.5	1,343	Q	Q	Q	Q	9.08
Below 100 Percent of Poverty Line	1.2	754	.4	792	.3	760	Q	Q	.2	928	14.47
Below 125 Percent of Poverty Line	1.6	801	.6	816	.4	822	Q	Q	.2	937	14.01
Assistance for Heating in Winter											
Yes .....	.3	701	Q	652	Q	Q	Q	Q	Q	Q	29.69
No	5.8	1,008	2.3	1,003	2.2	1,019	.3	1,224	.5	1,146	7.69

See footnotes at end of table.

South

East South Central

Expenditures

Table 27. Total Expenditures per South Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.834	0.363	1.433	0.465	1.903	0.637	2.263	0.665	2.990	0.909	
Age of Householder											
Under 35 Years	1.8	925	0.8	853	0.7	966	Q	Q	0.1	1,018	11.44
35 to 59 Years	2.6	1,139	.9	1,189	1.0	1,165	Q	Q	.2	1,214	8.68
60 Years and Over	1.8	845	.7	891	.5	801	Q	Q	.2	1,030	12.61
Household Size											
1 Person	1.6	686	.6	757	.6	664	Q	Q	.1	866	9.38
2 to 4 Persons	4.1	1,068	1.6	1,058	1.5	1,092	0.3	1,199	.4	1,148	8.72
5 or More Persons .....	.4	1,393	.1	1,286	.1	1,617	NC	NC	Q	Q	15.88
Secondary Heating											
Yes	2.6	1,108	.7	1,152	1.0	1,185	.2	1,228	.2	1,127	9.04
No	3.4	903	1.6	917	1.2	884	Q	Q	.3	1,100	10.02
Hot Water Fuel											
Natural Gas	1.8	945	1.8	963	Q	Q	NC	NC	NC	NC	12.72
Electricity	4.1	1,018	.6	1,067	2.2	1,034	.3	1,189	.4	1,150	9.52
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other .....	.2	888	NC	NC	NC	NC	NC	NC	.1	980	16.70
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	2.5	984	.9	917	.9	1,082	Q	1,359	.2	1,064	18.42
Under 4,000 HDD	2.1	1,020	Q	1,080	1.0	1,020	Q	Q	.3	1,153	9.85
2,000 CDD or More and --											
Under 4,000 HDD	1.5	963	Q	1,013	Q	816	Q	Q	Q	Q	37.05

See footnotes at end of table.

Table 27. Total Expenditures per South Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	5.334	0.363	1.433	0.465	1.903	0.637	2.253	0.665	2.990	0.909	
West South Central Division	9.2	1,060	5.9	1,104	2.5	994	Q	Q	Q	1,020	10.00
Metropolitan Status											
Metropolitan	6.9	1,027	4.5	1,099	2.1	881	Q	Q	Q	Q	11.06
Central City	3.6	936	2.5	954	1.1	883	Q	Q	NC	NC	10.56
Outside Central City	3.3	1,124	2.0	1,281	Q	879	NC	NC	Q	Q	20.57
Nonmetropolitan	2.4	1,157	1.4	1,120	Q	1,499	NC	NC	Q	1,001	11.35
Payment Method for Utilities											
All Paid by Household	8.1	1,109	5.5	1,123	1.8	1,124	Q	Q	Q	1,020	10.87
Some or None Paid by Household, Other Method	1.2	727	.4	817	Q	703	NC	NC	NC	NC	26.43
Housing Structure											
Mobile Home .....	.4	1,245	.2	859	Q	Q	NC	NC	Q	Q	28.76
Single Family	6.9	1,145	5.2	1,149	1.0	1,287	Q	Q	Q	996	13.20
Building of 2 or More Units	2.0	724	.5	750	1.4	714	NC	NC	NC	NC	17.71
Number of Rooms											
1 to 3	1.1	662	.3	666	.8	676	NC	NC	NC	NC	20.97
4 to 5	4.7	947	3.1	933	1.0	988	Q	Q	Q	973	9.76
6 or More	3.5	1,339	2.5	1,366	.7	1,350	NC	NC	Q	Q	15.15
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	3.6	804	2.0	847	1.4	755	Q	Q	Q	Q	11.83
1,000 to 1,999	4.4	1,123	2.9	1,113	.9	1,213	NC	NC	Q	Q	12.26
2,000 or More	1.2	1,580	1.0	1,609	Q	1,489	NC	NC	Q	Q	19.26
Year of Construction											
1949 or Before	1.5	900	1.3	944	Q	Q	NC	NC	Q	Q	11.47
1950 to 1974	4.5	1,080	3.7	1,119	.6	867	Q	Q	Q	Q	10.26
1975 or After	3.2	1,108	.9	1,269	1.9	1,044	NC	NC	Q	Q	21.26
Status of Unit											
Owned	5.9	1,204	4.2	1,200	1.1	1,357	Q	Q	0.4	1,058	13.27
Rented	3.3	800	1.6	855	1.5	733	NC	NC	Q	Q	13.46
1987 Family Income											
Less than \$10,000	2.4	818	1.6	839	.5	842	NC	NC	Q	Q	14.67
\$10,000 to \$19,999	2.3	910	1.6	938	.5	732	Q	Q	Q	Q	11.16
\$20,000 to \$34,999	2.6	1,200	1.5	1,253	.9	1,116	NC	NC	Q	Q	14.15
\$35,000 or More	2.0	1,343	1.2	1,462	.7	1,124	NC	NC	Q	Q	16.84
Below 100 Percent of Poverty Line	1.9	840	1.2	838	.3	887	NC	NC	Q	Q	14.50
Below 125 Percent of Poverty Line	2.8	862	1.9	869	.5	885	NC	NC	Q	844	15.63
Assistance for Heating in Winter											
Yes .....	.6	859	.4	873	Q	Q	NC	NC	Q	Q	20.63
No	8.6	1,075	5.5	1,122	2.5	995	Q	Q	Q	1,072	10.19

See footnotes at end of table.

Table 27. Total Expenditures per South Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:										RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Fuel Oil or Kerosene		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.834	0.363	1.433	0.465	1.903	0.637	2.263	0.665	2.990	0.909	
Age of Householder											
Under 35 Years	3.0	932	1.6	1,000	1.3	832	NC	NC	Q	Q	13.44
35 to 59 Years	4.0	1,198	2.5	1,241	1.0	1,163	Q	Q	Q	Q	9.62
60 Years and Over	2.3	986	1.7	1,001	.3	1,096	NC	NC	Q	782	19.46
Household Size											
1 Person	2.0	748	1.0	781	.8	710	Q	Q	Q	Q	15.97
2 to 4 Persons	6.4	1,143	4.3	1,186	1.6	1,085	NC	NC	0.3	1,051	10.54
5 or More Persons .....	.9	1,166	.6	1,070	.2	1,358	NC	NC	Q	Q	20.37
Secondary Heating											
Yes	4.1	1,167	2.6	1,246	1.0	1,075	Q	Q	Q	Q	15.73
No	5.2	976	3.3	992	1.5	940	NC	NC	Q	1,073	11.15
Hot Water Fuel											
Natural Gas	6.2	1,057	5.4	1,099	Q	759	Q	Q	NC	NC	12.63
Electricity	2.6	1,081	.5	1,162	1.8	1,097	NC	NC	Q	Q	19.06
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	988	Q	Q	NC	NC	NC	NC	Q	1,030	46.98
Climate Zone											
Under 2,000 CDD and--											
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Under 4,000 HDD	Q	942	Q	999	Q	Q	NC	NC	Q	Q	50.08
2,000 CDD or More and --											
Under 4,000 HDD	7.8	1,082	4.8	1,135	2.4	1,013	Q	Q	Q	981	13.52

* No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. • Column totals will not sum to total number of households because households with no main heating fuel or with other main heating fuel, such as wood, were not included.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 28. Natural Gas Consumption and Expenditures for South Region Households, 1987

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.620	1.108	1.108	0.985	0.435	1.728	0.943	0.943	0.765	
South Region	15.1	70.1	72.3	400	5.53	13.5	75.4	77.8	429	5.02
Metropolitan Status										
Metropolitan	12.1	71.2	73.4	404	5.50	10.7	77.7	80.1	440	5.99
Central City	5.6	74.8	77.2	395	5.11	5.0	81.5	84.0	428	7.14
Outside Central City	6.5	68.0	70.1	411	5.87	5.7	74.4	76.7	450	7.30
Nonmetropolitan	3.0	65.8	67.9	384	5.66	2.9	67.1	69.2	389	5.36
Natural Gas Paid by Household										
Yes	12.6	74.3	76.6	422	5.52	11.8	76.5	78.9	433	5.33
No	2.6	49.9	51.4	289	5.62	1.7	67.8	69.9	399	10.37
Housing Structure										
Mobile Home .....	.3	45.4	46.8	301	6.44	.3	46.3	47.8	305	17.16
Single Family	11.3	77.8	80.2	438	5.46	10.6	80.2	82.7	450	5.33
Building of 2 or More Units	3.5	47.7	49.1	285	5.79	2.6	59.1	61.0	357	9.09
Number of Rooms										
1 to 3	1.8	43.2	44.5	244	5.48	1.1	60.5	62.4	347	14.58
4 to 5	6.5	62.2	64.1	354	5.52	6.1	65.5	67.5	371	5.14
6 or More	6.8	85.1	87.7	486	5.54	6.3	87.6	90.3	499	6.05
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	5.7	56.2	57.9	325	5.61	4.7	65.0	67.0	375	5.95
1,000 to 1,999	6.4	67.1	69.1	385	5.57	6.1	69.2	71.3	395	5.66
2,000 or More	3.0	103.7	106.9	577	5.39	2.8	107.1	110.4	595	7.20
Year of Construction										
1949 or Before	4.1	77.8	80.2	464	5.79	3.8	82.1	84.6	485	5.39
1950 to 1974	8.5	69.6	71.7	389	5.43	7.9	72.5	74.7	406	6.39
1975 or After	2.5	59.2	61.1	328	5.37	1.8	74.5	76.8	413	11.95
Status of Unit										
Owned	9.6	77.6	80.0	441	5.50	9.0	80.0	82.5	452	5.64
Rented	5.6	57.3	59.0	330	5.59	4.6	66.4	68.5	383	6.83
1987 Family Income										
Less than \$10,000	3.7	59.5	61.3	348	5.67	3.3	64.7	66.7	379	6.58
\$10,000 to \$19,999	3.7	61.5	63.4	353	5.57	3.4	65.3	67.3	371	6.18
\$20,000 to \$34,999	3.8	74.8	77.1	414	5.37	3.3	80.6	83.1	446	6.73
\$35,000 or More	3.9	84.1	86.8	480	5.54	3.5	90.3	93.1	516	7.26
Below 100 Percent of Poverty Line	2.8	63.5	65.5	371	5.66	2.5	68.6	70.7	400	7.28
Below 125 Percent of Poverty Line	4.1	61.7	63.6	357	5.61	3.6	66.2	68.3	381	6.02
Assistance for Heating in Winter										
Yes .....	.8	64.0	66.0	389	5.89	.7	64.1	66.1	388	11.06
No	14.4	70.5	72.6	400	5.51	12.8	76.1	78.4	431	5.12
Age of Householder										
Under 35 Years	4.6	61.1	63.0	343	5.44	3.9	69.0	71.2	389	6.61
35 to 59 Years	6.0	78.7	81.1	438	5.40	5.6	81.3	83.9	452	4.96
60 Years and Over	4.5	67.9	70.1	406	5.80	4.1	73.4	75.7	435	6.81

See footnotes at end of table.

Table 28. Natural Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.620	1.108	1.108	0.985	0.435	1.728	0.943	0.943	0.765	
Household Size										
1 Person	3.7	59.5	61.4	345	5.62	3.1	67.7	69.8	396	9.62
2 to 4 Persons	10.1	72.3	74.5	410	5.50	9.3	76.7	79.1	432	4.52
5 or More Persons	1.3	83.0	85.6	476	5.56	1.2	85.2	87.8	486	7.81
Secondary Heating										
Yes	6.0	73.9	76.2	420	5.51	5.3	79.5	82.0	451	6.21
No	9.1	67.7	69.8	386	5.54	8.2	72.8	75.0	415	5.89
Hot Water Fuel										
Natural Gas	12.6	73.7	76.0	413	5.44	11.3	79.5	82.0	446	5.45
Electricity	2.5	52.8	54.4	336	6.18	2.2	55.5	57.2	349	6.68
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	4.1	93.3	96.2	517	5.38	4.0	95.8	98.8	530	8.58
Under 4,000 HDD	3.5	69.7	71.8	439	6.11	3.1	75.6	78.0	478	6.84
2,000 CDD or More and --										
Under 4,000 HDD	7.5	57.5	59.3	316	5.33	6.5	62.9	64.9	344	7.77

See footnotes at end of table.

Table 28. Natural Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.820	1.108	1.108	0.985	0.435	1.728	0.943	0.943	0.765	
South Atlantic Division	5.9	74.7	77.0	501	6.50	5.3	80.0	82.5	533	6.60
Metropolitan Status										
Metropolitan	5.1	76.4	78.8	514	6.52	4.5	82.9	85.5	554	7.15
Central City	1.9	76.7	79.0	511	6.47	1.6	88.5	91.2	587	6.41
Outside Central City	3.1	76.3	78.7	516	6.56	2.9	79.8	82.3	535	9.57
Nonmetropolitan .....	.8	63.7	65.7	417	6.36	.8	62.7	64.6	411	7.66
Natural Gas Paid by Household										
Yes	4.6	78.2	80.6	525	6.51	4.2	82.6	85.1	551	7.49
No	1.2	61.5	63.4	409	6.46	1.0	69.5	71.7	461	9.66
Housing Structure										
Mobile Home	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Single Family	4.0	82.1	84.6	550	6.50	3.7	86.8	89.5	578	7.97
Building of 2 or More Units	1.7	58.4	60.2	391	6.49	1.5	64.6	66.7	430	7.46
Number of Rooms										
1 to 3 .....	.7	53.7	55.4	349	6.30	.5	68.2	70.3	440	16.73
4 to 5	2.2	65.2	67.3	449	6.68	2.0	68.3	70.4	466	7.59
6 or More	3.0	86.8	89.5	576	6.44	2.7	91.1	93.9	602	8.60
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	2.1	62.0	63.9	422	6.61	1.8	69.2	71.4	467	6.61
1,000 to 1,999	2.4	67.8	69.9	456	6.51	2.3	70.9	73.1	473	9.79
2,000 or More	1.4	106.2	109.5	701	6.40	1.2	112.3	115.8	740	7.98
Year of Construction										
1949 or Before	2.2	78.2	80.6	524	6.50	1.9	86.1	88.8	572	7.02
1950 to 1974	2.9	71.2	73.4	484	6.59	2.7	75.8	78.2	513	9.50
1975 or After .....	.7	78.2	80.6	501	6.22	.7	79.8	82.3	510	13.82
Status of Unit										
Owned	3.5	82.0	84.5	552	6.53	3.2	86.1	88.8	576	7.94
Rented	2.4	63.8	65.8	425	6.46	2.1	70.4	72.6	466	7.64
1987 Family Income										
Less than \$10,000	1.3	62.9	64.9	419	6.46	1.1	70.1	72.3	465	12.28
\$10,000 to \$19,999	1.4	61.4	63.3	424	6.69	1.2	67.8	69.9	459	9.33
\$20,000 to \$34,999	1.3	80.0	82.4	543	6.59	1.2	83.5	86.1	567	8.48
\$35,000 or More	1.9	88.9	91.6	584	6.38	1.8	92.0	94.9	604	8.88
Below 100 Percent of Poverty Line	1.0	68.8	70.9	462	6.51	.9	75.0	77.3	500	13.74
Below 125 Percent of Poverty Line	1.3	65.8	67.8	445	6.56	1.2	71.5	73.7	477	10.98
Assistance for Heating in Winter										
Yes .....	.3	70.5	72.7	495	6.82	.2	70.6	72.7	491	17.17
No	5.6	74.9	77.2	501	6.49	5.0	80.5	83.0	535	6.62
Age of Householder										
Under 35 Years	1.7	64.8	66.8	433	6.49	1.5	70.5	72.7	470	7.83
35 to 59 Years	2.3	82.4	85.0	544	6.40	2.2	85.4	88.1	562	6.12
60 Years and Over	1.9	73.8	76.1	507	6.67	1.6	81.5	84.0	554	10.35

See footnotes at end of table.

Table 28. Natural Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.620	1.108	1.108	0.985	0.435	1.728	0.943	0.943	0.765	
Household Size										
1 Person	1.6	64.6	66.6	435	6.53	1.4	71.9	74.1	483	13.31
2 to 4 Persons	3.7	77.3	79.7	519	6.51	3.4	81.9	84.4	545	6.31
5 or More Persons .....	.5	86.5	89.2	573	6.43	.5	89.8	92.6	590	10.24
Secondary Heating										
Yes	2.2	81.7	84.3	548	6.50	2.0	86.7	89.3	577	6.94
No	3.7	70.6	72.8	473	6.50	3.3	76.1	78.5	507	8.30
Hot Water Fuel										
Natural Gas	4.6	79.7	82.2	533	6.49	4.1	85.5	88.2	569	6.59
Electricity	1.3	57.7	59.4	392	6.59	1.1	60.6	62.4	408	10.60
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	2.6	89.6	92.4	593	6.42	2.5	93.3	96.2	617	7.32
Under 4,000 HDD	2.4	72.5	74.8	481	6.44	2.1	78.3	80.7	519	6.76
2,000 CDD or More and --										
Under 4,000 HDD .....	.8	32.6	33.6	258	7.67	Q	35.1	36.2	263	31.72

See footnotes at end of table.

Table 28. Natural Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.620	1.108	1.108	0.995	0.435	1.728	0.943	0.943	0.765	
East South Central Division	2.5	73.8	76.1	374	4.92	2.4	75.8	78.2	384	10.98
Metropolitan Status										
Metropolitan	1.8	70.9	73.1	367	5.01	1.7	73.2	75.5	378	12.98
Central City	1.0	68.6	70.8	353	4.98	.9	72.2	74.4	371	24.44
Outside Central City	.8	73.8	76.1	384	5.05	.8	74.4	76.7	387	11.35
Nonmetropolitan	.7	80.9	83.4	393	4.72	.7	82.0	84.6	398	9.47
Natural Gas Paid by Household										
Yes	2.2	76.8	79.2	392	4.95	2.1	77.8	80.2	396	10.47
No	.3	54.6	56.3	260	4.62	.3	61.4	63.3	295	16.66
Housing Structure										
Mobile Home	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Single Family	1.8	83.5	86.0	422	4.91	1.8	84.5	87.2	427	9.39
Building of 2 or More Units	.6	48.2	49.7	244	4.91	.6	51.2	52.8	261	18.14
Number of Rooms										
1 to 3	Q	47.1	48.6	232	4.78	.3	51.6	53.2	257	21.50
4 to 5	.9	65.1	67.1	337	5.02	.9	66.0	68.0	340	11.30
6 or More	1.2	89.8	92.5	452	4.88	1.1	91.1	93.9	457	9.22
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	1.0	58.8	60.6	308	5.09	.9	61.8	63.7	325	17.62
1,000 to 1,999	.9	67.9	70.0	362	5.18	.9	68.8	70.9	366	7.79
2,000 or More	.6	110.3	113.7	511	4.49	.6	110.3	113.7	511	11.79
Year of Construction										
1949 or Before	.7	90.9	93.8	459	4.89	.7	92.7	95.6	466	12.55
1950 to 1974	1.5	67.1	69.2	338	4.88	1.5	69.2	71.4	349	13.87
1975 or After	.2	65.4	67.5	356	5.27	.2	66.9	69.0	363	12.72
Status of Unit										
Owned	1.5	85.4	88.1	430	4.88	1.5	86.5	89.1	434	9.45
Rented	.9	54.9	56.6	284	5.02	.9	57.6	59.4	299	14.55
1987 Family Income										
Less than \$10,000	.7	63.6	65.6	343	5.23	.6	68.2	70.4	370	11.59
\$10,000 to \$19,999	.7	67.9	70.0	335	4.78	.7	69.0	71.1	338	15.69
\$20,000 to \$34,999	.6	74.9	77.3	373	4.83	.6	75.5	77.9	376	12.28
\$35,000 or More	.5	93.7	96.6	469	4.86	.5	94.4	97.3	472	12.21
Below 100 Percent of Poverty Line	.5	62.4	64.3	336	5.23	.4	69.1	71.3	376	13.39
Below 125 Percent of Poverty Line	.7	67.1	69.2	356	5.15	.6	72.1	74.3	385	12.53
Assistance for Heating in Winter										
Yes	Q	63.2	65.2	335	5.13	Q	63.2	65.2	335	38.05
No	2.4	74.2	76.5	376	4.91	2.3	76.3	78.7	386	11.12
Age of Householder										
Under 35 Years	.8	61.8	63.8	320	5.02	.8	62.5	64.5	324	17.00
35 to 59 Years	.9	81.3	83.8	406	4.85	.9	82.1	84.7	410	9.72
60 Years and Over	.8	76.7	79.0	389	4.92	.7	81.7	84.3	413	11.33

See footnotes at end of table.

Table 28. Natural Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.620	1.108	1.108	0.985	0.435	1.728	0.943	0.943	0.765	
Household Size										
1 Person	0.7	66.3	68.3	329	4.82	0.6	69.8	72.0	349	14.12
2 to 4 Persons	1.6	75.2	77.5	380	4.90	1.6	76.6	79.0	386	10.95
5 or More Persons .....	.1	94.1	97.0	522	5.38	.1	94.1	97.0	522	14.75
Secondary Heating										
Yes .....	.8	78.9	81.3	398	4.90	.7	81.2	83.7	407	12.78
No	1.7	71.5	73.7	363	4.93	1.6	73.4	75.7	373	12.19
Hot Water Fuel										
Natural Gas	1.8	80.6	83.1	396	4.77	1.8	82.4	85.0	406	12.37
Electricity .....	.7	55.2	57.0	314	5.51	.8	57.0	58.8	322	9.74
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD .....	.9	94.8	97.7	393	4.03	.9	94.8	97.7	393	14.57
Under 4,000 HDD	Q	63.3	65.3	413	6.33	Q	65.7	67.7	428	19.28
2,000 CDD or More and --										
Under 4,000 HDD	Q	61.3	63.2	339	5.37	Q	63.8	65.8	355	28.39

See footnotes at end of table.

Table 28. Natural Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.620	1.108	1.108	0.985	0.435	1.728	0.943	0.943	0.765	
West South Central Division	6.8	64.8	66.9	322	4.81	5.9	71.2	73.4	354	6.47
Metropolitan Status										
Metropolitan	5.3	66.3	68.3	310	4.54	4.5	74.1	76.4	348	7.96
Central City	2.7	75.8	78.1	327	4.18	2.5	80.2	82.7	345	10.00
Outside Central City	2.5	56.1	57.8	293	5.06	2.0	66.4	68.4	351	10.55
Nonmetropolitan	1.5	59.9	61.8	362	5.86	1.4	62.0	64.0	372	7.48
Natural Gas Paid by Household										
Yes	5.8	70.2	72.4	351	4.85	5.5	71.4	73.6	357	6.20
No	1.0	Q	Q	Q	4.33	.4	67.9	70.0	308	17.89
Housing Structure										
Mobile Home .....	.2	40.9	42.2	249	5.90	.2	42.0	43.3	248	21.15
Single Family	5.4	72.8	75.0	361	4.81	5.2	74.0	76.3	367	6.29
Building of 2 or More Units	1.2	31.7	32.7	152	4.66	.5	52.8	54.4	262	24.24
Number of Rooms										
1 to 3 .....	.7	30.8	31.8	148	4.65	.3	56.7	58.5	277	25.05
4 to 5	3.4	59.5	61.3	298	4.86	3.1	63.5	65.5	317	5.81
6 or More	2.6	81.2	83.7	401	4.79	2.5	82.3	84.8	407	9.09
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	2.6	50.7	52.2	254	4.86	2.0	62.6	64.5	316	8.32
1,000 to 1,999	3.1	66.2	68.3	337	4.94	2.9	67.9	70.0	344	7.07
2,000 or More	1.0	96.8	99.9	448	4.49	1.0	98.6	101.7	459	13.96
Year of Construction										
1949 or Before	1.3	69.8	72.0	366	5.08	1.3	70.2	72.3	368	6.26
1950 to 1974	4.0	69.3	71.5	340	4.75	3.7	71.3	73.5	351	7.43
1975 or After	1.5	49.1	50.6	239	4.73	.9	72.0	74.2	345	16.03
Status of Unit										
Owned	4.5	71.6	73.8	358	4.85	4.2	73.1	75.3	365	6.99
Rented	2.3	51.4	53.0	250	4.72	1.6	66.2	68.2	325	10.23
1987 Family Income										
Less than \$10,000	1.8	55.4	57.1	297	5.20	1.6	59.4	61.3	320	6.18
\$10,000 to \$19,999	1.7	58.9	60.7	303	4.98	1.6	61.7	63.6	318	6.59
\$20,000 to \$34,999	1.8	71.1	73.3	336	4.58	1.5	80.5	83.0	379	8.72
\$35,000 or More	1.5	75.0	77.4	356	4.59	1.2	86.2	88.9	409	13.85
Below 100 Percent of Poverty Line	1.4	60.2	62.1	318	5.12	1.2	63.8	65.7	338	6.42
Below 125 Percent of Poverty Line	2.1	57.3	59.1	301	5.09	1.9	60.9	62.8	320	5.91
Assistance for Heating in Winter										
Yes .....	.4	60.1	61.9	333	5.37	.4	60.4	62.3	336	15.86
No	6.4	65.2	67.2	321	4.78	5.5	72.0	74.2	355	6.90
Age of Householder										
Under 35 Years	2.2	58.0	59.8	281	4.71	1.6	70.7	72.9	345	9.53
35 to 59 Years	2.8	74.6	77.0	360	4.67	2.5	77.6	80.0	374	6.87
60 Years and Over	1.9	58.2	60.0	312	5.21	1.7	62.1	64.0	331	7.00

See footnotes at end of table.

Table 28. Natural Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.620	1.108	1.108	0.985	0.435	1.728	0.943	0.943	0.765	
Household Size										
1 Person	1.4	50.3	51.8	248	4.79	1.0	60.6	62.5	305	14.85
2 to 4 Persons	4.8	67.4	69.5	335	4.82	4.3	72.7	74.9	361	6.07
5 or More Persons .....	.6	77.4	79.8	381	4.77	.6	78.8	81.2	384	10.67
Secondary Heating										
Yes	3.1	67.0	69.1	335	4.85	2.6	73.7	76.0	369	9.76
No	3.7	63.0	65.0	311	4.78	3.3	69.1	71.3	342	6.94
Hot Water Fuel										
Natural Gas	6.2	67.3	69.4	330	4.75	5.4	74.0	76.2	364	7.03
Electricity .....	.6	39.2	40.4	239	5.91	.5	42.4	43.7	250	10.17
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Under 4,000 HDD	Q	63.9	65.9	296	4.49	Q	73.8	76.1	349	15.24
2,000 CDD or More and --										
Under 4,000 HDD	5.6	60.4	62.3	320	5.14	4.8	66.5	68.6	353	8.57

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors.

• Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, F of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 29. Electricity Consumption and Expenditures for South Region Households, 1987

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors	1.386	0.797	0.797	0.762	0.314	3.181	1.154	1.154	1.118	
South Region	30.9	11.56	39.5	813	20.61	10.5	15.27	52.1	1,058	3.28
Metropolitan Status										
Metropolitan	22.1	11.60	39.6	825	20.84	8.4	14.69	50.1	1,040	3.72
Central City	9.4	10.15	34.6	699	20.18	3.4	13.43	45.8	895	4.25
Outside Central City	12.7	12.67	43.2	918	21.23	5.0	15.55	53.1	1,139	4.88
Nonmetropolitan	8.8	11.48	39.2	784	20.02	2.1	17.60	60.0	1,129	5.93
Electricity Paid by Household										
Yes	28.7	11.88	40.5	838	20.68	9.8	15.73	53.7	1,092	3.33
No	2.2	7.37	25.1	480	19.10	.8	9.65	32.9	627	11.93
Housing Structure										
Mobile Home	2.2	10.80	36.9	775	21.03	.8	14.68	50.1	1,026	8.24
Single Family	22.2	12.55	42.8	881	20.57	6.2	18.13	61.9	1,250	3.63
Building of 2 or More Units	6.4	8.43	28.8	592	20.59	3.6	10.40	35.5	728	6.13
Number of Rooms										
1 to 3	3.9	7.45	25.4	532	20.96	2.1	8.83	30.1	640	7.15
4 to 5	14.5	10.08	34.4	715	20.79	4.6	14.38	49.1	984	3.21
6 or More	12.5	14.57	49.7	1,015	20.41	3.8	19.97	68.1	1,381	3.96
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	11.7	8.35	28.5	606	21.27	4.2	11.11	37.9	780	4.05
1,000 to 1,999	14.3	12.63	43.1	879	20.41	4.9	16.78	57.3	1,151	3.60
2,000 or More	4.9	16.16	55.1	1,116	20.24	1.5	22.15	75.6	1,539	5.85
Year of Construction										
1949 or Before	6.8	8.70	29.7	619	20.86	.7	15.58	53.2	1,091	6.74
1950 to 1974	14.3	11.30	38.6	790	20.50	3.5	14.73	50.2	1,001	4.26
1975 or After	9.7	13.96	47.6	982	20.62	6.3	15.55	59.1	1,086	4.46
Status of Unit										
Owned	20.4	13.01	44.4	912	20.54	6.3	18.02	61.5	1,245	3.82
Rented	10.5	8.76	29.9	622	20.80	4.2	11.12	38.0	774	4.61
1987 Family Income										
Less than \$10,000	7.2	7.89	26.9	563	20.93	1.8	11.12	38.0	761	5.62
\$10,000 to \$19,999	7.9	9.30	31.7	666	21.00	2.4	12.07	41.2	841	4.42
\$20,000 to \$34,999	8.2	13.05	44.5	900	20.20	3.1	16.07	54.8	1,090	4.23
\$35,000 or More	7.6	15.77	53.8	1,107	20.58	3.2	19.27	65.8	1,358	4.36
Below 100 Percent of Poverty Line	5.6	7.90	27.0	570	21.16	1.2	11.38	38.8	782	6.10
Below 125 Percent of Poverty Line	7.7	8.30	28.3	596	21.05	1.8	11.70	39.9	802	5.32
Assistance for Heating in Winter										
Yes	1.6	7.16	24.4	539	22.05	.2	13.48	46.0	926	10.02
No	29.3	11.81	40.3	829	20.56	10.3	15.31	52.2	1,060	3.30
Age of Householder										
Under 35 Years	9.5	10.74	36.6	752	20.52	4.0	13.25	45.2	914	4.22
35 to 59 Years	13.4	13.32	45.5	933	20.53	4.7	17.61	60.1	1,224	3.30
60 Years and Over	8.1	9.62	32.8	686	20.90	1.9	13.71	46.8	946	5.88
Household Size										
1 Person	7.1	7.48	25.5	528	20.67	2.6	10.33	35.2	702	4.67
2 to 4 Persons	21.1	12.64	43.1	889	20.61	7.3	16.39	55.9	1,144	3.04
5 or More Persons	2.7	14.00	47.8	978	20.47	.7	22.07	75.3	1,484	5.42

See footnotes at end of table.

Table 29. Electricity Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price per million Btu (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Secondary Heating										
Yes	13.8	13.05	44.5	912	20.48	4.3	17.69	60.4	1,230	3.90
No	17.1	10.37	35.4	733	20.74	6.2	13.60	46.4	938	3.58
Hot Water Fuel										
Natural Gas	12.6	8.91	30.4	637	20.96	1.1	8.50	29.0	603	7.79
Electricity	16.7	13.90	47.4	963	20.31	9.3	16.11	55.0	1,109	3.39
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Other	1.5	8.03	27.4	630	22.97	Q	Q	Q	Q	11.15
All-Electric Home										
Yes	9.0	16.23	55.4	1,116	20.15	9.0	16.23	55.4	1,116	4.02
No	21.9	9.64	32.9	688	20.92	1.5	9.64	32.9	715	5.29
Air Conditioning										
Yes	25.4	12.57	42.9	880	20.52	9.8	15.64	53.4	1,086	3.09
Central Unit	16.2	14.23	48.5	990	20.40	7.9	16.24	55.4	1,133	3.75
Electric	16.0	14.26	48.7	993	20.42	7.9	16.24	55.4	1,133	3.75
Individual Room Units ¹	9.2	9.68	33.0	687	20.81	1.9	13.07	44.6	883	4.63
One Unit	5.8	9.04	30.9	633	20.51	1.3	11.47	39.1	766	5.79
Two or More Units	3.4	10.77	36.7	780	21.24	.5	17.15	58.5	1,179	5.68
No	5.5	8.93	23.6	505	21.37	.8	10.50	35.8	690	7.05
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
4,000 to 5,499 HDD	8.2	10.75	36.7	694	18.91	2.0	18.33	62.5	1,113	6.98
Under 4,000 HDD	8.4	11.70	39.9	819	20.51	2.8	15.22	51.9	1,001	5.39
2,000 CDD or More and --										
Under 4,000 HDD	14.2	11.98	40.9	881	21.55	5.7	14.28	48.7	1,068	5.22

See footnotes at end of table.

Table 29. Electricity Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors	1.386	0.797	0.797	0.762	0.314	3.181	1.154	1.154	1.118	
South Atlantic Division	15.6	11.42	38.9	840	21.57	5.8	15.17	51.8	1,123	4.56
Metropolitan Status										
Metropolitan	11.9	11.59	39.6	862	21.80	5.1	15.07	51.4	1,133	5.37
Central City	4.1	9.74	33.2	709	21.34	1.6	12.55	42.8	913	8.09
Outside Central City	7.7	12.59	42.9	944	21.99	3.5	16.20	55.3	1,230	5.91
Nonmetropolitan	3.7	10.85	37.0	769	20.77	.7	15.88	54.2	1,057	4.88
Electricity Paid by Household										
Yes	14.4	11.85	40.4	874	21.63	5.5	15.72	53.7	1,163	4.61
No	1.2	6.14	21.0	418	19.95	.3	5.51	18.6	432	16.47
Housing Structure										
Mobile Home	1.5	9.47	32.3	704	21.77	.5	12.18	41.5	867	11.87
Single Family	10.8	12.75	43.5	934	21.47	3.8	17.51	59.7	1,291	5.49
Building of 2 or More Units	3.3	7.86	26.8	589	21.96	1.5	10.36	35.4	789	10.24
Number of Rooms										
1 to 3	2.0	7.20	24.6	542	22.07	1.0	8.55	29.2	665	11.97
4 to 5	7.0	9.81	33.5	733	21.91	2.5	13.66	46.6	1,009	4.86
6 or More	6.6	14.35	49.0	1,040	21.25	2.3	19.69	67.2	1,447	5.71
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	5.9	8.28	28.3	631	22.34	2.1	11.14	38.0	835	5.74
1,000 to 1,999	7.1	12.44	42.4	907	21.36	2.8	16.15	55.1	1,184	5.13
2,000 or More	2.7	15.62	53.3	1,124	21.09	.9	21.90	74.7	1,636	8.76
Year of Construction										
1949 or Before	4.1	8.85	30.2	647	21.42	.5	16.17	55.2	1,178	8.52
1950 to 1974	6.5	11.23	38.3	828	21.62	1.9	14.70	50.2	1,093	6.72
1975 or After	5.0	13.78	47.0	1,015	21.58	3.4	15.29	52.2	1,132	5.79
Status of Unit										
Owned	10.2	12.84	43.8	942	21.50	3.8	17.13	58.4	1,264	5.78
Rented	5.4	8.71	29.7	646	21.74	2.0	11.36	38.8	849	6.56
1987 Family Income										
Less than \$10,000	3.2	7.91	27.0	585	21.67	.9	10.30	35.1	766	8.09
\$10,000 to \$19,999	4.0	8.68	29.6	664	22.41	1.4	11.35	38.7	861	6.78
\$20,000 to \$34,999	3.9	12.38	42.2	889	21.05	1.5	15.93	54.4	1,134	6.14
\$35,000 or More	4.5	15.50	52.9	1,135	21.46	2.0	19.46	66.4	1,459	6.15
Below 100 Percent of Poverty Line	2.5	7.98	27.2	600	22.03	.6	10.10	34.5	771	9.41
Below 125 Percent of Poverty Line	3.3	8.15	27.8	613	22.03	.9	10.02	34.2	773	7.76
Assistance for Heating in Winter										
Yes .....	.7	7.74	26.4	582	22.04	Q	12.74	43.5	938	18.90
No	14.9	11.59	39.5	852	21.55	5.7	15.23	52.0	1,127	4.58
Age of Householder										
Under 35 Years	4.7	10.60	36.2	776	21.47	2.0	13.13	44.8	968	6.08
35 to 59 Years	6.8	12.92	44.1	951	21.58	2.7	17.40	59.4	1,292	4.98
60 Years and Over	4.0	9.83	33.5	727	21.66	1.1	13.56	46.3	1,002	9.08
Household Size										
1 Person	3.6	7.14	24.4	526	21.57	1.3	10.36	35.3	739	7.74
2 to 4 Persons	10.6	12.50	42.7	923	21.63	4.1	16.13	55.0	1,206	4.89
5 or More Persons	1.4	14.10	48.1	1,016	21.12	.4	21.04	71.8	1,519	7.09

See footnotes at end of table.

South

Table 29. Electricity Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	1.386	0.797	0.797	0.762	0.314	3.181	1.154	1.154	1.118	
Secondary Heating										
Yes	7.1	12.71	43.4	930	21.45	2.3	17.97	61.3	1,347	5.46
No	8.4	10.32	35.2	764	21.69	3.5	13.30	45.4	973	5.47
Hot Water Fuel										
Natural Gas	4.6	7.59	25.9	552	21.31	.3	5.99	20.4	474	12.85
Electricity	10.1	13.41	45.8	986	21.54	5.3	15.68	53.5	1,154	4.77
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Other .....	.8	8.48	28.9	672	23.21	Q	Q	Q	Q	14.21
All-Electric Home										
Yes	5.2	15.81	54.0	1,164	21.58	5.2	15.81	54.0	1,164	5.78
No	10.4	9.22	31.5	678	21.55	.6	9.72	33.2	774	7.45
Air Conditioning										
Yes	12.4	12.52	42.7	920	21.54	5.3	15.77	53.8	1,169	4.88
Central Unit	8.1	14.19	48.4	1,041	21.49	4.4	16.47	56.2	1,223	5.79
Electric	8.0	14.22	48.5	1,042	21.48	4.4	16.47	56.2	1,223	5.74
Individual Room Units ¹	4.3	9.40	32.1	696	21.70	.9	12.58	42.9	919	5.77
One Unit	2.4	8.76	29.9	634	21.23	.6	10.67	36.4	773	8.15
Two or More Units	1.9	10.22	34.9	775	22.21	.4	15.66	53.4	1,154	7.44
No	3.2	7.16	24.4	530	21.71	.5	8.71	29.7	634	10.48
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
4,000 to 5,499 HDD	5.1	10.19	34.8	682	19.63	1.1	18.25	62.3	1,162	9.27
Under 4,000 HDD	5.4	11.54	39.4	841	21.37	1.6	14.64	49.9	1,035	7.11
2,000 CDD or More and --										
Under 4,000 HDD	4.9	12.60	43.0	1,007	23.44	3.1	14.43	49.2	1,160	7.06

See footnotes at end of table.

South Atlantic

Electricity

Table 29. Electricity Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors	1.386	0.797	0.797	0.762	0.314	3.181	1.154	1.154	1.118	
East South Central Division	6.1	12.81	43.7	765	17.50	2.2	17.32	59.1	1,001	3.41
Metropolitan Status										
Metropolitan	3.4	13.25	45.2	792	17.53	1.3	17.09	58.3	985	3.33
Central City	1.7	11.82	40.3	703	17.43	.8	15.67	53.5	900	5.06
Outside Central City	1.7	14.71	50.2	884	17.62	.5	19.48	66.5	1,129	7.32
Nonmetropolitan	2.7	12.26	41.8	730	17.45	.9	17.65	60.2	1,022	4.95
Electricity Paid by Household										
Yes	5.7	13.11	44.7	784	17.53	2.0	17.85	60.9	1,034	3.65
No .....	.4	8.34	28.4	475	16.71	.2	11.56	39.4	629	26.87
Housing Structure										
Mobile Home .....	.4	12.58	42.9	774	18.02	.2	16.19	55.2	947	10.44
Single Family	4.5	13.85	47.2	825	17.47	1.4	19.88	67.8	1,147	3.29
Building of 2 or More Units	1.2	9.02	30.8	535	17.39	.6	11.54	39.4	667	8.69
Number of Rooms										
1 to 3 .....	.8	7.59	25.9	468	18.09	.4	9.59	32.7	574	8.98
4 to 5	2.9	11.78	40.2	705	17.55	1.1	16.51	56.3	944	4.77
6 or More	2.4	15.86	54.1	939	17.36	.8	21.86	74.6	1,267	5.48
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	2.2	8.80	30.0	542	18.07	.7	12.52	42.7	723	6.34
1,000 to 1,999	2.9	14.59	49.8	862	17.31	1.2	18.06	61.6	1,044	5.44
2,000 or More	1.0	16.80	57.3	991	17.28	.3	24.64	84.1	1,423	7.69
Year of Construction										
1949 or Before	1.2	9.88	33.7	602	17.87	.1	17.41	59.4	1,018	8.74
1950 to 1974	3.3	12.36	42.2	740	17.54	1.1	16.20	55.3	933	5.11
1975 or After	1.6	15.98	54.5	940	17.24	1.0	18.53	63.2	1,072	6.31
Status of Unit										
Owned	4.2	14.27	48.7	851	17.48	1.5	19.92	68.0	1,151	3.96
Rented	1.9	9.47	32.3	567	17.54	.8	12.31	42.0	710	7.78
1987 Family Income										
Less than \$10,000	1.6	8.25	28.1	512	18.18	.4	12.27	41.9	706	13.74
\$10,000 to \$19,999	1.6	11.80	40.3	704	17.49	.5	15.89	54.2	909	7.33
\$20,000 to \$34,999	1.8	14.34	48.9	853	17.45	.7	17.46	59.6	1,017	7.15
\$35,000 or More	1.1	18.30	62.4	1,069	17.12	.5	22.78	77.7	1,317	4.19
Below 100 Percent of Poverty Line	1.2	8.48	28.9	527	18.23	.3	13.15	44.9	743	11.89
Below 125 Percent of Poverty Line	1.6	9.20	31.4	565	18.00	.4	14.26	48.6	808	10.77
Assistance for Heating in Winter										
Yes .....	.3	7.39	25.2	488	19.34	Q	Q	Q	Q	13.50
No	5.8	13.12	44.8	780	17.44	2.2	17.38	59.3	1,003	3.45
Age of Householder										
Under 35 Years	1.8	12.46	42.5	741	17.44	.7	16.74	57.1	961	5.56
35 to 59 Years	2.6	15.40	52.5	913	17.38	1.0	19.85	67.7	1,146	5.36
60 Years and Over	1.8	9.42	32.1	573	17.84	.5	13.32	45.5	780	8.30
Household Size										
1 Person	1.6	8.07	27.5	498	18.09	.6	11.13	38.0	656	4.65
2 to 4 Persons	4.1	14.00	47.8	830	17.37	1.5	18.61	63.5	1,072	3.84
5 or More Persons .....	.4	18.89	64.4	1,126	17.47	.1	28.20	96.2	1,614	8.81

See footnotes at end of table.

Table 29. Electricity Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	1.386	0.797	0.797	0.762	0.314	3.181	1.154	1.154	1.118	
Secondary Heating										
Yes	2.6	14.89	50.8	885	17.43	1.0	19.86	67.7	1,160	4.21
No	3.4	11.21	38.3	672	17.56	1.2	15.33	52.3	875	6.08
Hot Water Fuel										
Natural Gas	1.8	8.74	29.8	548	18.37	Q	Q	Q	Q	7.38
Electricity	4.1	14.96	51.1	879	17.22	2.2	17.64	60.2	1,019	3.24
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other .....	.2	6.49	22.1	439	19.84	NC	NC	NC	NC	16.92
All-Electric Home										
Yes	2.1	17.65	60.2	1,019	16.92	2.1	17.65	60.2	1,019	3.64
No	4.0	10.19	34.8	627	18.04	Q	Q	Q	Q	5.47
Air Conditioning										
Yes	5.1	13.69	46.7	813	17.40	2.0	17.77	60.6	1,028	3.69
Central Unit	3.0	15.42	52.6	906	17.23	1.4	18.68	63.8	1,086	5.12
Electric	3.0	15.42	52.6	906	17.23	1.4	18.68	63.8	1,086	5.12
Individual Room Units ¹	2.2	11.31	38.6	684	17.72	.6	15.58	53.2	892	8.18
One Unit	1.7	10.69	36.5	646	17.71	.5	14.33	48.9	818	9.01
Two or More Units .....	.5	13.39	45.7	811	17.74	.1	20.51	70.0	1,183	13.17
No	1.0	8.06	27.5	506	18.38	.2	13.52	46.1	765	9.35
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	2.5	12.64	43.1	743	17.23	.9	18.61	63.5	1,062	7.46
Under 4,000 HDD	2.1	13.91	47.5	840	17.70	1.0	17.26	58.9	1,007	6.26
2,000 CDD or More and --										
Under 4,000 HDD	1.5	11.49	39.2	692	17.64	Q	13.79	47.0	801	19.49

See footnotes at end of table.

Table 29. Electricity Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors	1.386	0.797	0.797	0.762	0.314	3.181	1.154	1.154	1.118	
West South Central Division	9.2	11.00	37.5	800	21.31	2.5	13.73	46.8	958	6.72
Metropolitan Status										
Metropolitan	6.9	10.79	36.8	775	21.05	2.1	12.29	41.9	848	5.98
Central City	3.6	9.83	33.6	685	20.42	1.1	13.02	44.4	865	6.79
Outside Central City	3.3	11.83	40.4	872	21.61	Q	11.55	39.4	830	10.67
Nonmetropolitan	2.4	11.60	39.6	872	22.03	Q	20.14	68.7	1,452	13.63
Electricity Paid by Household										
Yes	8.6	11.13	38.0	814	21.42	2.3	13.83	47.2	974	7.49
No .....	.6	9.13	31.1	605	19.42	Q	12.92	44.1	837	16.56
Housing Structure										
Mobile Home .....	.4	14.16	48.3	1,066	22.07	Q	Q	Q	Q	17.70
Single Family	6.9	11.39	38.9	833	21.43	1.0	17.96	61.3	1,240	9.10
Building of 2 or More Units	2.0	9.01	30.7	632	20.56	1.4	9.94	33.9	688	9.58
Number of Rooms										
1 to 3	1.1	7.79	26.6	563	21.20	.8	8.84	30.1	638	13.68
4 to 5	4.7	9.44	32.2	694	21.55	1.0	13.96	47.6	962	6.00
6 or More	3.5	14.12	48.2	1,018	21.13	.7	18.74	63.9	1,301	10.05
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	3.6	8.20	28.0	606	21.65	1.4	10.35	35.3	726	8.01
1,000 to 1,999	4.4	11.65	39.7	847	21.31	.9	17.10	58.4	1,188	8.97
2,000 or More	1.2	16.83	57.4	1,197	20.85	Q	19.77	67.5	1,379	12.83
Year of Construction										
1949 or Before	1.5	7.36	25.1	559	22.26	Q	Q	Q	Q	9.38
1950 to 1974	4.5	10.64	36.3	773	21.30	.6	11.93	40.7	815	8.44
1975 or After	3.2	13.23	45.1	952	21.09	1.9	14.48	49.4	1,012	11.43
Status of Unit										
Owned	5.9	12.41	42.3	903	21.32	1.1	18.61	63.5	1,307	9.42
Rented	3.3	8.45	28.8	614	21.30	1.5	10.21	34.8	706	8.82
1987 Family Income										
Less than \$10,000	2.4	7.62	26.0	569	21.91	.5	11.66	39.8	803	10.87
\$10,000 to \$19,999	2.3	8.67	29.6	645	21.80	.5	9.97	34.0	714	8.34
\$20,000 to \$34,999	2.6	13.16	44.9	946	21.07	.9	15.23	52.0	1,076	8.36
\$35,000 or More	2.0	14.94	51.0	1,066	20.91	.7	15.86	54.1	1,083	9.72
Below 100 Percent of Poverty Line	1.9	7.45	25.4	559	22.01	.3	12.12	41.4	836	11.38
Below 125 Percent of Poverty Line	2.8	7.94	27.1	594	21.92	.5	12.42	42.4	848	9.42
Assistance for Heating in Winter										
Yes .....	.6	6.42	21.9	519	23.70	Q	Q	Q	Q	15.62
No	8.6	11.33	38.7	820	21.22	2.5	13.73	46.8	959	6.89
Age of Householder										
Under 35 Years	3.0	9.95	34.0	720	21.20	1.3	11.55	39.4	802	8.54
35 to 59 Years	4.0	12.69	43.3	916	21.15	1.0	15.99	54.6	1,123	7.15
60 Years and Over	2.3	9.40	32.1	702	21.88	.3	15.19	51.8	1,051	10.22
Household Size										
1 Person	2.0	7.63	26.0	555	21.32	.8	9.69	33.1	674	11.43
2 to 4 Persons	6.4	11.97	40.8	870	21.29	1.6	14.97	51.1	1,050	6.76
5 or More Persons .....	.9	11.57	39.5	848	21.48	.2	19.41	66.2	1,314	12.10

See footnotes at end of table.

Table 29. Electricity Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	1.386	0.797	0.797	0.762	0.314	3.181	1.154	1.154	1.118	
Secondary Heating										
Yes	4.1	12.43	42.4	896	21.12	1.0	14.99	51.2	1,030	9.38
No	5.2	9.88	33.7	725	21.51	1.5	12.88	44.0	910	6.56
Hot Water Fuel										
Natural Gas	6.2	9.94	33.9	726	21.43	Q	9.62	32.8	670	9.22
Electricity	2.6	14.16	48.3	1,008	20.87	1.8	15.52	53.0	1,084	10.42
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	7.97	27.2	644	23.67	NC	NC	NC	NC	38.21
All-Electric Home										
Yes	1.7	15.70	53.6	1,089	20.32	1.7	15.70	53.6	1,089	10.93
No	7.5	9.94	33.9	735	21.67	.8	9.76	33.3	695	8.79
Air Conditioning										
Yes	7.9	11.93	40.7	861	21.15	2.5	13.70	46.7	957	7.06
Central Unit	5.1	13.59	46.4	960	20.70	2.2	14.24	48.6	986	7.43
Electric	5.0	13.64	46.5	967	20.77	2.2	14.24	48.6	986	8.33
Individual Room Units ¹	2.8	8.83	30.1	676	22.42	.3	9.93	33.9	757	10.77
One Unit	1.7	7.87	26.9	618	23.01	Q	8.29	28.3	661	12.50
Two or More Units	1.0	10.49	35.8	775	21.66	Q	Q	Q	Q	10.11
No	1.4	5.57	19.0	445	23.41	Q	Q	Q	Q	11.09
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Under 4,000 HDD	Q	7.38	25.2	632	25.09	Q	Q	Q	Q	21.55
2,000 CDD or More and --										
Under 4,000 HDD	7.8	11.67	39.8	836	20.98	2.4	14.15	48.3	982	7.61

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

¹ Homes having both a central air conditioner and one or more window or wall units are not included here. They are included under "Central Unit".

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, E of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 30. Fuel Oil or Kerosene Consumption and Expenditures for South Region Households, 1987

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.399	1.139	1.147	1.071	0.275	1.690	1.062	1.070	0.967	
South Region	4.6	269	37.0	233	6.29	2.3	456	62.8	391	6.53
Metropolitan Status										
Metropolitan	2.4	221	30.4	191	6.30	1.1	402	55.4	348	9.22
Central City	1.2	237	32.6	203	6.20	.5	420	58.0	374	18.65
Outside Central City	1.3	206	28.3	181	6.40	.6	385	53.1	324	16.20
Nonmetropolitan	2.2	323	44.3	278	6.28	1.2	506	69.5	430	8.27
Fuel Oil or Kerosene Paid by Household										
Yes	4.3	269	37.0	236	6.38	2.2	455	62.6	390	6.62
No .....	.4	271	37.6	195	5.19	Q	Q	Q	Q	29.86
Housing Structure										
Mobile Home .....	.5	275	37.5	249	6.65	.3	383	52.2	335	10.55
Single Family	3.6	278	38.3	242	6.33	1.8	477	65.7	407	7.03
Building of 2 or More Units .....	.5	199	27.6	148	5.38	Q	Q	Q	Q	20.67
Number of Rooms										
1 to 3 .....	.3	261	35.9	208	5.78	Q	Q	Q	Q	23.35
4 to 5	2.6	233	32.0	206	6.43	1.3	388	53.2	340	7.60
6 or More	1.8	323	44.5	276	6.20	.9	554	76.6	464	8.01
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	1.7	218	29.7	192	6.48	.8	358	48.8	320	10.79
1,000 to 1,999	2.3	267	36.7	229	6.25	1.2	432	59.5	367	6.82
2,000 or More .....	.7	409	56.6	346	6.10	.3	829	114.9	686	14.06
Year of Construction										
1949 or Before	1.5	357	49.2	307	6.24	.8	580	80.1	493	11.99
1950 to 1974	2.1	286	39.2	247	6.29	1.3	398	54.7	344	5.84
1975 or Aiter	1.0	107	14.7	95	6.46	.2	297	40.8	252	19.58
Status of Unit										
Owned	3.3	271	37.2	236	6.34	1.6	472	65.0	403	7.79
Rented	1.4	266	36.5	225	6.16	.7	421	57.9	364	10.98
1987 Family Income										
Less than \$10,000	1.1	295	40.4	263	6.50	.6	442	60.7	390	16.75
\$10,000 to \$19,999	1.4	276	37.9	241	6.35	.7	452	62.1	394	9.94
\$20,000 to \$34,999	1.4	244	33.5	207	6.18	.6	412	56.8	350	12.81
\$35,000 or More .....	.8	267	37.0	223	6.05	.3	576	79.8	464	16.07
Below 100 Percent of Poverty Line .....	.9	222	30.2	206	6.81	.5	324	44.2	294	14.57
Below 125 Percent of Poverty Line	1.2	220	30.0	202	6.71	.6	353	48.2	316	13.08
Assistance for Heating in Winter										
Yes .....	.3	230	31.3	225	7.19	.2	300	40.8	282	19.86
No	4.4	272	37.3	233	6.24	2.1	469	64.7	400	6.36
Age of Householder										
Under 35 Years	1.2	225	30.9	195	6.32	.6	367	50.4	315	8.90
35 to 59 Years	2.2	233	32.0	205	6.42	.9	466	64.1	403	11.07
60 Years and Over	1.2	380	52.3	320	6.11	.7	521	71.8	442	10.76

See footnotes at end of table.

Table 30. Fuel Oil or Kerosene Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.399	1.139	1.147	1.071	0.275	1.690	1.062	1.070	0.967	
Household Size										
1 Person	1.0	244	33.6	211	6.29	0.5	400	55.0	356	15.67
2 to 4 Persons	3.3	279	38.3	240	6.27	1.7	469	64.6	398	8.57
5 or More Persons .....	.4	251	34.4	221	6.41	.1	491	67.6	423	21.63
Secondary Heating										
Yes	3.8	229	31.5	197	6.26	1.5	454	62.6	385	8.83
No .....	.9	444	61.1	387	6.34	.8	460	63.2	401	9.58
Hot Water Fuel										
Natural Gas .....	.7	259	35.8	206	5.75	Q	Q	Q	Q	31.06
Electricity	3.6	262	35.9	227	6.30	1.9	435	59.8	369	7.55
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Other .....	.3	Q	Q	Q	7.62	Q	Q	Q	Q	40.44
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
4,000 to 5,499 HDD	2.2	342	47.1	287	6.10	1.1	552	76.1	465	9.24
Under 4,000 HDD	1.6	221	30.3	198	6.52	.8	408	56.0	358	10.01
2,000 CDD or More and --										
Under 4,000 HDD .....	.6	94	12.7	Q	7.67	.3	Q	Q	Q	29.07

See footnotes at end of table.

Table 30. Fuel Oil or Kerosene Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.399	1.139	1.147	1.071	0.275	1.690	1.062	1.070	0.967	
South Atlantic Division	3.6	298	41.1	256	6.24	2.0	463	63.8	397	6.99
Metropolitan Status										
Metropolitan	1.9	246	34.0	214	6.29	1.0	402	55.5	352	9.71
Central City .....	.9	285	39.4	242	6.16	.5	439	60.6	389	20.89
Outside Central City	1.0	210	28.9	187	6.47	.5	366	50.5	314	18.72
Nonmetropolitan	1.6	360	49.5	306	6.19	1.0	521	71.7	441	8.70
Fuel Oil or Kerosene Paid by Household										
Yes	3.2	301	41.4	263	6.34	1.9	461	63.6	397	7.00
No .....	.4	271	37.6	195	5.19	Q	Q	Q	Q	29.86
Housing Structure										
Mobile Home .....	.5	280	38.1	254	6.66	.3	371	50.6	325	11.76
Single Family	2.7	312	43.0	270	6.28	1.5	489	67.5	419	7.38
Building of 2 or More Units .....	.4	235	32.5	174	5.35	Q	Q	Q	Q	22.78
Number of Rooms										
1 to 3 .....	.2	319	43.9	252	5.75	Q	Q	Q	Q	26.63
4 to 5	2.0	241	33.0	212	6.41	1.0	375	51.5	330	8.10
6 or More	1.3	379	52.3	322	6.16	.8	557	77.0	469	8.47
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	1.4	227	31.1	201	6.47	.7	363	49.6	327	12.61
1,000 to 1,999	1.7	306	42.2	259	6.14	1.0	441	60.9	373	6.61
2,000 or More .....	.5	465	64.4	395	6.14	.3	803	111.2	672	15.54
Year of Construction										
1949 or Before	1.3	363	50.1	314	6.27	.8	563	77.7	481	13.09
1950 to 1974	1.5	313	43.1	268	6.22	1.0	407	55.9	351	5.69
1975 or After .....	.7	139	19.1	118	6.17	Q	Q	Q	Q	18.23
Status of Unit										
Owned	2.4	305	42.0	264	6.28	1.4	480	66.2	410	8.14
Rented	1.2	283	39.0	240	6.15	.6	423	58.3	368	12.56
1987 Family Income										
Less than \$10,000 .....	.9	300	41.1	268	6.53	.5	430	59.0	381	19.81
\$10,000 to \$19,999	1.1	295	40.6	256	6.31	.6	474	65.2	412	10.97
\$20,000 to \$34,999	1.0	281	38.7	235	6.07	.5	430	59.4	364	13.50
\$35,000 or More .....	.6	332	46.0	275	5.98	.3	557	77.2	454	18.24
Below 100 Percent of Poverty Line .....	.7	224	30.5	210	6.87	.4	313	42.8	287	16.98
Below 125 Percent of Poverty Line .....	.9	226	30.9	210	6.80	.5	338	46.2	308	16.21
Assistance for Heating in Winter										
Yes .....	.2	238	32.4	235	7.25	.1	301	41.0	284	23.78
No	3.3	302	41.6	257	6.19	1.8	475	65.6	406	6.81
Age of Householder										
Under 35 Years	1.0	237	32.6	206	6.32	.6	365	50.3	315	9.69
35 to 59 Years	1.6	292	40.1	254	6.33	.7	493	67.8	425	12.76
60 Years and Over	1.0	367	50.7	308	6.07	.6	515	71.1	437	12.62

See footnotes at end of table.

Table 30. Fuel Oil or Kerosene Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Fuel Oil or Kerosene Used					Fuel Oil or Kerosene Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.399	1.139	1.147	1.071	0.275	1.690	1.062	1.070	0.967	
Household Size										
1 Person	0.7	292	40.2	252	6.27	0.4	415	57.2	371	16.83
2 to 4 Persons	2.5	302	41.6	259	6.21	1.4	474	65.4	402	9.40
5 or More Persons .....	.3	282	38.7	246	6.36	.1	491	67.6	423	21.47
Secondary Heating										
Yes	2.8	252	34.7	214	6.18	1.2	459	63.3	389	9.80
No .....	.8	467	64.3	408	6.34	.7	469	64.6	410	9.96
Hot Water Fuel										
Natural Gas .....	.6	287	39.8	Q	5.70	Q	Q	Q	Q	31.39
Electricity	2.5	296	40.7	255	6.26	1.6	433	59.7	368	8.12
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Other	Q	88	11.9	103	8.64	Q	Q	Q	Q	38.30
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
4,000 to 5,499 HDD	1.6	367	50.8	306	6.03	.9	550	75.9	464	11.60
Under 4,000 HDD	1.4	259	35.4	229	6.47	.7	426	58.5	374	9.15
2,000 CDD or More and --										
Under 4,000 HDD .....	.5	Q	Q	Q	7.76	.3	Q	Q	Q	26.27

a No applicable RSE row factor.
 NC No cases in sample.
 Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.
 Notes: • Data on fuel oil or kerosene consumption in the East South Central Division and the West South Central Division are not presented due to a scarcity of data. • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors.
 • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.
 Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 31. Liquefied Petroleum Gas Consumption and Expenditures for South Region Households, 1987

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.674	1.009	1.009	0.839	0.436	1.909	1.002	1.002	0.835	
South Region	3.3	392	35.8	342	9.56	2.1	494	45.1	402	9.13
Metropolitan Status										
Metropolitan	1.7	386	35.2	346	9.83	1.1	454	41.5	374	13.80
Central City	.4	348	31.8	373	11.73	.3	426	38.9	428	22.42
Outside Central City	1.3	398	36.4	338	9.29	.8	463	42.3	358	17.95
Nonmetropolitan	1.6	398	36.3	337	9.28	1.0	535	48.9	430	12.30
LPG Paid by Household										
Yes	3.2	409	37.4	354	9.47	2.0	508	46.4	410	8.89
No	.2	91	8.3	133	16.05	Q	Q	Q	Q	31.75
Housing Structure										
Mobile Home	1.0	282	25.8	304	11.78	.7	324	29.6	311	14.46
Single Family	2.4	436	39.8	357	8.98	1.4	577	52.7	446	11.16
Building of 2 or More Units	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Number of Rooms										
1 to 3	.4	157	14.3	169	11.84	Q	269	24.6	259	25.51
4 to 5	2.1	374	34.2	330	9.66	1.5	452	41.3	365	11.69
6 or More	.9	518	47.3	432	9.13	.5	659	60.2	537	11.39
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	1.6	288	26.3	287	10.94	1.1	357	32.6	325	10.01
1,000 to 1,999	1.5	510	46.6	406	8.73	.9	630	57.5	476	12.46
2,000 or More	.3	378	34.5	322	9.34	Q	Q	Q	Q	42.04
Year of Construction										
1949 or Before	.9	387	35.3	337	9.52	.6	480	43.9	382	16.81
1950 to 1974	1.2	357	32.6	346	10.59	.8	451	41.2	401	11.77
1975 or After	1.2	432	39.5	342	8.67	.7	548	50.0	418	16.17
Status of Unit										
Owned	2.5	433	39.5	374	9.47	1.7	526	48.0	428	9.32
Rented	.8	270	24.7	246	9.95	.5	376	34.3	305	15.50
1987 Family Income										
Less than \$10,000	1.3	302	27.6	266	9.65	.7	394	36.0	331	12.37
\$10,000 to \$19,999	1.0	437	39.9	377	9.45	.8	478	43.7	378	17.27
\$20,000 to \$34,999	.7	397	36.2	362	10.00	.4	587	53.6	504	13.10
\$35,000 or More	.4	561	51.2	465	9.07	.2	724	66.1	548	23.88
Below 100 Percent of Poverty Line	1.1	394	36.0	312	8.68	.7	493	45.0	370	18.16
Below 125 Percent of Poverty Line	1.4	368	33.6	297	8.85	.8	492	44.9	371	16.83
Assistance for Heating in Winter										
Yes	.4	512	46.8	345	7.37	.3	699	63.9	465	27.39
No	2.9	373	34.1	342	10.02	1.9	466	42.6	393	8.81
Age of Householder										
Under 35 Years	.8	351	32.0	342	10.67	.5	413	37.7	354	17.11
35 to 59 Years	1.5	409	37.3	343	9.18	.9	536	48.9	420	13.39
60 Years and Over	1.0	398	36.3	341	9.38	.7	497	45.4	412	17.00

See footnotes at end of table.

Table 31. Liquefied Petroleum Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.674	1.009	1.009	0.839	0.436	1.909	1.002	1.002	0.835	
Household Size										
1 Person	0.7	357	32.6	303	9.32	0.6	424	38.7	341	17.79
2 to 4 Persons	2.3	396	36.2	351	9.71	1.4	520	47.5	431	9.66
5 or More Persons .....	.3	440	40.2	363	9.02	.2	505	46.1	371	20.15
Secondary Heating										
Yes	1.8	375	34.3	333	9.71	1.1	445	40.7	385	9.46
No	1.5	411	37.5	352	9.40	1.0	544	49.7	419	13.43
Hot Water Fuel										
Natural Gas	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Electricity	2.1	341	31.2	327	10.49	1.4	444	40.6	388	9.99
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	1.2	477	43.6	367	8.42	.7	587	53.6	428	16.17
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
4,000 to 5,499 HDD .....	.6	420	38.4	372	9.69	.3	652	59.6	552	12.66
Under 4,000 HDD	1.3	507	46.3	419	9.05	.7	660	60.3	495	14.02
2,000 CDD or More and --										
Under 4,000 HDD	1.4	280	25.5	263	10.29	1.0	326	29.8	288	17.19

See footnotes at end of table.

Table 31. Liquefied Petroleum Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used						Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price per million Btu	Households (millions)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)		
RSE Column Factors:	1.674	1.009	1.009	0.839	0.436	1.909	1.002	1.002	0.835		
South Atlantic Division	1.9	334	30.5	341	11.15	1.1	422	38.6	397	14.17	
Metropolitan Status											
Metropolitan	1.2	296	27.0	322	11.93	.7	322	29.4	322	14.56	
Central City .....	.4	348	31.8	373	11.73	.3	426	38.9	428	22.42
Outside Central City .....	.8	269	24.6	296	12.05	.5	268	24.5	267	22.13
Nonmetropolitan .....	.7	408	37.2	376	10.08	Q	657	60.0	573	25.43
LPG Paid by Household											
Yes	1.7	361	32.9	363	11.02	1.0	445	40.7	414	13.93	
No .....	.2	91	8.3	133	16.05	Q	Q	Q	Q	31.75
Housing Structure											
Mobile Home .....	.7	249	22.7	296	13.01	.5	278	25.4	290	20.54
Single Family	1.2	387	35.3	368	10.42	.6	546	49.6	489	15.81	
Building of 2 or More Units	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	
Number of Rooms											
1 to 3 .....	.3	126	11.5	159	13.83	Q	Q	Q	Q	27.80
4 to 5	1.1	312	28.5	338	11.85	.7	382	34.9	373	14.80	
6 or More .....	.5	491	44.8	440	9.83	.3	586	53.5	500	18.52
Measured Heated Area of Residence (square feet)											
Fewer than 1,000	1.1	247	22.6	279	12.37	.6	316	28.8	320	16.21	
1,000 to 1,999 .....	.6	439	40.1	430	10.74	.3	549	50.1	505	14.39
2,000 or More	Q	Q	Q	Q	Q	Q	Q	Q	Q	a	
Year of Construction											
1949 or Before .....	.6	327	29.9	320	10.72	.4	392	35.8	346	29.47
1950 to 1974 .....	.7	293	26.7	336	12.56	.3	383	35.0	402	20.39
1975 or After .....	.6	395	36.1	368	10.20	.4	491	44.9	445	18.56
Status of Unit											
Owned	1.3	391	35.7	394	11.02	.8	458	41.8	427	14.63	
Rented .....	.6	211	19.3	226	11.70	.2	304	27.8	299	24.07
1987 Family Income											
Less than \$10,000 .....	.7	252	23.0	273	11.88	.3	366	33.5	371	23.51
\$10,000 to \$19,999 .....	.6	297	27.1	341	12.58	.5	316	28.9	324	20.11
\$20,000 to \$34,999 .....	.3	377	34.5	368	10.39	.2	572	52.2	516	17.89
\$35,000 or More .....	.3	560	51.2	474	9.27	Q	Q	Q	Q	25.63
Below 100 Percent of Poverty Line .....	.5	306	27.9	321	11.50	.3	378	34.5	379	22.89
Below 125 Percent of Poverty Line .....	.7	267	24.4	285	11.67	.3	388	35.4	386	22.01
Assistance for Heating in Winter											
Yes	Q	Q	Q	Q	Q	Q	Q	Q	Q	a	
No	1.8	331	30.3	340	11.24	1.0	415	37.9	392	15.01	
Age of Householder											
Under 35 Years .....	.5	331	30.2	373	12.36	.3	417	38.1	388	23.95
35 to 59 Years .....	.9	298	27.2	295	10.83	.5	358	32.7	338	17.06
60 Years and Over .....	.5	398	36.3	383	10.54	.3	518	47.3	490	27.93

See footnotes at end of table.

Table 31. Liquefied Petroleum Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used						Liquefied Petroleum Gas Used as Main Heating Fuel						RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price per million Btu (dollars)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)				
RSE Column Factors:	1.674	1.009	1.009	0.839	0.436	1.909	1.002	1.002	0.835				
Household Size													
1 Person	0.4	350	32.0	326	10.18	Q	Q	Q	Q	31.09			
2 to 4 Persons	1.3	335	30.6	350	11.43	0.7	432	39.5	420	12.90			
5 or More Persons	Q	289	26.4	307	11.63	Q	Q	Q	Q	25.04			
Secondary Heating													
Yes	1.1	362	33.0	355	10.75	7	414	37.8	394	15.13			
No .....	.8	295	27.0	320	11.85	.4	437	39.9	401	20.92		
Hot Water Fuel													
Natural Gas	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC			
Electricity	1.3	312	28.5	325	11.42	.8	392	35.8	366	17.36			
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC			
Other .....	.8	386	35.2	376	10.66	Q	Q	Q	Q	18.81		
Climate Zone													
Under 2,000 CDD and--	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC			
Over 7,000 HDD	Q	Q	Q	Q	Q	NC	NC	NC	NC	NC			
5,500 to 7,000 HDD	Q	409	37.4	379	10.13	NC	NC	NC	NC	a			
4,000 to 5,499 HDD	Q	442	40.4	435	10.78	Q	Q	Q	Q	41.56			
Under 4,000 HDD .....	.7					.3	603	55.1	519	22.11		
2,000 CDD or More and --													
Under 4,000 HDD .....	.9	226	20.7	255	12.31	.6	256	23.4	276	20.86		

See footnotes at end of table.

Table 31. Liquefied Petroleum Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.674	1.009	1.009	0.839	0.436	1.909	1.002	1.002	0.835	
East South Central Division	0.8	453	41.3	378	9.14	0.5	570	52.1	461	8.30
Metropolitan Status										
Metropolitan .....	.2	569	51.9	471	9.06	.2	730	66.7	581	15.57
Central City	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Outside Central City .....	.2	569	51.9	471	9.06	.2	730	66.7	581	15.57
Nonmetropolitan .....	.5	406	37.1	340	9.18	.4	501	45.8	410	8.38
LPG Paid by Household										
Yes .....	.8	453	41.3	378	9.14	.5	570	52.1	461	8.30
No	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Housing Structure										
Mobile Home .....	.2	449	41.0	370	9.03	.1	486	44.4	397	11.71
Single Family .....	.6	454	41.4	380	9.17	.4	601	54.9	485	10.36
Building of 2 or More Units	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Number of Rooms										
1 to 3	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
4 to 5 .....	.4	391	35.7	328	9.20	.3	472	43.1	381	11.78
6 or More .....	.2	641	58.5	533	9.11	.2	792	72.3	647	9.24
Measured Heated Area of Residence (square feet)										
Fewer than 1,000 .....	.3	423	38.6	344	8.92	.3	476	43.5	380	8.74
1,000 to 1,999 .....	.4	528	48.2	441	9.14	.3	670	61.2	549	13.19
2,000 or More	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Year of Construction										
1949 or Before	Q	524	47.8	431	9.01	Q	690	63.0	558	14.11
1950 to 1974 .....	.4	498	45.5	407	8.96	.3	592	54.1	474	9.34
1975 or After .....	.2	313	28.6	282	9.87	.1	424	38.7	356	20.31
Status of Unit										
Owned .....	.7	455	41.6	381	9.16	.5	579	52.9	471	9.31
Rented .....	.1	429	39.1	352	8.99	Q	Q	Q	Q	16.28
1987 Family Income										
Less than \$10,000 .....	.3	392	35.8	312	8.73	.2	522	47.7	400	10.95
\$10,000 to \$19,999 .....	.2	424	38.8	369	9.52	.1	456	41.6	396	12.09
\$20,000 to \$34,999 .....	.2	493	45.0	417	9.26	.2	628	57.3	510	16.38
\$35,000 or More	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Below 100 Percent of Poverty Line .....	.3	381	34.8	303	8.69	.2	506	46.2	386	12.12
Below 125 Percent of Poverty Line .....	.3	378	34.6	303	8.77	.2	495	45.2	380	12.55
Assistance for Heating in Winter										
Yes .....	.1	358	32.7	273	8.36	Q	Q	Q	Q	24.24
No .....	.6	470	42.9	396	9.24	.5	575	52.5	472	8.50
Age of Householder										
Under 35 Years .....	.2	351	32.1	297	9.26	.1	404	36.9	337	21.37
35 to 59 Years .....	.3	534	48.8	446	9.14	.2	643	58.7	517	10.53
60 Years and Over .....	.3	411	37.6	341	9.09	.2	600	54.8	482	14.03

See footnotes at end of table.

Table 31. Liquefied Petroleum Gas Consumption and Expenditures for South Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.674	1.009	1.009	0.839	0.436	1.909	1.002	1.002	0.835	
Household Size										
1 Person	0.1	402	36.7	331	9.01	0.1	506	46.2	403	15.23
2 to 4 Persons .....	.5	451	41.2	379	9.21	.4	579	52.9	469	10.87
5 or More Persons	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Secondary Heating										
Yes .....	.4	427	39.0	349	8.95	.2	566	51.7	448	8.12
No .....	.4	478	43.7	407	9.31	.3	573	52.4	471	14.57
Hot Water Fuel										
Natural Gas	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Electricity .....	.6	446	40.7	376	9.24	.4	568	51.8	464	9.85
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other .....	.2	473	43.2	383	8.88	.1	579	52.8	452	10.70
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
4,000 to 5,499 HDD .....	.3	429	39.1	366	9.35	.2	624	57.0	506	18.12
Under 4,000 HDD .....	.3	491	44.8	401	8.93	.3	556	50.8	447	7.60
2,000 CDD or More and --										
Under 4,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • Data on LPG in the West South Central Division are not presented due to a scarcity of data. • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 32. Wood Consumption for South Region Households for Year Ending November 1987

Household Characteristics	Households Burning Wood		Cords Burned		Cords Burned per Household	RSE Row Factors
	(million)	(percent)	(million)	(percent)		
RSE Column Factors:	0.886	0.758	1.401	1.074	0.889	
South Region	7.5	100.0	13.2	100.0	1.8	9.12
Census Division						
South Atlantic	3.8	50.8	6.8	51.4	1.8	12.13
East South Central	1.7	22.3	4.0	30.4	2.4	20.33
West South Central	2.0	26.9	2.4	18.1	1.2	22.68
Metropolitan Status						
Metropolitan	4.9	64.3	5.2	39.5	1.1	11.85
Central City	1.3	17.8	1.1	8.4	.8	18.93
Outside Central City	3.5	46.5	4.1	31.2	1.2	14.66
Nonmetropolitan	2.7	35.7	8.0	60.5	3.0	12.37
Measured Heated Area of Residence (square feet)						
Fewer than 1,000	1.3	17.7	2.8	21.0	2.1	14.68
1,000 to 1,999	4.1	53.9	7.7	57.9	1.9	9.31
2,000 or More	2.1	28.4	2.8	21.1	1.3	13.22
1987 Family Income						
Less than \$10,000	1.1	14.8	3.9	29.5	3.5	16.13
\$10,000 to \$19,999	1.3	16.7	2.7	20.2	2.1	12.97
\$20,000 to \$34,999	2.1	27.3	3.6	27.0	1.7	15.13
\$35,000 or More	3.1	41.2	3.1	23.3	1.0	13.17
Assistance for Heating in Winter						
Yes .....	.3	4.4	1.5	11.0	4.4	23.74
No	7.2	95.6	11.8	89.0	1.6	5.17
Amount of Wood Burned						
Less than 2 Cords	4.9	64.4	2.3	17.5	.5	9.61
2 to 4 Cords	1.7	22.8	4.4	33.3	2.6	10.75
More than 4 Cords	1.0	12.9	6.5	49.1	6.7	12.32
Wood is Main Heating Fuel						
Yes	1.9	24.8	7.1	53.5	3.8	13.45
No	5.7	75.2	6.2	46.5	1.1	8.11
Year of Construction						
1949 or Before	1.4	18.8	4.3	32.4	3.0	12.50
1950 to 1974	2.8	36.5	4.1	31.2	1.5	13.08
1975 or After	3.4	44.7	4.8	36.5	1.4	13.15
Climate Zone						
Under 2,000 CDD and--						
Over 7,000 HDD	NC	NC	NC	NC	NC	NC
5,500 to 7,000 HDD	Q	Q	Q	Q	Q	a
4,000 to 5,499 HDD	2.5	33.2	4.7	35.7	1.9	22.50
Under 4,000 HDD	2.2	29.1	5.3	40.2	2.4	20.91
2,000 CDD or More and --						
Under 4,000 HDD	2.7	35.8	2.7	20.3	1.0	15.88

^a No applicable RSE row factor.

^{NC} No cases in sample.

^Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Percentages are calculated on unrounded numbers. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

South

Wood

Table 33. Energy Consumption and Expenditures for West Region Households, 1987

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
		0.423	0.466	0.477	0.597	0.599	0.513	0.515	3.980	3.539	3.026		2.637
RSE Column Factors:	0.423	0.466	0.477	0.597	0.599	0.513	0.515	3.980	3.539	3.026	2.637	
West Region	18.3	1.42	15.0	0.88	4.4	0.48	10.0	0.02	0.1	0.05	0.4	7.66
Metropolitan Status												
Metropolitan	15.5	1.22	12.7	.79	4.1	.39	8.3	Q	.1	.02	.2	7.97
Central City	6.9	.54	5.2	.38	1.9	.15	3.3	Q	Q	Q	Q	6.97
Outside Central City	8.6	.68	7.5	.41	2.2	.24	5.0	Q	.1	.02	.2	11.46
Nonmetropolitan	2.8	.21	2.3	.08	.4	.09	1.7	Q	Q	Q	.2	20.52
Payment Method for Utilities												
All Paid by Household	14.5	1.21	12.8	.72	3.6	.42	8.7	.02	.1	.04	.4	9.71
Some or None Paid by Household, Other Method	3.8	.22	2.2	.15	.8	.06	1.3	NC	NC	Q	Q	37.49
Housing Structure												
Mobile Home	1.0	.08	.7	.04	.2	.03	.4	Q	Q	.01	.1	31.47
Single Family	11.5	1.04	11.0	.63	3.2	.35	7.4	.02	.1	.04	.4	9.18
Building of 2 or More Units	5.8	.31	3.2	.20	1.0	.11	2.2	Q	Q	Q	Q	20.95
Number of Rooms												
1 to 3	3.0	.13	1.3	.08	.4	.04	.9	NC	NC	Q	*	17.24
4 to 5	8.2	.57	6.0	.34	1.7	.20	4.0	.01	*	.03	.3	12.46
6 or More	7.1	.73	7.7	.46	2.4	.24	5.2	.01	.1	Q	.1	10.65
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	7.1	.40	4.2	.25	1.2	.13	2.7	Q	Q	.02	.2	12.01
1,000 to 1,999	3.0	.64	6.9	.39	1.9	.23	4.8	.01	*	.01	.1	11.75
2,000 or More	3.2	.39	4.0	.24	1.3	.12	2.5	Q	.1	Q	Q	17.15
Year of Construction												
1949 or Before	4.5	.34	3.2	.22	1.1	.10	2.0	.01	*	Q	.1	15.29
1950 to 1974	8.7	.72	7.4	.46	2.4	.22	4.6	Q	.1	.03	.3	11.00
1975 or After	5.1	.37	4.4	.19	.9	.17	3.4	Q	Q	Q	Q	19.14
Status of Unit												
Owned	11.0	.99	10.6	.60	3.0	.34	7.1	.02	.1	.04	.3	9.81
Rented	7.3	.43	4.4	.28	1.4	.14	2.9	Q	Q	.01	.1	14.94
1987 Family Income												
Less than \$10,000	2.9	.19	1.9	.12	.6	.06	1.2	Q	Q	Q	Q	18.63
\$10,000 to \$19,999	3.7	.27	2.6	.18	.8	.08	1.6	Q	Q	Q	Q	20.19
\$20,000 to \$34,999	5.0	.35	3.8	.21	1.0	.13	2.6	*	*	.01	.1	11.05
\$35,000 or More	6.7	.61	6.7	.37	2.0	.22	4.6	Q	*	.01	.1	13.08
Below 100 Percent of Poverty Line	1.8	.13	1.3	.08	.4	.04	.9	Q	Q	Q	Q	21.77
Below 125 Percent of Poverty Line	2.9	.21	2.1	.13	.6	.07	1.4	Q	Q	Q	Q	18.94
Assistance for Heating in Winter												
Yes .....	.8	.06	.5	.04	.2	.02	.3	Q	Q	Q	Q	24.13
No	17.5	1.37	14.5	.84	4.2	.47	9.7	.02	.1	.05	.4	7.73
Age of Householder												
Under 35 Years	6.2	.43	4.6	.27	1.4	.15	3.2	Q	Q	.01	.1	16.07
35 to 59 Years	7.5	.64	6.8	.40	2.0	.22	4.6	Q	*	.02	.2	10.07
60 Years and Over	4.7	.35	3.6	.20	1.0	.12	2.3	.01	.1	Q	.2	15.25

See footnotes at end of table.

Table 33. Energy Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.423	0.466	0.477	0.597	0.599	0.513	0.515	3.990	3.539	3.026	2.637	
Household Size												
1 Person	4.1	0.22	2.2	0.13	0.6	0.08	1.5	*	*	Q	Q	14.68
2 to 4 Persons	12.1	.98	10.2	.61	3.1	.33	6.8	0.01	0.1	0.03	0.3	8.42
5 or More Persons	2.2	.23	2.5	.14	.8	.07	1.7	Q	Q	.01	.1	22.03
Secondary Heating												
Yes	8.9	.76	8.1	.44	2.2	.28	5.5	.02	.1	.03	.3	11.22
No	9.4	.66	6.9	.44	2.2	.21	4.5	Q	Q	.02	.1	9.04
Hot Water Fuel												
Natural Gas	12.4	1.07	10.0	.82	4.1	.25	5.8	Q	Q	NC	NC	8.74
Electricity	4.9	.29	4.1	.05	.2	.21	3.6	.02	.1	.01	.1	16.43
Fuel Oil or Kerosene	Q	Q	Q	NC	NC	Q	Q	Q	Q	NC	NC	a
Other	1.0	.07	.9	.01	.1	.02	.6	Q	Q	.03	.3	36.56
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD .....	.9	.11	.8	.07	.2	.03	.5	Q	Q	Q	Q	34.85
5,500 to 7,000 HDD	3.6	.32	2.9	.20	.9	.12	1.9	Q	Q	Q	Q	34.96
4,000 to 5,499 HDD	2.2	.17	1.8	.07	.4	.08	1.3	Q	Q	Q	Q	71.41
Under 4,000 HDD	9.5	.68	7.3	.47	2.5	.19	4.6	Q	Q	Q	Q	18.71
2,000 CDD or More and --												
Under 4,000 HDD	2.2	.14	2.2	.07	.4	.07	1.7	Q	Q	Q	.1	46.24

See footnotes at end of table.

Table 33. Energy Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.423	0.466	0.477	0.597	0.599	0.513	0.515	3.980	3.539	3.026	2.637	
Mountain Division	4.4	0.46	4.2	0.31	1.4	0.12	2.6	Q	Q	Q	Q	15.59
Metropolitan Status												
Metropolitan	3.1	.32	3.0	.23	1.1	.08	1.9	*	*	Q	Q	14.05
Central City	1.8	.18	1.6	.14	.6	.04	1.0	Q	Q	Q	Q	22.14
Outside Central City	1.3	.14	1.3	.10	.4	.04	.9	Q	*	Q	Q	29.73
Nonmetropolitan	1.4	.14	1.2	.08	.3	.04	.7	Q	Q	Q	Q	33.76
Payment Method for Utilities												
All Paid by Household	3.7	.39	3.7	.26	1.2	.11	2.3	Q	Q	Q	Q	16.21
Some or None Paid by Household, Other Method .....	.8	.07	.5	.05	.2	.01	.3	NC	NC	Q	Q	66.11
Housing Structure												
Mobile Home .....	.5	.04	.4	.03	.1	.01	.2	Q	Q	Q	Q	54.16
Single Family	3.1	.35	3.2	.23	1.0	.10	2.0	Q	Q	Q	Q	16.53
Building of 2 or More Units .....	.9	.07	.6	.05	.2	.02	.4	NC	NC	NC	NC	69.03
Number of Rooms												
1 to 3 .....	.5	.03	.3	.02	.1	.01	.2	NC	NC	Q	Q	33.15
4 to 5	1.9	.18	1.6	.12	.6	.05	1.0	Q	Q	Q	0.1	26.78
6 or More	2.0	.25	2.3	.17	.8	.07	1.5	Q	Q	Q	Q	18.07
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	1.5	.12	1.0	.08	.4	.03	.6	Q	Q	Q	Q	20.37
1,000 to 1,999	2.0	.21	2.0	.14	.6	.06	1.3	Q	Q	Q	*	18.03
2,000 or More	1.0	.14	1.2	.10	.4	.03	.7	Q	Q	Q	Q	19.48
Year of Construction												
1949 or Before .....	.9	.10	.8	.08	.3	.02	.4	Q	Q	Q	Q	35.87
1950 to 1974	2.1	.23	2.0	.16	.8	.05	1.1	Q	Q	Q	Q	16.68
1975 or After	1.4	.13	1.5	.07	.3	.05	1.1	Q	Q	Q	Q	42.16
Status of Unit												
Owned	3.1	.35	3.2	.23	1.0	.10	2.0	Q	Q	Q	Q	17.21
Rented	1.3	.11	1.0	.08	.4	.03	.6	Q	Q	Q	Q	38.01
1987 Family Income												
Less than \$10,000	1.0	.09	.7	.06	.3	.02	.4	Q	Q	Q	Q	29.97
\$10,000 to \$19,999	1.1	.12	1.0	.08	.4	.03	.6	Q	Q	Q	Q	24.03
\$20,000 to \$34,999	1.3	.12	1.1	.09	.4	.03	.7	Q	Q	Q	Q	22.32
\$35,000 or More	1.1	.13	1.4	.09	.4	.05	1.0	Q	Q	Q	Q	27.27
Below 100 Percent of Poverty Line .....	.6	.05	.4	.03	.2	.01	.3	Q	Q	Q	Q	46.14
Below 125 Percent of Poverty Line .....	.9	.09	.7	.06	.3	.02	.4	Q	Q	Q	Q	36.95
Assistance for Heating in Winter												
Yes .....	.3	.03	.2	.02	.1	.01	.1	Q	Q	Q	Q	41.14
No	4.1	.43	4.0	.29	1.3	.12	2.5	Q	Q	Q	Q	15.19
Age of Householder												
Under 35 Years	1.5	.14	1.4	.10	.5	.04	.9	Q	Q	Q	Q	45.82
35 to 59 Years	1.3	.20	1.8	.13	.6	.06	1.2	Q	Q	Q	.1	23.89
60 Years and Over	1.1	.12	.9	.08	.4	.03	.5	Q	Q	Q	Q	32.37

See footnotes at end of table.

Table 33. Energy Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.423	0.466	0.477	0.597	0.599	0.513	0.515	3.980	3.539	3.026	2.637	
Household Size												
1 Person	1.0	0.08	0.7	0.05	0.2	0.02	0.4	Q	Q	Q	Q	28.67
2 to 4 Persons	2.7	.29	2.6	.20	.9	.08	1.7	Q	Q	Q	Q	17.33
5 or More Persons .....	.7	.09	.9	.06	.3	.03	.6	NC	NC	Q	Q	63.17
Secondary Heating												
Yes	1.9	.22	1.9	.15	.6	.06	1.2	Q	*	Q	Q	17.80
No	2.6	.24	2.3	.17	.8	.07	1.4	Q	Q	0.01	0.1	21.01
Hot Water Fuel												
Natural Gas	3.2	.36	2.9	.29	1.3	.07	1.6	Q	Q	NC	NC	21.59
Electricity	1.0	.08	1.0	.02	.1	.05	.9	Q	Q	.01	*	31.82
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	Q	.3	Q	Q	.01	.2	Q	Q	Q	Q	77.95
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD .....	.6	.07	.5	Q	.1	.02	.3	Q	Q	Q	Q	37.13
5,500 to 7,000 HDD	2.1	.24	1.8	.18	.8	.05	1.0	Q	Q	Q	Q	29.37
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Under 4,000 HDD	Q	Q	Q	Q	.1	Q	Q	NC	NC	Q	Q	80.78
2,000 CDD or More and --												
Under 4,000 HDD	1.2	.08	1.3	.04	.3	.04	1.0	Q	Q	Q	Q	12.63

See footnotes at end of table.

West

Mountain

Aggregates

Table 33. Energy Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
		0.423	0.466	0.477	0.597	0.599	0.513	0.515	3.980	3.539	3.026		2.637
RSE Column Factors:	0.423	0.466	0.477	0.597	0.599	0.513	0.515	3.980	3.539	3.026	2.637	
Pacific Division	13.9	0.96	10.8	0.56	3.0	0.36	7.4	Q	0.1	0.03	0.3	3.74
Metropolitan Status												
Metropolitan	12.4	.90	9.7	.56	3.0	.31	6.5	Q	Q	.02	.2	3.57
Central City	5.1	.35	3.6	.24	1.3	.11	2.3	Q	Q	Q	Q	8.40
Outside Central City	7.3	.55	6.2	.32	1.7	.20	4.2	Q	.1	.02	.2	12.64
Nonmetropolitan	1.5	.06	1.1	Q	Q	.05	.9	Q	Q	Q	Q	25.55
Payment Method for Utilities												
All Paid by Household	10.9	.81	9.1	.46	2.4	.31	6.3	Q	.1	.02	.3	11.97
Some or None Paid by Household, Other Method	3.0	.15	1.7	.10	.6	.05	1.1	NC	NC	Q	Q	45.47
Housing Structure												
Mobile Home .....	.6	.03	.3	.01	.1	.01	.2	NC	NC	Q	Q	59.57
Single Family	8.4	.69	7.9	.40	2.2	.26	5.4	Q	.1	.02	.3	10.62
Building of 2 or More Units	4.9	.24	2.6	.15	.8	.09	1.8	Q	Q	Q	Q	19.17
Number of Rooms												
1 to 3	2.5	.09	1.0	.06	.3	.03	.7	NC	NC	Q	Q	19.75
4 to 5	6.3	.39	4.3	.22	1.1	.15	3.0	Q	Q	.02	.2	14.66
6 or More	5.1	.48	5.5	.29	1.6	.17	3.7	Q	.1	.01	.1	13.65
Measured Heated Area of Residence (square feet)												
Fewer than 1,000	5.6	.28	3.1	.17	.9	.10	2.1	Q	Q	.01	.1	14.43
1,000 to 1,999	6.0	.43	4.9	.25	1.3	.17	3.5	Q	Q	.01	.1	15.38
2,000 or More	2.3	.25	2.8	.15	.9	.09	1.8	Q	Q	Q	Q	26.74
Year of Construction												
1949 or Before	3.6	.23	2.4	.15	.8	.08	1.6	Q	Q	Q	.1	15.75
1950 to 1974	6.6	.49	5.4	.30	1.6	.17	3.5	Q	Q	.02	.2	12.33
1975 or After	3.7	.24	2.9	.12	.6	.12	2.3	Q	Q	Q	Q	21.90
Status of Unit												
Owned	7.9	.65	7.4	.37	2.0	.24	5.1	Q	.1	.02	.2	12.06
Rented	5.9	.32	3.4	.20	1.0	.11	2.3	Q	Q	Q	Q	16.12
1987 Family Income												
Less than \$10,000	1.9	.11	1.2	.06	.3	.04	.8	NC	NC	Q	Q	21.46
\$10,000 to \$19,999	2.7	.16	1.6	.10	.5	.06	1.1	Q	Q	Q	Q	27.06
\$20,000 to \$34,999	3.8	.23	2.7	.12	.6	.09	1.9	*	*	Q	.1	11.79
\$35,000 or More	5.5	.47	5.3	.29	1.6	.17	3.6	Q	*	.01	.1	16.27
Below 100 Percent of Poverty Line	1.2	.08	.9	.05	.3	.03	.6	NC	NC	Q	Q	23.28
Below 125 Percent of Poverty Line	2.0	.12	1.4	.07	.4	.05	.9	NC	NC	Q	Q	22.44
Assistance for Heating in Winter												
Yes .....	.4	.03	.3	.02	.1	.01	.2	NC	NC	Q	Q	31.74
No	13.4	.94	10.5	.55	2.9	.35	7.2	Q	.1	.03	.3	8.74
Age of Householder												
Under 35 Years	4.6	.29	3.2	.17	.9	.11	2.2	NC	NC	Q	Q	11.80
35 to 59 Years	5.7	.44	5.0	.27	1.5	.16	3.4	Q	Q	.01	.1	10.87
60 Years and Over	3.6	.23	2.6	.12	.6	.09	1.8	Q	.1	Q	Q	18.23

See footnotes at end of table.

Table 33. Energy Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	All Major Fuels			Natural Gas		Electricity		Fuel Oil or Kerosene		Liquefied Petroleum Gas		RSE Row Factors
	Households (million)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	Total Amount Consumed (quadrillion Btu)	Total Expenditures (billion dollars)	
RSE Column Factors:	0.423	0.466	0.477	0.587	0.599	0.513	0.515	3.980	3.539	3.026	2.637	
Household Size												
1 Person	3.1	0.14	1.6	0.07	0.4	0.06	1.1	Q	*	Q	Q	18.29
2 to 4 Persons	9.4	.68	7.6	.40	2.2	.25	5.2	Q	Q	0.02	0.2	9.89
5 or More Persons	1.5	.14	1.6	.09	.5	.05	1.1	Q	Q	Q	Q	17.14
Secondary Heating												
Yes	7.0	.55	6.2	.29	1.6	.22	4.3	Q	Q	.02	.2	13.47
No	6.9	.42	4.6	.27	1.4	.14	3.1	Q	Q	.01	.1	10.35
Hot Water Fuel												
Natural Gas	9.2	.71	7.1	.53	2.8	.18	4.3	Q	Q	NC	NC	10.78
Electricity	3.9	.21	3.0	.03	.1	.16	2.7	Q	Q	.01	.1	20.26
Fuel Oil or Kerosene	Q	Q	Q	NC	NC	Q	Q	Q	Q	NC	NC	a
Other .....	.7	.04	.7	.01	*	.01	.4	Q	Q	.02	.2	40.40
Climate Zone												
Under 2,000 CDD and--												
Over 7,000 HDD .....	.3	.04	.3	.03	.1	.01	.2	NC	NC	NC	NC	29.23
5,500 to 7,000 HDD	1.5	.08	1.0	Q	Q	.06	.9	NC	NC	Q	Q	94.88
4,000 to 5,499 HDD	2.0	.15	1.6	Q	Q	.08	1.2	Q	Q	Q	Q	76.22
Under 4,000 HDD	9.1	.64	7.0	.45	2.4	.18	4.4	Q	Q	Q	Q	18.81
2,000 CDD or More and --												
Under 4,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	a

a No applicable RSE row factor.

nc No cases in sample.

* Data cannot be displayed due to rounding.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 34. Total Consumption per West Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987

Household Characteristics	Total Consumption In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.667	0.388	0.872	0.395	1.733	0.938	3.931	1.753	
West Region	18.3	77.7	11.8	91.5	3.8	45.9	0.6	93.3	6.34
Metropolitan Status									
Metropolitan	15.5	78.7	10.9	89.9	3.2	44.6	.3	79.0	7.03
Central City	6.9	78.0	5.3	87.8	1.3	43.1	Q	Q	6.49
Outside Central City	8.6	79.3	5.7	91.9	1.9	45.6	.3	84.4	10.11
Nonmetropolitan	2.8	72.5	.9	112.7	.6	52.8	.3	109.5	14.94
Payment Method for Utilities									
All Paid by Household	14.5	82.9	9.3	97.4	2.7	50.9	.5	99.4	8.47
Some or None Paid by Household, Other Method	3.8	57.9	2.5	69.1	1.2	34.4	Q	Q	18.80
Housing Structure									
Mobile Home	1.0	74.8	.6	87.2	.2	49.1	Q	Q	26.73
Single Family	11.5	90.5	7.7	103.2	1.5	63.6	.4	96.6	7.03
Building of 2 or More Units	5.8	53.2	3.5	66.3	2.2	33.9	NC	NC	11.48
Number of Rooms									
1 to 3	3.0	41.7	1.8	49.1	1.0	29.3	Q	Q	11.65
4 to 5	8.2	70.1	5.0	81.6	1.8	45.1	.4	88.2	7.50
6 or More	7.1	101.9	5.0	116.4	1.0	63.8	Q	Q	7.26
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	7.1	55.6	4.2	66.8	1.7	35.0	.2	73.9	8.89
1,000 to 1,999	8.0	80.5	5.2	93.2	1.7	51.5	.2	87.7	8.22
2,000 or More	3.2	119.6	2.4	131.7	.4	69.9	Q	Q	10.36
Year of Construction									
1949 or Before	4.5	74.2	3.1	85.2	.4	43.1	.1	87.1	14.34
1950 to 1974	8.7	83.3	6.2	93.0	1.4	47.9	.4	94.0	8.28
1975 or After	5.1	71.4	2.5	95.8	2.0	45.0	Q	Q	12.51
Status of Unit									
Owned	11.0	90.0	7.2	104.8	1.7	58.0	.5	95.0	7.49
Rented	7.3	59.2	4.6	70.7	2.1	36.3	Q	Q	9.84
1987 Family Income									
Less than \$10,000	2.9	67.3	1.7	80.1	.6	40.0	Q	Q	12.36
\$10,000 to \$19,999	3.7	73.2	2.5	83.9	.7	43.2	Q	Q	11.19
\$20,000 to \$34,999	5.0	70.2	3.2	83.4	1.1	42.4	.2	80.7	9.21
\$35,000 or More	6.7	90.4	4.4	106.1	1.4	52.8	.2	92.4	9.48
Below 100 Percent of Poverty Line	1.8	71.5	1.1	84.3	.4	44.9	Q	Q	14.74
Below 125 Percent of Poverty Line	2.9	72.2	1.7	87.1	.7	42.3	Q	Q	12.39
Assistance for Heating in Winter									
Yes .....	.8	75.4	.5	92.0	.2	41.0	NC	NC	16.33
No	17.5	77.8	11.3	91.5	3.6	46.1	.6	93.3	6.51

See footnotes at end of table.

Table 34. Total Consumption per West Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors	0.667	0.388	0.672	0.395	1.733	0.936	3.931	1.753	
Age of Householder									
Under 35 Years	6.2	70.0	4.0	82.5	1.4	41.9	Q	Q	10.31
35 to 59 Years	7.5	85.4	5.0	100.3	1.3	49.6	0.2	100.9	8.09
60 Years and Over	4.7	75.7	2.7	88.7	1.0	46.8	.3	90.0	11.16
Household Size									
1 Person	4.1	54.2	2.4	63.7	1.4	35.9	Q	Q	11.68
2 to 4 Persons	12.1	80.8	7.9	94.8	2.3	49.1	.4	77.0	6.25
5 or More Persons	2.2	105.4	1.5	117.5	.2	80.4	Q	Q	13.31
Secondary Heating									
Yes	8.9	85.9	5.4	101.6	1.7	53.1	.4	100.3	8.52
No	9.4	70.1	6.4	83.0	2.1	39.9	.2	81.3	6.67
Hot Water Fuel									
Natural Gas	12.4	86.1	11.0	90.9	1.0	41.4	NC	NC	6.78
Electricity	4.9	57.9	.6	105.7	2.7	47.0	.2	76.4	10.99
Fuel Oil or Kerosene	Q	Q	NC	NC	NC	NC	NC	NC	a
Other	1.0	71.9	.2	79.2	Q	Q	.4	103.8	26.54
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD .....	.9	125.2	.5	149.8	.1	46.7	Q	139.2	13.69
5,500 to 7,000 HDD	3.6	89.6	1.9	121.4	1.0	53.5	Q	Q	15.47
4,000 to 5,499 HDD	2.2	79.0	.8	120.7	.8	43.7	Q	Q	28.42
Under 4,000 HDD	9.5	71.7	7.5	78.1	1.2	40.6	.2	69.7	10.37
2,000 CDD or More and --									
Under 4,000 HDD	2.2	63.6	1.1	82.2	.6	47.0	Q	Q	21.29

See footnotes at end of table.

Table 34. Total Consumption per West Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.667	0.388	0.872	0.395	1.733	0.938	3.931	1.753	
Mountain Division	4.4	103.5	3.3	116.1	0.7	54.0	Q	124.2	9.50
Metropolitan Status									
Metropolitan	3.1	103.4	2.4	117.3	.6	49.5	Q	Q	10.06
Central City	1.8	102.8	1.4	117.0	Q	47.0	Q	Q	15.08
Outside Central City	1.3	104.1	1.0	117.8	.3	52.9	NC	NC	20.66
Nonmetropolitan	1.4	103.9	.9	112.7	.1	73.8	Q	129.4	18.37
Payment Method for Utilities									
All Paid by Household	3.7	107.7	2.6	122.2	.6	57.7	Q	135.7	9.12
Some or None Paid by Household, Other Method .....	.8	84.0	.7	92.7	Q	Q	Q	Q	33.48
Housing Structure									
Mobile Home .....	.5	96.2	.3	103.5	Q	Q	Q	Q	30.57
Single Family	3.1	113.3	2.3	125.0	.4	68.7	Q	Q	8.88
Building of 2 or More Units .....	.9	75.1	.7	92.4	.3	28.8	NC	NC	26.34
Number of Rooms									
1 to 3 .....	.5	61.6	.4	72.0	.1	25.5	Q	Q	17.06
4 to 5	1.9	95.3	1.4	105.4	.3	49.0	Q	116.7	11.97
6 or More	2.0	122.6	1.5	136.8	.3	70.7	Q	Q	8.95
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	1.5	77.6	1.1	88.7	.3	30.9	Q	Q	11.69
1,000 to 1,999	2.0	105.1	1.4	118.6	.4	64.5	Q	Q	10.59
2,000 or More	1.0	139.4	.8	148.5	Q	Q	Q	Q	10.73
Year of Construction									
1949 or Before .....	.9	115.4	.8	119.9	Q	Q	Q	Q	22.05
1950 to 1974	2.1	109.4	1.7	115.4	.2	57.4	Q	Q	14.57
1975 or After	1.4	87.5	.8	114.0	.5	53.3	Q	Q	24.48
Status of Unit									
Owned	3.1	111.6	2.3	122.6	.4	65.7	Q	132.3	8.53
Rented	1.3	84.8	1.0	100.4	.3	37.0	Q	Q	22.73
1987 Family Income									
Less than \$10,000	1.0	88.6	.7	98.0	.1	44.7	Q	Q	19.45
\$10,000 to \$19,999	1.1	108.3	.8	118.6	.1	38.8	Q	Q	17.52
\$20,000 to \$34,999	1.3	98.3	.9	111.1	.2	47.0	Q	Q	12.20
\$35,000 or More	1.1	117.4	.8	135.9	.3	70.3	Q	Q	14.58
Below 100 Percent of Poverty Line .....	.6	90.5	.4	103.1	.1	48.6	Q	Q	25.69
Below 125 Percent of Poverty Line .....	.9	94.2	.7	104.7	.1	51.6	Q	Q	21.46
Assistance for Heating in Winter									
Yes .....	.3	91.1	.3	104.4	Q	Q	NC	NC	23.83
No	4.1	104.5	3.0	117.1	.7	55.4	Q	124.2	9.49

See footnotes at end of table.

Table 34. Total Consumption per West Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.667	0.388	0.872	0.395	1.733	0.938	3.931	1.753	
Age of Householder									
Under 35 Years	1.5	93.4	1.1	108.7	0.4	45.3	Q	Q	18.10
35 to 59 Years	1.8	109.9	1.3	126.9	.3	59.7	0.1	108.3	12.33
60 Years and Over	1.1	106.9	.9	110.1	Q	Q	Q	Q	17.18
Household Size									
1 Person	1.0	76.7	.8	84.0	.2	34.1	Q	Q	21.20
2 to 4 Persons	2.7	107.4	2.0	121.9	.5	58.5	Q	Q	10.46
5 or More Persons .....	.7	127.4	.5	141.1	Q	Q	Q	Q	25.73
Secondary Heating									
Yes	1.9	116.5	1.4	127.3	.2	71.1	Q	Q	10.13
No	2.6	94.2	1.9	107.9	.5	47.2	Q	Q	13.91
Hot Water Fuel									
Natural Gas	3.2	112.9	3.0	116.1	.1	49.5	NC	NC	13.29
Electricity	1.0	73.4	.2	110.9	.6	55.2	Q	Q	23.85
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	109.0	Q	Q	Q	Q	Q	Q	61.69
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD .....	.6	118.2	.3	130.4	Q	Q	Q	139.2	19.41
5,500 to 7,000 HDD	2.1	116.0	1.8	123.4	Q	69.8	Q	Q	16.56
4,000 to 5,499 HDD	Q	177.0	Q	177.0	NC	NC	NC	NC	96.03
Under 4,000 HDD	Q	95.7	.3	103.9	Q	Q	Q	Q	27.67
2,000 CDD or More and --									
Under 4,000 HDD	1.2	67.8	.7	82.1	.5	49.7	Q	Q	12.74

See footnotes at end of table.

West

Pacific

Averages

Table 34. Total Consumption per West Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors:	0.667	0.388	0.872	0.395	1.733	0.938	3.931	1.753	
Pacific Division	13.9	69.5	8.5	82.2	3.1	44.0	0.4	78.2	6.78
Metropolitan Status									
Metropolitan	12.4	72.6	8.5	82.2	2.6	43.4	.3	80.6	7.01
Central City	5.1	69.5	3.9	77.2	1.0	41.8	Q	Q	6.59
Outside Central City	7.3	74.9	4.7	86.3	1.6	44.4	.3	84.4	9.82
Nonmetropolitan	1.5	42.8	NC	NC	.5	47.1	Q	Q	13.30
Payment Method for Utilities									
All Paid by Household	10.9	74.6	6.8	88.0	2.0	48.8	.3	80.0	10.77
Some or None Paid by Household, Other Method	3.0	51.0	1.8	60.3	1.1	34.9	Q	Q	18.82
Housing Structure									
Mobile Home .....	.6	57.7	.3	67.8	Q	Q	Q	Q	35.85
Single Family	8.4	82.3	5.5	94.2	1.0	61.5	.3	82.3	8.50
Building of 2 or More Units	4.9	49.0	2.8	60.0	1.9	34.5	NC	NC	11.05
Number of Rooms									
1 to 3	2.5	37.4	1.4	43.0	.9	29.9	Q	Q	13.07
4 to 5	6.3	62.5	3.6	72.6	1.5	44.4	.3	77.2	9.27
6 or More	5.1	93.7	3.5	107.6	.7	60.7	Q	Q	10.20
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	5.6	49.8	3.2	59.3	1.4	35.8	Q	Q	10.26
1,000 to 1,999	6.0	72.4	3.8	83.9	1.4	47.9	Q	Q	10.31
2,000 or More	2.3	110.9	1.6	123.3	.3	63.6	Q	Q	12.26
Year of Construction									
1949 or Before	3.6	64.0	2.4	74.2	.4	43.2	Q	Q	14.79
1950 to 1974	6.6	75.0	4.4	84.3	1.2	46.6	.3	80.3	9.86
1975 or After	3.7	65.2	1.7	87.6	1.5	42.0	Q	Q	13.88
Status of Unit									
Owned	7.9	81.5	4.9	96.4	1.2	55.4	.3	76.8	9.57
Rented	5.9	53.5	3.6	62.9	1.8	36.2	Q	Q	10.69
1987 Family Income									
Less than \$10,000	1.9	56.4	1.0	66.8	.5	38.9	Q	Q	14.26
\$10,000 to \$19,999	2.7	59.2	1.7	67.3	.6	44.2	NC	NC	13.33
\$20,000 to \$34,999	3.8	60.8	2.2	72.0	.9	41.3	Q	Q	10.45
\$35,000 or More	5.5	84.8	3.6	99.5	1.1	48.4	Q	Q	11.35
Below 100 Percent of Poverty Line	1.2	62.8	.7	74.1	.3	43.6	Q	Q	17.24
Below 125 Percent of Poverty Line	2.0	62.0	1.1	75.9	.5	40.2	Q	Q	14.86
Assistance for Heating in Winter									
Yes .....	.4	63.4	.2	78.7	.1	42.5	NC	NC	21.16
No	13.4	69.7	8.3	82.3	3.0	44.0	.4	78.2	6.89

See footnotes at end of table.

Table 34. Total Consumption per West Region Household of Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Consumption In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	Households (million)	Energy Used per Household (million Btu)	
RSE Column Factors	0.667	0.388	0.872	0.395	1.733	0.938	3.931	1.753	
Age of Householder									
Under 35 Years	4.6	62.3	2.9	72.5	1.1	40.7	Q	Q	11.50
35 to 59 Years	5.7	77.6	3.8	91.4	1.1	46.9	Q	Q	8.78
60 Years and Over	3.6	66.0	1.9	78.6	.9	44.5	Q	71.6	12.40
Household Size									
1 Person	3.1	46.6	1.6	53.9	1.2	36.2	Q	Q	13.59
2 to 4 Persons	9.4	73.0	5.9	85.9	1.8	46.6	0.3	67.3	7.19
5 or More Persons	1.5	94.7	1.0	105.2	Q	Q	Q	Q	12.97
Secondary Heating									
Yes	7.0	77.8	4.0	92.8	1.5	50.6	.3	86.0	10.14
No	6.9	61.0	4.5	72.7	1.5	37.4	Q	Q	7.74
Hot Water Fuel									
Natural Gas	9.2	76.9	8.0	81.5	.9	40.4	NC	NC	7.85
Electricity	3.9	53.8	.4	102.5	2.2	44.9	Q	Q	12.64
Fuel Oil or Kerosene	Q	Q	NC	NC	NC	NC	NC	NC	a
Other .....	.7	59.9	Q	Q	Q	Q	.2	88.4	20.02
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD .....	.3	141.8	.2	188.1	.1	45.4	NC	NC	15.09
5,500 to 7,000 HDD	1.5	53.6	Q	Q	.8	50.6	Q	Q	33.04
4,000 to 5,499 HDD	2.0	71.8	Q	107.3	.8	43.7	Q	Q	21.90
Under 4,000 HDD	9.1	70.7	7.2	77.0	1.2	40.3	Q	69.2	10.59
2,000 CDD or More and --									
Under 4,000 HDD	Q	58.4	Q	Q	Q	Q	Q	Q	86.24

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors.

• Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. • Column totals will not sum to total number of households because households with no main heating fuel or with other main heating fuel, such as wood, fuel oil, and kerosene were not included.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

West

Pacific

Averages

Table 35. Total Expenditures per West Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987

Household Characteristics	Total Expenditures in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.686	0.390	0.893	0.468	1.785	0.871	4.093	1.407	
West Region	18.3	819	11.8	834	3.8	754	0.6	1,071	5.84
Metropolitan Status									
Metropolitan	15.5	822	10.9	834	3.2	766	.3	1,056	6.80
Central City	6.9	761	5.3	779	1.3	717	Q	Q	7.65
Outside Central City	8.6	871	5.7	885	1.9	800	.3	1,123	9.59
Nonmetropolitan	2.8	801	.9	836	.6	696	.3	1,088	13.37
Payment Method for Utilities									
All Paid by Household	4.5	881	9.3	901	2.7	829	.5	1,158	8.35
Some or None Paid by Household, Other Method	3.8	581	2.5	581	1.2	582	Q	Q	18.25
Housing Structure									
Mobile Home	1.0	708	.6	711	.2	641	Q	Q	21.55
Single Family	11.5	964	7.7	970	1.5	1,042	.4	1,138	7.25
Building of 2 or More Units	5.8	553	3.5	552	2.2	571	NC	NC	11.07
Number of Rooms									
1 to 3	3.0	430	1.8	393	1.0	462	Q	Q	11.25
4 to 5	8.2	730	5.0	709	1.8	724	.4	1,009	6.85
6 or More	7.1	1,087	5.0	1,114	1.0	1,100	Q	Q	7.09
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	7.1	584	4.2	566	1.7	537	.2	800	9.00
1,000 to 1,999	8.0	865	5.2	864	1.7	884	.2	1,028	7.27
2,000 or More	3.2	1,221	2.4	1,244	.4	1,144	Q	Q	12.04
Year of Construction									
1949 or Before	4.5	712	3.1	723	.4	672	.1	984	16.28
1950 to 1974	8.7	854	6.2	869	1.4	897	.4	1,096	8.11
1975 or After	5.1	854	2.5	888	2.0	810	Q	Q	10.44
Status of Unit									
Owned	11.0	958	7.2	979	1.7	979	.5	1,116	7.48
Rented	7.3	608	4.6	606	2.1	577	Q	Q	9.28
1987 Family Income									
Less than \$10,000	2.9	670	1.7	650	.6	598	Q	Q	12.04
\$10,000 to \$19,999	3.7	687	2.5	694	.7	626	Q	Q	10.73
\$20,000 to \$34,999	5.0	759	3.2	766	1.1	722	.2	903	8.73
\$35,000 or More	6.7	1,001	4.4	1,033	1.4	919	.2	1,208	9.95
Below 100 Percent of Poverty Line	1.8	743	1.1	753	.4	707	Q	Q	15.32
Below 125 Percent of Poverty Line	2.9	734	1.7	741	.7	620	Q	Q	12.61
Assistance for Heating in Winter									
Yes .....	.8	685	.5	709	.2	533	NC	NC	14.91
No	17.5	825	11.3	840	3.6	765	.6	1,071	6.02

See footnotes at end of table.

Table 35. Total Expenditures per West Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.686	0.390	0.893	0.469	1.785	0.871	4.093	1.407	
Age of Householder									
Under 35 Years	6.2	751	4.0	765	1.4	713	Q	Q	10.82
35 to 59 Years	7.5	905	5.0	922	1.3	839	0.2	1,270	8.20
60 Years and Over	4.7	770	2.7	776	1.0	703	.3	1,007	11.26
Household Size									
1 Person	4.1	550	2.4	507	1.4	587	Q	Q	10.79
2 to 4 Persons	12.1	846	7.9	862	2.3	811	.4	934	5.80
5 or More Persons	2.2	1,173	1.5	1,194	.2	1,304	Q	Q	12.88
Secondary Heating									
Yes	8.9	917	5.4	956	1.7	830	.4	1,193	8.54
No	9.4	727	6.4	731	2.1	691	.2	860	6.01
Hot Water Fuel									
Natural Gas	12.4	804	11.0	826	1.0	594	NC	NC	7.01
Electricity	4.9	826	.6	940	2.7	797	.2	1,049	10.78
Fuel Oil or Kerosene	Q	Q	NC	NC	NC	NC	NC	NC	a
Other	1.0	969	.2	949	Q	Q	.4	1,084	24.28
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD .....	.9	885	.5	844	.1	776	Q	1,242	16.41
5,500 to 7,000 HDD	3.6	799	1.9	883	1.0	736	Q	Q	16.74
4,000 to 5,499 HDD	2.2	843	.8	1,023	.8	636	Q	Q	24.91
Under 4,000 HDD	9.5	772	7.5	775	1.2	717	.2	974	11.01
2,000 CDD or More and --									
Under 4,000 HDD	2.2	1,004	1.1	1,012	.6	1,005	Q	Q	16.72

See footnotes at end of table.

Table 35. Total Expenditures per West Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.686	0.390	0.893	0.468	1.785	0.871	4.093	1.407	
Mountain Division	4.4	944	3.3	923	0.7	1,058	Q	1,152	8.62
Metropolitan Status									
Metropolitan	3.1	975	2.4	953	.6	1,070	Q	Q	10.56
Central City	1.8	930	1.4	928	Q	955	Q	Q	14.64
Outside Central City	1.3	1,037	1.0	989	.3	1,220	NC	NC	18.23
Nonmetropolitan	1.4	875	.9	836	.1	1,004	Q	1,189	15.82
Payment Method for Utilities									
All Paid by Household	3.7	1,004	2.6	984	.6	1,134	Q	1,223	8.06
Some or None Paid by Household, Other Method .....	.8	667	.7	685	Q	Q	Q	Q	35.42
Housing Structure									
Mobile Home .....	.5	825	.3	808	Q	Q	Q	Q	24.87
Single Family	3.1	1,041	2.3	1,008	.4	1,307	Q	Q	8.72
Building of 2 or More Units .....	.9	683	.7	691	.3	661	NC	NC	24.95
Number of Rooms									
1 to 3 .....	.5	578	.4	530	.1	634	Q	Q	18.03
4 to 5	1.9	852	1.4	816	.3	954	Q	1,172	12.14
6 or More	2.0	1,130	1.5	1,117	.3	1,333	Q	Q	10.35
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	1.5	693	1.1	674	.3	687	Q	Q	11.86
1,000 to 1,999	2.0	1,018	1.4	968	.4	1,253	Q	Q	8.51
2,000 or More	1.0	1,175	.8	1,178	Q	Q	Q	Q	16.74
Year of Construction									
1949 or Before .....	.9	867	.8	851	Q	Q	Q	Q	27.61
1950 to 1974	2.1	928	1.7	927	.2	948	Q	Q	12.61
1975 or After	1.4	1,016	.8	982	.5	1,106	Q	Q	17.10
Status of Unit									
Owned	3.1	1,018	2.3	986	.4	1,252	Q	1,193	9.36
Rented	1.3	773	1.0	770	.3	776	Q	Q	20.22
1987 Family Income									
Less than \$10,000	1.0	717	.7	716	.1	748	Q	Q	15.45
\$10,000 to \$19,999	1.1	908	.8	901	.1	821	Q	Q	13.73
\$20,000 to \$34,999	1.3	902	.9	886	.2	960	Q	Q	11.85
\$35,000 or More	1.1	1,216	.8	1,175	.3	1,371	Q	Q	13.39
Below 100 Percent of Poverty Line .....	.6	784	.4	798	.1	781	Q	Q	24.99
Below 125 Percent of Poverty Line .....	.9	782	.7	779	.1	816	Q	Q	20.03
Assistance for Heating in Winter									
Yes .....	.3	724	.3	746	Q	Q	NC	NC	17.48
No	4.1	962	3.0	937	.7	1,093	Q	1,152	8.81

See footnotes at end of table.

Table 35. Total Expenditures per West Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors:	0.686	0.390	0.893	0.468	1.785	0.871	4.093	1.407	
Age of Householder									
Under 35 Years	1.5	948	1.1	935	0.4	992	Q	Q	18.63
35 to 59 Years	1.8	994	1.3	976	.3	1,131	0.1	1,126	13.71
60 Years and Over	1.1	858	.9	830	Q	Q	Q	Q	13.26
Household Size									
1 Person	1.0	659	.8	619	.2	737	Q	Q	16.09
2 to 4 Persons	2.7	970	2.0	943	.5	1,128	Q	Q	8.27
5 or More Persons .....	.7	1,260	.5	1,289	Q	Q	Q	Q	22.43
Secondary Heating									
Yes	1.9	1,034	1.4	1,019	.2	1,273	Q	Q	13.82
No	2.6	880	1.9	852	.5	972	Q	Q	11.96
Hot Water Fuel									
Natural Gas	3.2	907	3.0	920	.1	690	NC	NC	15.80
Electricity	1.0	999	.2	817	.6	1,125	Q	Q	15.17
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	1,199	Q	Q	Q	Q	Q	Q	50.19
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD .....	.6	839	.3	712	Q	Q	Q	1,242	18.20
5,500 to 7,000 HDD	2.1	886	1.8	882	Q	1,033	Q	Q	17.10
4,000 to 5,499 HDD	Q	1,298	Q	1,298	NC	NC	NC	NC	90.08
Under 4,000 HDD	Q	951	.3	974	Q	Q	Q	Q	38.48
2,000 CDD or More and --									
Under 4,000 HDD	1.2	1,054	.7	1,031	.5	1,095	Q	Q	10.49

See footnotes at end of table.

West

Pacific

Expenditures

Table 35. Total Expenditures per West Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures In Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
	RSE Column Factors:	0.686	0.390	0.893	0.468	1.785	0.871	4.093		1.407
Pacific Division	13.9	779	8.5	800	3.1	683	0.4	1,031	6.49
Metropolitan Status									
Metropolitan	12.4	785	8.5	800	2.6	696	.3	1,075	6.65
Central City	5.1	703	3.9	726	1.0	633	Q	Q	6.74
Outside Central City	7.3	842	4.7	862	1.6	733	.3	1,123	9.55
Nonmetropolitan	1.5	730	NC	NC	.5	611	Q	Q	16.95
Payment Method for Utilities									
All Paid by Household	10.9	839	6.8	869	2.0	733	.3	1,123	10.99
Some or None Paid by Household, Other Method	3.0	559	1.8	542	1.1	587	Q	Q	19.22
Housing Structure									
Mobile Home .....	.6	613	.3	596	Q	Q	Q	Q	33.11
Single Family	8.4	936	5.5	955	1.0	929	.3	1,115	9.06
Building of 2 or More Units	4.9	529	2.8	518	1.9	560	NC	NC	11.33
Number of Rooms									
1 to 3	2.5	399	1.4	356	.9	435	Q	Q	13.45
4 to 5	6.3	693	3.6	668	1.5	682	.3	946	8.72
6 or More	5.1	1,070	3.5	1,113	.7	994	Q	Q	9.73
Measured Heated Area of Residence (square feet)									
Fewer than 1,000	5.6	555	3.2	530	1.4	505	Q	Q	10.52
1,000 to 1,999	6.0	815	3.8	826	1.4	781	Q	Q	9.53
2,000 or More	2.3	1,241	1.6	1,277	.3	1,046	Q	Q	12.95
Year of Construction									
1949 or Before	3.6	673	2.4	682	.4	674	Q	Q	17.82
1950 to 1974	6.6	830	4.4	846	1.2	661	.3	1,094	10.38
1975 or After	3.7	792	1.7	845	1.5	702	Q	Q	13.02
Status of Unit									
Owned	7.9	935	4.9	976	1.2	885	.3	1,079	9.65
Rented	5.9	571	3.6	563	1.8	545	Q	Q	10.38
1987 Family Income									
Less than \$10,000	1.9	647	1.0	601	.5	565	Q	Q	15.82
\$10,000 to \$19,999	2.7	599	1.7	594	.6	579	NC	NC	13.32
\$20,000 to \$34,999	3.8	711	2.2	717	.9	669	Q	Q	10.65
\$35,000 or More	5.5	957	3.6	1,002	1.1	804	Q	Q	11.22
Below 100 Percent of Poverty Line	1.2	724	.7	728	.3	682	Q	Q	18.86
Below 125 Percent of Poverty Line	2.0	711	1.1	717	.5	575	Q	Q	16.14
Assistance for Heating in Winter									
Yes .....	.4	656	.2	669	.1	471	NC	NC	21.72
No	13.4	783	8.3	804	3.0	691	.4	1,031	6.62

See footnotes at end of table.

Table 35. Total Expenditures per West Region Household for Natural Gas, Electricity, Fuel Oil or Kerosene, and LPG, 1987 (Continued)

Household Characteristics	Total Expenditures in Households Where:								RSE Row Factors
	Total		Main Heating Fuel is Natural Gas		Main Heating Fuel is Electricity		Main Heating Fuel is Liquefied Petroleum Gas		
	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	Households (million)	Expenditures per Household (dollars)	
RSE Column Factors	0.686	0.390	0.693	0.466	1.785	0.871	4.093	1.407	
Age of Householder									
Under 35 Years	4.6	687	2.9	699	1.1	619	Q	Q	11.82
35 to 59 Years	5.7	877	3.8	904	1.1	762	Q	Q	8.58
60 Years and Over	3.6	743	1.9	750	.9	667	Q	945	13.44
Household Size									
1 Person	3.1	514	1.6	453	1.2	562	Q	Q	13.51
2 to 4 Persons	9.4	811	5.9	835	1.8	724	0.3	877	7.22
5 or More Persons	1.5	1,130	1.0	1,144	Q	Q	Q	Q	12.42
Secondary Heating									
Yes	7.0	886	4.0	934	1.5	770	.3	1,183	9.88
No	6.9	669	4.5	681	1.5	596	Q	Q	7.35
Hot Water Fuel									
Natural Gas	9.2	769	8.0	792	.9	583	NC	NC	8.12
Electricity	3.9	780	.4	1,015	2.2	711	Q	Q	13.78
Fuel Oil or Kerosene	Q	Q	NC	NC	NC	NC	NC	NC	99.99
Other .....	.7	895	Q	Q	Q	Q	.2	1,044	19.10
Climate Zone									
Under 2,000 CDD and--									
Over 7,000 HDD .....	.3	992	.2	1,104	.1	804	NC	NC	15.95
5,500 to 7,000 HDD	1.5	680	Q	Q	.8	684	Q	Q	33.48
4,000 to 5,499 HDD	2.0	810	Q	958	.8	636	Q	Q	23.16
Under 4,000 HDD	9.1	765	7.2	767	1.2	712	Q	981	11.40
2,000 CDD or More and --									
Under 4,000 HDD	Q	942	Q	Q	Q	Q	Q	Q	20.26

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors.

• Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report. • Column totals will not sum to total number of households because households with no main heating fuel or with other main heating fuel, such as wood, fuel oil, and kerosene were not included.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D, E, F, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 36. Natural Gas Consumption and Expenditures for West Region Households, 1987

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.639	0.896	0.896	0.906	0.595	1.777	0.925	0.925	0.928	
West Region	13.4	63.5	65.5	331	5.05	11.8	68.3	70.4	354	2.85
Metropolitan Status										
Metropolitan	12.4	62.0	64.0	328	5.13	10.9	66.8	68.9	351	2.80
Central City	6.1	61.0	62.9	313	4.98	5.3	66.5	68.5	339	3.39
Outside Central City	6.4	63.0	65.0	342	5.27	5.7	67.1	69.2	363	4.78
Nonmetropolitan	1.0	82.9	85.5	369	4.32	.9	86.9	89.6	383	9.09
Natural Gas Paid by Household										
Yes	10.2	69.1	71.3	358	5.02	9.4	71.6	73.9	371	4.31
No	3.2	45.4	46.8	244	5.21	2.4	54.7	56.4	285	10.97
Housing Structure										
Mobile Home .....	.6	68.6	70.7	337	4.77	.6	68.5	70.6	338	11.13
Single Family	8.3	73.1	75.4	384	5.09	7.7	75.6	77.9	397	3.93
Building of 2 or More Units	4.4	44.8	46.2	231	5.01	3.5	51.9	53.5	261	7.01
Number of Rooms										
1 to 3	2.2	35.5	36.6	184	5.01	1.8	39.0	40.3	200	6.96
4 to 5	5.7	57.6	59.3	290	4.89	5.0	61.9	63.8	308	4.00
6 or More	5.5	81.1	83.6	433	5.18	5.0	84.8	87.5	453	3.96
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	5.0	47.8	49.2	246	4.99	4.2	51.9	53.6	264	4.54
1,000 to 1,999	5.8	64.5	66.5	332	4.99	5.2	68.6	70.7	351	4.05
2,000 or More	2.6	92.3	95.2	498	5.23	2.4	96.4	99.4	517	3.95
Year of Construction										
1949 or Before	3.5	62.5	64.4	320	4.96	3.1	65.8	67.8	337	6.37
1950 to 1974	6.8	65.7	67.7	352	5.20	6.2	69.1	71.3	369	3.99
1975 or After	3.1	60.0	61.8	297	4.81	2.5	69.2	71.3	336	8.67
Status of Unit										
Owned	8.0	72.5	74.8	379	5.07	7.2	76.8	79.2	400	3.43
Rented	5.4	50.0	51.6	259	5.02	4.6	54.8	56.5	282	5.23
1987 Family Income										
Less than \$10,000	1.9	59.8	61.7	300	4.87	1.7	63.3	65.2	318	5.49
\$10,000 to \$19,999	2.8	61.5	63.4	305	4.81	2.5	65.2	67.2	320	5.71
\$20,000 to \$34,999	3.5	57.4	59.2	292	4.93	3.2	61.4	63.3	312	4.21
\$35,000 or More	5.2	70.2	72.4	384	5.30	4.4	76.7	79.1	416	4.48
Below 100 Percent of Poverty Line	1.3	60.1	61.9	321	5.17	1.1	65.1	67.1	345	7.08
Below 125 Percent of Poverty Line	2.0	62.5	64.4	317	4.92	1.7	67.6	69.7	342	5.51
Assistance for Heating in Winter										
Yes .....	.6	65.9	67.9	320	4.72	.5	72.7	75.0	353	3.87
No	12.8	63.4	65.4	331	5.07	11.3	68.1	70.2	354	2.95
Age of Householder										
Under 35 Years	4.7	56.8	58.6	296	5.05	4.0	61.5	63.4	318	5.84
35 to 59 Years	5.6	69.4	71.5	362	5.07	5.0	74.0	76.3	385	3.71
60 Years and Over	3.1	63.1	65.0	327	5.03	2.7	67.7	69.8	349	6.31

See footnotes at end of table.

Table 36. Natural Gas Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.639	0.896	0.896	0.906	0.595	1.777	0.925	0.925	0.928	
Household Size										
1 Person	2.8	44.4	45.7	218	4.77	2.4	49.7	51.2	241	7.74
2 to 4 Persons	8.9	66.2	68.3	344	5.04	7.9	70.6	72.8	365	2.88
5 or More Persons	1.8	80.1	82.6	442	5.35	1.5	84.9	87.5	469	6.80
Secondary Heating										
Yes	6.1	69.3	71.4	362	5.06	5.4	74.1	76.4	386	3.37
No	7.2	58.6	60.5	305	5.04	6.4	63.3	65.3	327	3.86
Hot Water Fuel										
Natural Gas	12.4	64.0	66.0	333	5.05	11.0	68.5	70.6	355	3.00
Electricity .....	.7	60.6	62.5	309	4.94	.6	67.9	70.0	342	8.25
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other .....	.2	47.4	48.9	283	5.79	.2	50.9	52.4	288	26.24
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD .....	.6	112.6	116.1	382	3.29	.5	123.2	127.0	418	6.47
5,500 to 7,000 HDD	2.0	94.8	97.7	426	4.36	1.9	96.2	99.2	430	5.98
4,000 to 5,499 HDD .....	.8	83.6	86.2	489	5.68	.8	87.2	89.9	508	17.42
Under 4,000 HDD	8.7	53.1	54.7	294	5.36	7.5	57.4	59.2	317	4.17
2,000 CDD or More and --										
Under 4,000 HDD	1.3	49.7	51.2	310	6.06	1.1	53.4	55.1	331	9.41

See footnotes at end of table.

Table 36. Natural Gas Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
	RSE Column Factors:	1.639	0.896	0.896	0.906	0.595	1.777	0.925	0.925		0.928
Mountain Division	3.5	87.5	90.2	410	4.54	3.0	90.7	93.5	424	4.56
Metropolitan Status										
Metropolitan	2.5	89.0	91.8	426	4.64	2.4	92.0	94.9	438	4.76
Central City	1.5	88.5	91.3	428	4.68	1.4	92.4	95.2	444	6.46
Outside Central City	1.0	89.7	92.5	424	4.58	1.0	91.6	94.4	430	6.26
Nonmetropolitan .....	.9	83.4	86.0	367	4.26	.9	86.9	89.6	383	6.22
Natural Gas Paid by Household										
Yes	2.7	92.1	95.0	436	4.59	2.6	94.4	97.3	445	4.92
No .....	.7	70.3	72.4	314	4.34	.7	76.3	78.6	340	15.55
Housing Structure										
Mobile Home .....	.3	82.3	84.9	397	4.68	.3	82.5	85.1	401	13.88
Single Family	2.4	94.0	96.9	441	4.55	2.3	96.3	99.3	450	4.96
Building of 2 or More Units .....	.8	69.3	71.5	319	4.47	.7	76.0	78.3	347	18.11
Number of Rooms										
1 to 3 .....	.4	55.0	56.7	248	4.37	.4	58.5	60.3	264	11.78
4 to 5	1.5	80.5	83.0	383	4.62	1.4	84.1	86.7	398	5.64
6 or More	1.6	102.3	105.5	476	4.51	1.5	104.7	107.9	486	5.02
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	1.2	67.4	69.5	321	4.62	1.1	71.7	73.9	340	5.80
1,000 to 1,999	1.5	89.1	91.9	425	4.62	1.4	91.7	94.5	435	5.67
2,000 or More .....	.8	113.4	116.9	511	4.37	.8	114.4	118.0	516	5.48
Year of Construction										
1949 or Before .....	.8	93.9	96.8	410	4.23	.8	96.6	99.6	421	10.44
1950 to 1974	1.8	88.4	91.2	420	4.60	1.7	89.6	92.4	424	5.75
1975 or After .....	.9	80.1	82.6	392	4.74	.8	87.4	90.1	427	13.08
Status of Unit										
Owned	2.4	92.8	95.6	433	4.53	2.3	94.8	97.7	441	4.50
Rented	1.0	75.4	77.7	357	4.60	1.0	80.8	83.3	382	9.48
1987 Family Income										
Less than \$10,000 .....	.8	77.3	79.7	351	4.40	.7	79.3	81.7	360	7.84
\$10,000 to \$19,999 .....	.9	90.5	93.3	413	4.43	.8	94.0	96.9	426	6.99
\$20,000 to \$34,999	1.0	83.6	86.2	395	4.59	.9	86.8	89.5	410	5.73
\$35,000 or More .....	.9	98.0	101.1	476	4.71	.8	102.3	105.4	496	7.91
Below 100 Percent of Poverty Line .....	.4	79.0	81.4	359	4.41	.4	82.2	84.7	375	9.15
Below 125 Percent of Poverty Line .....	.7	82.2	84.7	368	4.35	.7	84.2	86.8	378	8.19
Assistance for Heating in Winter										
Yes .....	.3	80.9	83.4	365	4.37	.3	84.3	86.9	383	8.85
No	3.2	88.1	90.8	414	4.56	3.0	91.2	94.1	427	4.73
Age of Householder										
Under 35 Years	1.2	80.5	83.0	399	4.80	1.1	84.6	87.2	416	7.28
35 to 59 Years	1.3	95.0	97.9	433	4.42	1.3	98.4	101.4	449	7.01
60 Years and Over .....	.9	85.9	88.5	392	4.43	.9	87.5	90.3	399	7.32

See footnotes at end of table.

Table 36. Natural Gas Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.639	0.896	0.896	0.906	0.595	1.777	0.925	0.925	0.928	
Household Size										
1 Person	0.8	65.2	67.3	299	4.45	0.8	68.3	70.4	313	10.54
2 to 4 Persons	2.1	92.2	95.0	425	4.47	2.0	95.7	98.6	439	4.62
5 or More Persons .....	.6	102.2	105.4	514	4.87	.5	104.8	108.0	529	9.65
Secondary Heating										
Yes	1.5	93.6	96.5	429	4.44	1.4	97.5	100.5	444	5.46
No	2.0	82.8	85.4	396	4.63	1.9	85.7	88.4	409	5.72
Hot Water Fuel										
Natural Gas	3.2	88.3	91.0	414	4.55	3.0	91.5	94.3	428	4.67
Electricity .....	.3	77.2	79.6	346	4.34	.2	80.7	83.2	353	14.34
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD .....	.4	97.8	100.9	341	3.38	.3	106.1	109.4	369	13.75
5,500 to 7,000 HDD	1.8	98.9	102.0	433	4.25	1.8	99.1	102.2	434	5.24
4,000 to 5,499 HDD	Q	144.6	149.0	706	4.74	Q	144.6	149.0	706	43.69
Under 4,000 HDD .....	.3	75.6	78.0	395	5.06	.3	78.0	80.4	405	12.90
2,000 CDD or More and --										
Under 4,000 HDD .....	.8	50.4	51.9	343	6.61	.7	54.9	56.6	372	5.49

See footnotes at end of table.

West

Mountain

Natural Gas

West

Pacific

Natural Gas

Table 36. Natural Gas Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.639	0.896	0.896	0.906	0.595	1.777	0.925	0.925	0.928	
Pacific Division	9.9	55.1	56.8	303	5.34	8.5	59.7	61.5	327	3.41
Metropolitan Status										
Metropolitan	9.9	55.1	56.8	303	5.33	8.5	59.7	61.5	327	3.41
Central City	4.6	52.0	53.6	276	5.14	3.9	57.1	58.9	300	3.41
Outside Central City	5.3	57.8	59.5	326	5.48	4.7	61.8	63.7	349	5.36
Nonmetropolitan	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Natural Gas Paid by Household										
Yes	7.5	60.7	62.6	329	5.26	6.8	63.0	65.0	343	5.16
No	2.4	37.9	39.0	223	5.70	1.7	46.2	47.7	263	10.57
Housing Structure										
Mobile Home .....	.3	51.8	53.4	264	4.94	.3	51.8	53.4	264	16.96
Single Family	6.0	64.7	66.7	361	5.40	5.5	67.0	69.1	375	4.71
Building of 2 or More Units	3.7	39.8	41.0	213	5.20	2.8	46.1	47.5	240	5.69
Number of Rooms										
1 to 3	1.8	31.2	32.1	169	5.27	1.4	33.8	34.9	184	7.52
4 to 5	4.3	49.6	51.1	258	5.04	3.6	53.5	55.2	273	4.53
6 or More	3.9	72.4	74.6	416	5.57	3.5	76.3	78.7	439	5.25
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	3.9	41.8	43.1	223	5.16	3.2	45.2	46.6	239	5.38
1,000 to 1,999	4.3	56.1	57.8	300	5.19	3.8	60.1	62.0	320	4.78
2,000 or More	1.7	82.3	84.9	491	5.79	1.6	87.3	90.0	518	4.67
Year of Construction										
1949 or Before	2.7	53.3	54.9	293	5.34	2.4	56.0	57.7	310	6.41
1950 to 1974	5.0	57.5	59.3	328	5.53	4.4	61.2	63.1	348	4.78
1975 or After	2.2	51.9	53.6	260	4.85	1.7	60.9	62.8	295	9.59
Status of Unit										
Owned	5.6	63.8	65.8	356	5.41	4.9	68.4	70.5	380	4.25
Rented	4.3	43.9	45.3	235	5.20	3.6	48.0	49.5	255	5.34
1987 Family Income										
Less than \$10,000	1.1	48.2	49.7	267	5.37	1.0	51.4	53.0	288	5.29
\$10,000 to \$19,999	1.9	48.6	50.1	256	5.12	1.7	51.4	53.0	269	6.67
\$20,000 to \$34,999	2.6	47.2	48.7	252	5.16	2.2	51.0	52.6	271	4.94
\$35,000 or More	4.3	64.6	66.6	365	5.48	3.6	71.1	73.3	398	4.68
Below 100 Percent of Poverty Line .....	.9	51.1	52.7	302	5.74	.7	55.8	57.5	330	7.90
Below 125 Percent of Poverty Line	1.3	52.0	53.6	290	5.41	1.1	57.1	58.8	319	5.92
Assistance for Heating in Winter										
Yes .....	.3	52.7	54.3	281	5.18	.2	60.4	62.3	322	10.20
No	9.6	55.2	56.9	304	5.34	8.3	59.7	61.5	327	3.48
Age of Householder										
Under 35 Years	3.5	48.6	50.1	260	5.20	2.9	52.6	54.3	281	6.67
35 to 59 Years	4.3	61.3	63.2	340	5.38	3.8	65.9	67.9	364	3.64
60 Years and Over	2.2	53.3	55.0	299	5.44	1.9	58.3	60.1	325	7.52

See footnotes at end of table.

Table 36. Natural Gas Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Natural Gas Used					Natural Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand cf)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.639	0.896	0.896	0.906	0.595	1.777	0.925	0.925	0.928	
Household Size										
1 Person	2.0	35.8	36.9	185	5.01	1.6	40.7	42.0	207	9.21
2 to 4 Persons	6.8	58.1	59.9	319	5.33	5.9	62.3	64.2	340	3.17
5 or More Persons	1.2	69.9	72.0	408	5.67	1.0	74.5	76.8	438	7.46
Secondary Heating										
Yes	4.6	61.3	63.2	340	5.37	4.0	66.0	68.1	365	3.95
No	5.3	49.7	51.2	271	5.30	4.5	54.0	55.7	293	4.41
Hot Water Fuel										
Natural Gas	9.2	55.6	57.4	305	5.32	8.0	60.0	61.9	328	3.57
Electricity .....	.5	51.7	53.3	289	5.42	.4	60.1	61.9	335	8.35
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other .....	.2	38.9	40.1	240	5.99	Q	Q	Q	Q	28.72
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD .....	.2	142.6	147.0	467	3.18	.2	156.9	161.8	514	10.05
5,500 to 7,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
4,000 to 5,499 HDD	Q	70.0	72.1	441	6.11	Q	73.5	75.7	461	7.88
Under 4,000 HDD	8.3	52.2	53.8	290	5.38	7.2	56.5	58.3	313	4.24
2,000 CDD or More and --										
Under 4,000 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, F of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

West

Pacific

Natural Gas

Table 37. Electricity Consumption and Expenditures for West Region Households, 1987

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.892	0.678	0.678	0.637	0.543	2.284	1.598	1.598	1.208	
West Region	18.3	7.74	26.4	548	20.76	3.8	11.53	39.3	713	4.79
Metropolitan Status										
Metropolitan	15.5	7.37	25.2	539	21.44	3.2	10.76	36.7	717	4.50
Central City	6.9	6.41	21.9	481	21.99	1.3	9.28	31.7	649	5.71
Outside Central City	8.6	8.15	27.8	586	21.10	1.9	11.79	40.2	764	6.68
Nonmetropolitan	2.8	9.74	33.2	595	17.91	.6	15.43	52.7	695	12.59
Electricity Paid by Household										
Yes	16.7	7.94	27.1	559	20.65	3.3	11.93	40.7	731	4.57
No	1.6	5.72	19.5	433	22.18	.5	8.59	29.3	587	13.12
Housing Structure										
Mobile Home	1.0	7.19	24.5	434	17.67	.2	14.12	48.2	629	19.51
Single Family	11.4	9.03	30.8	646	20.95	1.5	16.80	57.3	1,007	5.20
Building of 2 or More Units	5.8	5.31	18.1	378	20.84	2.2	7.82	26.7	525	7.34
Number of Rooms										
1 to 3	3.0	4.03	13.8	282	20.51	1.0	6.49	22.1	424	7.30
4 to 5	8.2	7.08	24.2	488	20.21	1.8	11.31	38.6	681	6.54
6 or More	7.1	10.09	34.4	731	21.24	1.0	16.94	57.8	1,062	5.06
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	7.1	5.30	18.1	384	21.21	1.7	8.08	27.6	494	6.63
1,000 to 1,999	7.9	8.67	29.6	606	20.48	1.7	13.56	46.3	852	6.17
2,000 or More	3.2	10.82	36.9	768	20.81	.4	17.84	60.9	1,069	10.57
Year of Construction										
1949 or Before	4.5	6.23	21.2	440	20.73	.4	10.35	35.3	638	12.00
1950 to 1974	8.7	7.47	25.5	537	21.07	1.4	10.97	37.4	635	7.17
1975 or After	5.1	9.52	32.5	662	20.36	2.0	12.14	41.4	783	7.49
Status of Unit										
Owned	11.0	9.04	30.9	644	20.88	1.7	14.98	51.1	933	5.32
Rented	7.3	5.77	19.7	403	20.45	2.1	8.81	30.1	540	7.20
1987 Family Income										
Less than \$10,000	2.9	6.29	21.5	421	19.60	.6	10.47	35.7	576	12.21
\$10,000 to \$19,999	3.7	6.33	21.6	428	19.82	.7	10.69	36.5	587	9.19
\$20,000 to \$34,999	5.0	7.35	25.1	526	20.97	1.1	10.82	36.9	689	6.72
\$35,000 or More	6.7	9.44	32.2	686	21.31	1.4	13.01	44.4	862	6.32
Below 100 Percent of Poverty Line	1.8	6.94	23.7	487	20.55	.4	11.78	40.2	680	13.84
Below 125 Percent of Poverty Line	2.9	6.79	23.2	465	20.09	.7	10.73	36.6	589	12.53
Assistance for Heating in Winter										
Yes .....	.8	6.60	22.5	420	18.63	.2	9.69	33.1	492	12.40
No	17.5	7.79	26.6	554	20.84	3.6	11.61	39.6	724	4.63
Age of Householder										
Under 35 Years	6.2	7.03	24.0	514	21.41	1.4	10.18	34.7	672	7.19
35 to 59 Years	7.5	8.54	29.1	610	20.94	1.3	12.75	43.5	794	6.06
60 Years and Over	4.7	7.40	25.3	495	19.60	1.0	11.83	40.4	667	8.15
Household Size										
1 Person	4.1	5.70	19.5	372	19.10	1.4	9.36	31.9	559	7.77
2 to 4 Persons	12.1	7.99	27.3	566	20.75	2.3	12.09	41.3	763	4.96
5 or More Persons	2.2	10.14	34.6	779	22.51	.2	20.68	70.6	1,246	7.67

See footnotes at end of table.

Table 37. Electricity Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.692	0.678	0.678	0.637	0.543	2.284	1.598	1.598	1.208	
Secondary Heating										
Yes	8.9	9.17	31.3	625	19.97	1.7	13.47	45.9	786	6.98
No	9.4	6.40	21.8	476	21.81	2.1	9.90	33.8	652	4.64
Hot Water Fuel										
Natural Gas	12.4	5.89	20.1	471	23.41	1.0	5.39	18.4	458	5.34
Electricity	4.9	12.50	42.7	734	17.20	2.7	13.63	46.5	792	7.97
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Other .....	.9	7.14	24.4	594	24.36	Q	Q	Q	Q	16.49
All-Electric Home										
Yes	2.7	13.60	46.4	791	17.05	2.7	13.60	46.4	791	9.26
No	15.6	6.74	23.0	507	22.03	1.1	6.71	22.9	534	4.61
Air Conditioning										
Yes	6.7	8.95	30.5	672	22.01	1.8	12.79	43.6	865	6.69
Central Unit	4.3	9.85	33.6	769	22.87	1.1	14.45	49.3	1,026	7.76
Electric	4.0	10.16	34.7	790	22.78	1.1	14.45	49.3	1,026	7.44
Individual Room Units 1	2.4	7.33	25.0	498	19.92	.7	10.32	35.2	623	13.08
One Unit	2.1	6.99	23.9	463	19.40	.6	10.34	35.3	585	13.88
Two or More Units .....	.4	9.28	31.6	702	22.18	Q	10.24	34.9	782	24.03
No	11.6	7.03	24.0	476	19.82	2.0	10.34	35.3	571	6.12
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD .....	.9	8.51	29.0	519	17.90	.1	12.42	42.4	763	12.51
5,500 to 7,000 HDD	3.6	9.51	32.5	542	16.69	1.0	15.37	52.4	732	16.46
4,000 to 5,499 HDD	2.2	11.31	38.6	604	15.65	.8	12.40	42.3	622	10.94
Under 4,000 HDD	9.5	5.92	20.2	487	24.09	1.2	7.55	25.8	628	8.46
2,000 CDD or More and --										
Under 4,000 HDD	2.2	8.87	30.3	783	25.87	.6	11.96	40.8	961	8.16

See footnotes at end of table.

Table 37. Electricity Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
	0.892	0.678	0.678	0.637	0.543	2.284	1.598	1.598	1.208	
Mountain Division	4.4	8.15	27.8	591	21.26	0.7	14.39	49.1	1,026	7.74
Metropolitan Status										
Metropolitan	3.1	7.79	26.6	617	23.24	.6	12.80	43.7	1,032	7.24
Central City	1.8	7.30	24.9	564	22.62	Q	11.35	38.7	907	7.78
Outside Central City	1.3	8.45	28.8	690	23.95	.3	14.68	50.1	1,196	10.89
Nonmetropolitan	1.4	8.95	30.5	533	17.45	.1	21.41	73.0	1,001	16.53
Electricity Paid by Household										
Yes	3.9	8.59	29.3	618	21.10	.7	14.67	50.1	1,044	8.24
No .....	.5	4.88	16.7	388	23.29	Q	Q	Q	Q	24.21
Housing Structure										
Mobile Home .....	.5	6.78	23.2	448	19.36	Q	Q	Q	Q	22.44
Single Family	3.1	9.31	31.8	663	20.88	.4	18.50	63.1	1,273	6.90
Building of 2 or More Units .....	.9	4.99	17.0	424	24.86	.3	7.29	24.9	637	9.12
Number of Rooms										
1 to 3 .....	.5	4.41	15.1	357	23.70	.1	6.72	22.9	613	8.93
4 to 5	1.9	6.99	23.8	510	21.41	.3	12.50	42.7	910	12.16
6 or More	2.0	10.26	35.0	731	20.88	.3	19.37	66.1	1,309	7.29
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	1.5	5.28	18.0	406	22.52	.3	7.81	26.7	655	9.30
1,000 to 1,999	2.0	9.28	31.7	671	21.21	.4	17.12	58.4	1,217	6.19
2,000 or More	1.0	10.24	34.9	711	20.36	Q	Q	Q	Q	11.73
Year of Construction										
1949 or Before .....	.9	6.57	22.4	460	20.54	Q	Q	Q	Q	19.33
1950 to 1974	2.1	7.33	25.0	528	21.12	.2	12.82	43.7	865	11.78
1975 or After	1.4	10.35	35.3	766	21.68	.5	15.09	51.5	1,093	13.47
Status of Unit										
Owned	3.1	8.96	30.6	642	20.99	.4	17.37	59.3	1,210	7.13
Rented	1.3	6.26	21.4	473	22.14	.3	10.02	34.2	759	14.47
1987 Family Income										
Less than \$10,000	1.0	6.03	20.6	405	19.67	.7	12.33	42.1	732	16.77
\$10,000 to \$19,999	1.1	7.00	23.9	519	21.71	.1	10.27	35.0	786	14.67
\$20,000 to \$34,999	1.3	7.70	26.3	565	21.53	.2	12.29	41.9	928	10.23
\$35,000 or More	1.1	11.50	39.2	843	21.50	.3	18.75	64.0	1,335	9.31
Below 100 Percent of Poverty Line .....	.6	7.05	24.1	479	19.89	.1	13.97	47.7	778	22.98
Below 125 Percent of Poverty Line .....	.9	6.90	23.6	460	19.51	.1	14.88	50.8	813	22.53
Assistance for Heating in Winter										
Yes .....	.3	6.10	20.8	403	19.37	Q	Q	Q	Q	19.39
No	4.1	8.32	28.4	607	21.37	.7	14.71	50.2	1,059	7.76
Age of Householder										
Under 35 Years	1.5	7.69	26.2	622	23.73	.4	11.79	40.2	955	10.84
35 to 59 Years	1.8	9.45	32.2	639	19.84	.3	17.25	58.9	1,124	11.45
60 Years and Over	1.1	6.67	22.7	469	20.63	Q	Q	Q	Q	13.80
Household Size										
1 Person	1.0	5.07	17.3	385	22.22	.2	9.42	32.1	721	14.59
2 to 4 Persons	2.7	8.51	29.0	612	21.06	.5	15.19	51.8	1,087	7.40
5 or More Persons .....	.7	11.22	38.3	811	21.19	Q	Q	Q	Q	11.40

See footnotes at end of table.

Table 37. Electricity Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors	0.892	0.678	0.678	0.637	0.543	2.284	1.598	1.598	1.208	
Secondary Heating										
Yes	1.9	9.04	30.8	646	20.94	0.2	17.23	58.8	1,198	9.75
No	2.6	7.51	25.6	552	21.53	.5	13.25	45.2	958	9.10
Hot Water Fuel										
Natural Gas	3.2	6.40	21.8	492	22.55	.1	6.41	21.9	534	10.27
Electricity	1.0	13.10	44.7	856	19.15	.6	15.93	54.3	1,117	10.74
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other	Q	9.95	33.9	754	22.21	Q	Q	Q	Q	28.98
All-Electric Home										
Yes .....	.6	16.13	55.0	1,130	20.53	.6	16.13	55.0	1,130	13.33
No	3.9	7.02	24.0	515	21.49	.2	8.94	30.5	704	10.65
Air Conditioning										
Yes	1.8	9.95	34.0	758	22.31	.6	14.78	50.4	1,082	10.29
Central Unit	1.2	11.25	38.4	851	22.17	.4	17.76	60.6	1,255	8.08
Electric	1.0	12.65	43.1	944	21.88	.4	17.76	60.6	1,255	5.99
Individual Room Units ¹ .....	.5	7.02	24.0	547	22.82	Q	8.03	27.4	690	20.50
One Unit .....	.5	6.88	23.5	533	22.71	Q	8.98	30.6	760	20.72
Two or More Units .....	.1	7.77	26.5	618	23.31	Q	Q	Q	Q	39.31
No	2.7	6.94	23.7	479	20.24	.1	12.52	42.7	766	12.33
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD .....	.6	7.98	27.2	465	17.07	Q	Q	Q	Q	8.97
5,500 to 7,000 HDD	2.1	7.34	25.0	494	19.71	Q	18.45	63.0	1,008	21.25
4,000 to 5,499 HDD	Q	8.18	27.9	591	21.18	NC	NC	NC	NC	63.75
Under 4,000 HDD	Q	7.44	25.4	587	23.11	Q	Q	Q	Q	31.09
2,000 CDD or More and --										
Under 4,000 HDD	1.2	9.86	33.7	826	24.56	.5	13.16	44.9	1,058	7.11

See footnotes at end of table.

West

Mountain

Electricity

Table 37. Electricity Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.892	0.678	0.678	0.637	0.543	2.284	1.598	1.598	1.208	
Pacific Division	13.9	7.61	26.0	534	20.58	3.1	10.85	37.0	640	5.10
Metropolitan Status										
Metropolitan	12.4	7.27	24.8	520	20.97	2.6	10.30	35.1	645	4.59
Central City	5.1	6.10	20.8	452	21.73	1.0	8.56	29.2	559	6.15
Outside Central City	7.3	8.09	27.6	568	20.57	1.6	11.33	38.6	696	7.04
Nonmetropolitan	1.4	10.50	35.8	655	18.28	.5	13.79	47.1	611	16.42
Electricity Paid by Household										
Yes	12.8	7.74	26.4	541	20.50	2.6	11.20	38.2	647	5.67
No	1.1	6.12	20.9	454	21.76	.4	8.75	29.8	593	14.98
Housing Structure										
Mobile Home .....	.6	7.52	25.7	422	16.44	Q	Q	Q	Q	31.19
Single Family	8.4	8.93	30.5	639	20.98	1.0	16.06	54.8	892	6.56
Building of 2 or More Units	4.9	5.37	18.3	369	20.13	1.9	7.89	26.9	510	8.88
Number of Rooms										
1 to 3	2.5	3.95	13.5	266	19.74	.9	6.45	22.0	394	9.15
4 to 5	6.3	7.11	24.3	481	19.85	1.5	11.09	37.8	639	7.59
6 or More	5.1	10.02	34.2	731	21.38	.7	15.83	54.0	949	6.61
Measured Heated Area of Residence (square feet)										
Fewer than 1,000	5.6	5.31	18.1	378	20.87	1.4	8.13	27.7	461	7.76
1,000 to 1,999	6.0	3.47	28.9	584	20.21	1.4	12.57	42.9	750	8.01
2,000 or More	2.3	11.07	37.8	793	20.99	.3	15.55	53.1	959	13.05
Year of Construction										
1949 or Before	3.6	6.14	21.0	435	20.78	.4	10.46	35.7	643	13.37
1950 to 1974	6.6	7.52	25.6	540	21.05	1.2	10.71	36.5	602	8.32
1975 or After	3.7	9.20	31.4	621	19.78	1.5	11.07	37.8	670	9.29
Status of Unit										
Owned	7.9	9.08	31.0	645	20.84	1.2	14.15	48.3	837	6.70
Rented	5.9	5.66	19.3	387	20.03	1.8	8.62	29.4	505	8.44
1987 Family Income										
Less than \$10,000	1.9	6.42	21.9	429	19.57	.5	10.06	34.3	542	15.15
\$10,000 to \$19,999	2.7	6.07	20.7	392	18.95	.6	10.79	36.8	539	10.99
\$20,000 to \$34,999	3.8	7.24	24.7	513	20.77	.9	10.50	35.8	636	8.10
\$35,000 or More	5.5	9.01	30.8	654	21.26	1.1	11.55	39.4	742	7.18
Below 100 Percent of Poverty Line	1.2	6.89	23.5	490	20.85	.3	11.03	37.6	647	16.72
Below 125 Percent of Poverty Line	2.0	6.74	23.0	468	20.37	.5	9.78	33.4	538	14.38
Assistance for Heating in Winter										
Yes .....	.4	6.99	23.8	432	18.13	.1	9.21	31.4	412	17.01
No	13.4	7.63	26.0	538	20.66	3.0	10.92	37.2	648	5.11
Age of Householder										
Under 35 Years	4.6	6.82	23.3	478	20.55	1.1	9.63	32.9	576	8.34
35 to 59 Years	5.7	8.25	28.1	600	21.34	1.1	11.56	39.5	707	6.76
60 Years and Over	3.6	7.63	26.0	503	19.32	.9	11.45	39.1	636	9.35
Household Size										
1 Person	3.0	5.91	20.2	367	18.19	1.2	9.35	31.9	533	9.14
2 to 4 Persons	9.4	7.85	26.8	553	20.66	1.8	11.25	38.4	675	6.21
5 or More Persons	1.5	9.62	32.8	763	23.25	Q	Q	Q	Q	7.20

See footnotes at end of table.

Table 37. Electricity Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Electricity Used					Electricity Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (thousand kWh)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
Row Column Factors:	0.892	0.678	0.678	0.937	0.543	2.284	1.598	1.598	1.208	
Secondary Heating										
Yes	7.0	9.20	31.4	619	19.72	1.5	12.96	44.2	731	8.18
No	6.9	5.98	20.4	447	21.94	1.5	8.77	29.9	549	5.56
Hot Water Fuel										
Natural Gas	9.2	5.72	19.5	463	23.75	.9	5.26	18.0	449	6.05
Electricity	3.9	12.34	42.1	701	16.65	2.2	13.03	44.5	707	9.85
Fuel Oil or Kerosene	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Other .....	.7	6.21	21.2	540	25.51	Q	Q	Q	Q	21.65
All-Electric Home										
Yes	2.1	12.93	44.1	702	15.91	2.1	12.93	44.1	702	11.55
No	11.7	6.65	22.7	504	22.22	1.0	6.30	21.5	502	4.96
Air Conditioning										
Yes	5.0	8.59	29.3	642	21.88	1.2	11.84	40.4	760	8.70
Central Unit	3.1	9.30	31.7	736	23.21	.7	12.45	42.5	888	10.63
Electric	3.0	9.35	31.9	739	23.17	.7	12.45	42.5	888	10.49
Individual Room Units ¹	1.9	7.42	25.3	484	19.11	.6	11.07	37.8	601	15.64
One Unit	1.6	7.02	24.0	443	18.47	.5	10.75	36.7	532	16.60
Two or More Units .....	.3	9.77	33.3	730	21.88	Q	Q	Q	Q	26.72
No	8.9	7.06	24.1	475	19.70	1.8	10.19	34.8	558	6.71
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD .....	.3	9.74	33.2	647	19.48	.1	11.67	39.8	787	14.23
5,500 to 7,000 HDD	1.5	12.52	42.7	608	14.24	.8	14.83	50.6	684	23.65
4,000 to 5,499 HDD	2.0	11.54	39.4	605	15.36	.8	12.40	42.3	622	11.64
Under 4,000 HDD	9.1	5.86	20.0	482	24.14	1.2	7.40	25.3	622	8.71
2,000 CDD or More and --										
Under 4,000 HDD	Q	7.64	26.1	729	28.00	Q	Q	Q	Q	18.82

^a No applicable RSE row factor.

^{nc} No cases in sample.

^Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

¹ Homes having both a central air conditioner and one or more window or wall units are not included here. They are included under "Central Unit".

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, E of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 38. Fuel Oil or Kerosene Consumption and Expenditures for West Region Households, 1987

Household Characteristics	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	RSE Row Factors
RSE Column Factors:	1.333	1.194	1.197	1.078	0.487	
West Region	0.6	225	31.1	190	6.11	20.99
Metropolitan Status						
Metropolitan .....	.5	225	31.2	189	6.05	22.59
Central City	Q	Q	Q	Q	5.60	58.53
Outside Central City .....	.3	245	33.9	210	6.19	21.56
Nonmetropolitan .....	.1	Q	Q	Q	6.31	43.97
Number of Rooms						
1 to 3	Q	NC	NC	NC	NC	a
4 to 5 .....	.2	204	28.2	160	5.68	28.99
6 or More .....	.4	245	33.9	213	6.29	20.90
Measured Heated Area of Residence (square feet)						
Fewer than 1,000	Q	Q	Q	Q	Q	a
1,000 to 1,999 .....	.2	197	27.3	157	5.73	25.92
2,000 or More .....	.3	262	36.3	218	6.02	22.04
Year of Construction						
1949 or Before .....	.2	247	34.2	190	5.57	22.98
1950 to 1974 .....	.3	257	35.6	221	6.19	26.56
1975 or After	Q	Q	Q	Q	Q	a
Status of Unit						
Owned .....	.5	225	31.2	186	5.96	20.44
Rented	Q	Q	Q	Q	Q	a
1987 Family Income						
Less than \$10,000	Q	Q	Q	Q	Q	a
\$10,000 to \$19,999 .....	.2	317	43.9	247	5.63	38.91
\$20,000 to \$34,999 .....	.2	171	23.7	170	7.17	25.85
\$35,000 or More .....	.2	200	27.8	166	5.97	31.11
Age of Householder						
Under 35 Years	Q	Q	Q	Q	Q	a
35 to 59 Years .....	.3	105	14.5	112	7.73	29.82
60 Years and Over .....	.3	366	50.8	286	5.63	20.72

a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • Data on fuel oil or kerosene consumption in the Mountain and Pacific Divisions are not presented due to a scarcity of data. Data for the West Region are presented in abbreviated form. • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, G of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 39. Liquefied Petroleum Gas Consumption and Expenditures for West Region Households, 1987

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors	1.228	1.102	1.102	0.792	0.722	1.595	1.009	1.009	0.722	
West Region	1.0	531	48.5	451	9.30	0.6	773	70.6	601	18.70
Metropolitan Status										
Metropolitan .....	.4	536	49.0	530	10.81	.3	663	60.6	632	25.53
Central City	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Outside Central City .....	.4	594	54.3	585	10.78	.3	710	64.8	675	25.86
Nonmetropolitan .....	.6	527	48.1	394	8.19	.3	897	81.9	566	26.48
LPG Paid by Household										
Yes .....	.9	516	47.1	447	9.48	.5	775	70.8	610	20.12
No	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Housing Structure										
Mobile Home .....	.2	547	49.9	432	8.65	Q	Q	Q	Q	22.30
Single Family .....	.8	535	48.9	462	9.45	.4	810	73.9	638	21.65
Building of 2 or More Units	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
Number of Rooms										
1 to 3 .....	.2	Q	Q	283	10.64	Q	Q	Q	Q	43.42
4 to 5 .....	.5	607	55.5	525	9.47	.4	735	67.1	593	15.91
6 or More .....	.3	532	48.5	411	8.46	Q	Q	Q	Q	32.56
Measured Heated Area of Residence (square feet)										
Fewer than 1,000 .....	.5	386	35.2	348	9.87	.2	605	55.3	440	19.99
1,000 to 1,999 .....	.3	532	48.6	419	8.61	.2	672	61.4	522	19.35
2,000 or More	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Year of Construction										
1949 or Before .....	.3	376	34.3	308	8.96	.1	668	61.0	432	36.50
1950 to 1974 .....	.6	597	54.5	517	9.49	.4	787	71.9	646	18.45
1975 or After	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Status of Unit										
Owned .....	.7	559	51.1	472	9.25	.5	773	70.6	610	21.43
Rented .....	.2	441	40.2	384	9.54	Q	Q	Q	Q	23.19
1987 Family Income										
Less than \$10,000 .....	.3	459	41.9	472	11.27	Q	Q	Q	Q	31.13
\$10,000 to \$19,999 .....	.2	Q	Q	535	Q	Q	Q	Q	Q	33.44
\$20,000 to \$34,999 .....	.3	512	46.7	395	8.45	.2	635	58.0	456	29.36
\$35,000 or More .....	.3	500	45.7	435	9.53	.2	728	66.5	621	19.42
Below 100 Percent of Poverty Line	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Below 125 Percent of Poverty Line .....	.3	547	49.9	535	10.72	Q	Q	Q	Q	30.15
Assistance for Heating in Winter										
Yes	Q	Q	Q	Q	Q	NC	NC	NC	NC	a
No .....	.9	538	49.2	451	9.17	.6	773	70.6	601	19.17
Age of Householder										
Under 35 Years .....	.2	552	50.4	438	8.70	Q	Q	Q	Q	19.70
35 to 59 Years .....	.4	404	36.9	361	9.79	.2	751	68.6	567	21.70
60 Years and Over .....	.4	672	61.4	565	9.20	.3	769	70.2	620	33.31

See footnotes at end of table.

Table 39. Liquefied Petroleum Gas Consumption and Expenditures for West Region Households, 1987 (Continued)

Household Characteristics	Any Liquefied Petroleum Gas Used					Liquefied Petroleum Gas Used as Main Heating Fuel				RSE Row Factors
	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	
RSE Column Factors:	1.228	1.102	1.102	0.792	0.722	1.595	1.009	1.009	0.722	
Household Size										
1 Person	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
2 to 4 Persons	0.7	421	38.5	364	9.47	0.4	608	55.5	468	18.19
5 or More Persons .....	.1	726	66.3	602	9.08	Q	Q	Q	Q	31.56
Secondary Heating										
Yes .....	.6	619	56.6	529	9.35	.4	844	77.1	683	24.16
No .....	.4	412	37.6	346	9.20	.2	650	59.3	460	14.00
Hot Water Fuel										
Natural Gas	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Electricity .....	.4	342	31.2	329	10.54	.2	527	48.2	465	18.49
Fuel Oil or Kerosene	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Other .....	.6	660	60.3	535	8.87	.4	924	84.4	685	21.00
Climate Zone										
Under 2,000 CDD and--										
Over 7,000 HDD	Q	997	91.1	539	5.91	Q	1,173	107.1	635	21.87
5,500 to 7,000 HDD	Q	411	37.5	377	Q	Q	Q	Q	Q	42.52
4,000 to 5,499 HDD	Q	Q	Q	Q	Q	Q	Q	Q	Q	a
Under 4,000 HDD	Q	487	44.5	523	11.76	.2	559	51.1	565	26.66
2,000 CDD or More and --										
Under 4,000 HDD .....	.2	295	27.0	359	13.31	Q	Q	Q	Q	33.42

^a No applicable RSE row factor.

NC No cases in sample.

Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • Data on LPG in the Mountain and Pacific Divisions are not presented due to a scarcity of data. • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C, D of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Table 40. Wood Consumption for West Region Households for Year Ending November 1987

Household Characteristics	Households Burning Wood		Cords Burned		Cords Burned per Household	RSE Row Factors
	(million)	(percent)	(million)	(percent)		
RSE Column Factors:	0.923	0.810	1.384	0.957	1.011	
West Region	6.0	100.0	8.6	100.0	1.4	6.98
Census Division						
Mountain	1.3	21.8	1.3	15.4	1.0	11.57
Pacific	4.7	78.2	7.3	84.6	1.5	6.08
Metropolitan Status						
Metropolitan	4.9	81.4	4.9	57.3	1.0	7.50
Central City	1.6	26.3	1.1	12.3	.7	14.12
Outside Central City	3.3	55.0	3.9	45.0	1.2	10.00
Nonmetropolitan	1.1	18.6	3.7	42.7	3.3	10.02
Measured Heated Area of Residence (square feet)						
Fewer than 1,000	1.1	18.5	2.4	27.7	2.1	15.11
1,000 to 1,999	2.9	48.1	4.3	49.8	1.5	8.50
2,000 or More	2.0	33.4	1.9	22.5	1.0	10.04
1987 Family Income						
Less than \$10,000 .....	.5	8.2	1.4	15.9	2.8	17.97
\$10,000 to \$19,999 .....	.9	14.2	1.3	15.2	1.5	14.08
\$20,000 to \$34,999	1.6	25.8	2.6	30.4	1.7	14.29
\$35,000 or More	3.1	51.8	3.3	38.6	1.1	9.62
Assistance for Heating in Winter						
Yes .....	.2	2.7	.7	8.5	4.5	24.54
No	5.9	97.3	7.9	91.5	1.3	5.63
Amount of Wood Burned						
Less than 2 Cords	4.3	71.6	2.0	23.2	.5	8.44
2 to 4 Cords	1.2	19.6	3.3	38.6	2.8	9.51
More than 4 Cords .....	.5	8.8	3.3	38.1	6.1	12.14
Wood is Main Heating Fuel						
Yes	1.2	20.4	4.3	49.7	3.5	10.72
No	4.8	79.6	4.3	50.3	.9	6.87
Year of Construction						
1949 or Before	1.4	22.6	2.7	30.9	1.9	12.40
1950 to 1974	2.7	44.6	3.1	35.6	1.1	11.68
1975 or After	2.0	32.8	2.9	33.5	1.5	12.74
Climate Zone						
Under 2,000 CDD and--						
Over 7,000 HDD .....	.3	5.0	.6	7.6	2.2	31.66
5,500 to 7,000 HDD	1.6	26.7	3.3	37.9	2.0	18.31
4,000 to 5,499 HDD	1.1	17.6	1.9	22.4	1.8	30.11
Under 4,000 HDD	2.6	43.7	2.3	27.2	.9	19.04
2,000 CDD or More and --						
Under 4,000 HDD .....	.4	7.0	Q	Q	1.0	50.98

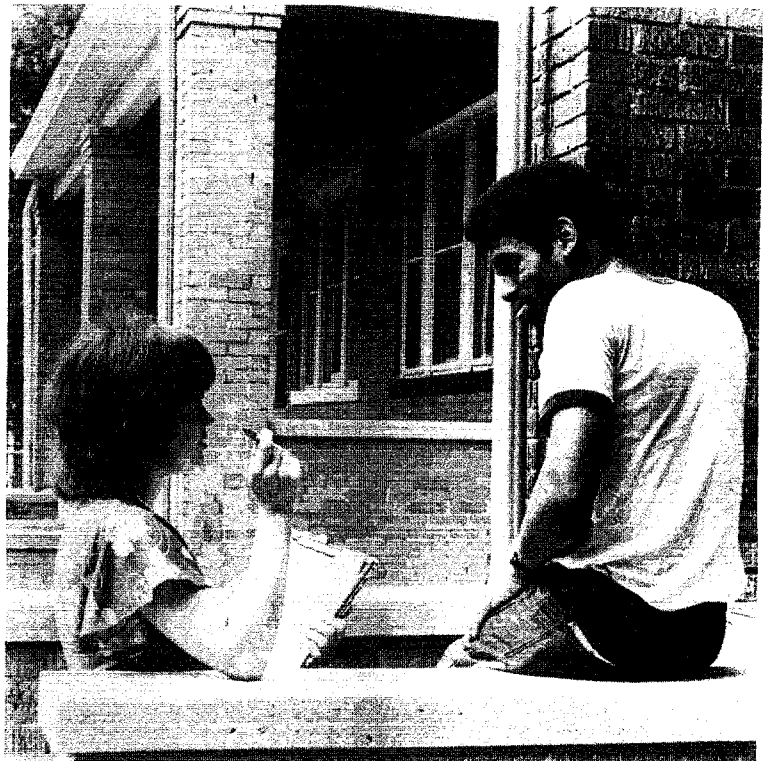
Q Data withheld either because the RSE was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain a Relative Standard Error percent (RSE) for any table cell, multiply the cell's corresponding column and row factors. • Percentages are calculated on unrounded numbers. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-457 A, B, C of the 1987 Residential Energy Consumption Survey. (For specific titles of forms, see Appendix G, "Survey Forms Titles.")

Appendix A

How the Survey Was Conducted



How the Survey Was Conducted

Introduction

The Residential Energy Consumption Survey (RECS) was designed by the Energy Information Administration (EIA) to provide information concerning energy consumption within the residential sector. The RECS is conducted in two major parts: the Household Survey and the Fuel Supplier Survey. The Household Survey collects information concerning the housing unit through personal interviews with a representative national sample of households. In the Fuel Supplier Survey, data concerning actual energy consumption are obtained from billing records maintained by the household's fuel suppliers. These data are collected via questionnaires mailed to all the suppliers for the households in the Household Survey. Copies of all the data collection forms for the Household Survey and the adjunct Rental Agent Survey, and the Fuel Supplier Survey are reproduced in the companion report *Households Energy Consumption and Expenditures 1987, Part 1: National Data*.

This report provides regional data based on the results from the Fuel Supplier Survey. A companion report *Household Energy Consumption and Expenditures 1987, Part 1: National Data* presents the results of the Fuel Supplier Survey on a national level. A previous report, *Housing Characteristics 1987*, presented data based on results from the Household Survey.

This appendix contains sections providing detailed information for the Sample Design, Household Survey and its adjunct Rental Agent Survey, Supplemental Data Collection for the Family Support Administration, Fuel Supplier Survey, Confidentiality of the Data, Data Preparation for the Report and Public Use Tape Preparation.

Sample Design

The universe for the RECS includes all housing units occupied as the primary residence in the 50 States and the District of Columbia. The sample of households used as the basis for the 1987 estimates was selected by using a probability sampling design developed especially for the RECS. The current sample design was used for the first time for the 1980 RECS and was revised prior to the 1984 survey.

Multistage Area Probability Sample

In both the original and revised sample designs, the total land area of the 50 States and District of Columbia was divided into approximately 1,800 Primary Sampling Units (PSU's) on the basis of Metropolitan Statistical Areas (MSA's), county and independent city boundary lines, and population characteristics.³

Specific objectives of the 1984 sample revisions were to update the information for U.S. counties used in sample selection, to maximize the overlap of specific PSU's selected in 1980 and 1984, and to minimize the restructuring of the sample within PSU's that continued in the revised design. The 1980 design included a requirement for a minimum level of precision of estimates for the 9 geographically defined Census divisions and the 10 Federal regions. The requirement for Census divisions was retained for the 1984 design, but the requirement for Federal regions was dropped. In all other respects, the design of sample revisions was based

³Boundary definitions for counties, independent cities, and equivalent units were generally those used by the Census of Population and Housing, 1970 and 1980, for the original and revised designs, respectively. There were 3,141 such units in the 1970 Census and 3,135 in the 1980 Census. Prior to 1983, MSA's were referred to as Standard Metropolitan Statistical Areas. The number of PSU's created for the 1980 and 1984 RECS sample designs were, respectively, 1,782 and 1,799. Additional detail on RECS sample design can be found in "The 1987 RECS Sample Design Procedures Manual," prepared by the Response Analysis Corporation.

Table A1. Sources of Data for 1987 RECS Sample Design

Data Components	Source of Data Used in 1980 Design	Source of New Data Used in 1984 Revisions
Population estimates for counties and equivalent units	July 1978 estimates of the Bureau of the Census	1980 Census of Population
Metropolitan statistical area (MSA) definitions	Lists published by Office of Management and Budget (OMB). Current as of early 1980, with some modifications based on estimates of population changes	OMB definitions published June 27, 1983
Principal home heating fuel	1970 Census of Housing	1980 Census of Housing

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

on a continuation of the general plan used for the 1980, 1981, and 1982 RECS. Three principal sources of information were used to update the data base used for sample revisions: population estimates, MSA definitions, and principal heating fuel (Table A1).

Stratification of PSU's in both the original and revised designs was based on the nine geographically defined Census divisions, metropolitan or nonmetropolitan definitions of PSU's, and to the extent feasible, on dominant space-heating fuel and weather conditions. PSU's in the original design were grouped into 131 strata and in the revised design into 129 strata (Figure A1).

Some PSU's comprising all or part of large metropolitan areas were large enough in population to be a stratum by themselves; PSU's of this type are called Self-

Representing (SR) because the sample from each PSU represents only that PSU. In other strata, one PSU was selected from among two or more PSU's in the stratum. Each of the PSU's selected from these strata is called Non-Self-Representing (NSR) because each PSU also represents the nonselected PSU's in its stratum. The revised design included 129 strata, of which 32 were SR PSU's and 97 were NSR.

Although both PSU's and strata were often defined somewhat differently in the two designs, the specific procedures used to make probability selections of PSU's for the revised design produced a high degree of overlap in the actual PSU's selected. Of the 125 PSU's in the revised design, 111 continued in the sample from the original design and 18 were newly selected.

Figure A1. Multistage Area Probability Sample Activities

Primary Sampling Units

(PSU): Large metropolitan areas or groups of counties containing small cities and rural areas. The United States was divided into PSU's from which a sample of PSU's was selected.



Minor Civil Divisions

(MCD): Cities, towns, townships, other civil divisions and Census County Divisions. The sampled PSU's were divided into MCD's. One or more MCD was selected from each sampled PSU.

Secondary Sampling Units

(SSU): Block Groups, Enumeration Districts, and/or Census Tracts. The sampled MCD's were divided into SSU's. One or more SSU was selected from each sampled MCD.



Segments

Neighborhoods of housing units. The sampled SSU's were divided into segments. One segment was selected from each sampled SSU. A list was prepared of all housing units in each sampled segment.

Ultimate Clusters



Groups of housing units. An ultimate cluster of approximately 5 housing units was selected from the list of housing units for each sampled segment. The housing units in the ultimate clusters were selected to be used for the RECS.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, the 1987 Residential Energy Consumption Survey.

A number of intermediate probability sampling stages producing successively finer geographic detail, preceded the final selection of RECS households in the 1987 sample.

- *Minor Civil Divisions (MCD)* such as cities, towns, and other Census units were selected within each PSU. Within the MCD's, Secondary Sampling Units consisting of census tracts, block groups, or enumeration districts (ED's) were selected. In the RECS design, 1,516 units are selected at this secondary level (tracts or ED's). These tracts and ED's continue in the RECS sample for a number of surveys. Rough field counts in tracts and ED's form the basis for selection of listing segments of 25 or more housing units, with well-defined geographic boundaries.
- A *listing segment* is selected from each tract or ED. Detailed field listings are created for selected segments by field workers who visit the area and identify each housing unit by street address, apartment number, or other obvious features.
- A *penultimate cluster* of 25 or fewer housing units is selected from each *listing segment*. The *ultimate cluster* to be contacted for interviews (averaging about 5 housing units for the 1987 RECS) is systematically selected from the penultimate cluster, and these housing units constitute the assignments given to interviewers.

Longitudinal Sample Design

A plan for rotation of sample units from an earlier RECS, first used in the 1982 RECS, was continued in 1987. The primary objective of this rotation plan was to observe changes in a sample of the same housing units over the period between two RECS data-collection cycles. To accomplish this objective in an efficient way and to set the stage for continuity in the RECS series, systematic random procedures were used to divide the total set of 1,516 tracts and ED's into four subsamples, designated in Table A2 as C, D, E, and F.

In the 1987 RECS, Groups C and D were the returning rotation groups in which procedures were designed to interview a sample of the same housing units that had been in the sample in the preceding 1984 RECS. The half of the sample had used the revised design for the 1984 RECS.

Groups E and F constitute the new rotation groups in which housing units were included in the RECS sample for the first time in 1987. Selection of housing units in the new rotation groups was based on the revised sample design used for the first time for this half of the 1987 RECS.

Procedures for updating the sample for new construction and for other changes in the housing unit stock were incorporated in sampling operations so that each rotation group, as well as the total RECS sample, is a probability sample of the population covered by the survey.

Returning Rotation Groups C and D

The general plan for these sample units (758 of the total of 1,516) was to conduct interviews in the same housing units that had been contacted 3 years earlier--including housing units that had been vacant, as well as noninterviews (refusals, not-at-homes, etc.), and completed units--plus a supplemental sample of housing units in sample clusters believed to include large proportions of low-income households.

Before contacting households for the 1987 RECS, interviewers made visits to sample segments to check 1984 housing unit listings for missed units and to update listings for new construction, demolition, and conversion of structures from one use to another. Newly constructed or converted units, and those missed in the 1984 listings, were sampled at the 1987 RECS sampling rate.

Rotation Groups E and F

The 758 sample units (at the census tract or ED level) in these rotation groups included 615 that continued in the sample from the original design and 143 newly

Table A2. Overview of RECS Sample Operations

Rotation Group	1982	1984	1987	1990
C	R	S ^a	R	N
D	R	N ^a	R	S
E	S	R	N ^a	R
F	N	R	S ^a	R

^a Revised sample used for the first time for these rotation groups; new tracts/ED's were selected in sample units that did not continue from the original sample.

R = Housing units return from preceding survey.

S = Selected housing units from the same penultimate clusters as had been used in the preceding survey.

N = Selected new listing segments.

selected units. In the 143 newly selected units, up-to-date field counts and detailed listings of housing units formed the basis for selection of a listing segment and a cluster of 25 housing units from the listing segment.

In the 615 tracts and ED's that continued in the sample, the first step was to perform a new construction update procedure based on a canvass, primarily by telephone, of local sources of information (such as building-permit-issuing agencies, zoning boards, and tax offices). The objective was to determine whether significant new construction--defined as groups of 25 or more housing units--had occurred within the tracts or ED's since 1982. In the canvass, significant new construction was found in census tracts and ED's in approximately 205 of the 615 units. New field counts were made and new segments were selected based on the new measures of size.

In census tracts and ED's in which significant new construction (clusters of 25 or more new housing units) was not found, procedures diverged in Rotation Groups E and F. In Rotation Group F, 1984 RECS housing unit listings were checked and updated (for such things as missed units, new construction) before the start of field contacts for interviews. This step in Rotation Group F was identical to the listing checks carried out for Rotation Groups C and D. However, housing units for the 1987 RECS sample were selected from among those *not* selected in the earlier RECS. In Rotation Group E, a new listing segment was selected for the 1987 RECS.

Supplemental Sample

A feature of the 1987 survey (continuing from previous RECS) was a supplemental sample of households designed to be merged with the main RECS sample and meet special analytical needs of the Office of Family Assistance, Family Support Administration (FSA). The supplemental sample comprised some 1,258 (17.5 percent) of the total sample of 7,183 occupied housing

units. See section "Supplemental Data Collection for the Family Support Administration" (FSA) later in this Appendix.

The plan for the supplemental sample included procedures to "oversample" households below poverty level, particularly those using electricity, fuel oil, or kerosene as the main space-heating fuel. The number of households in the population using these fuels (as the main space-heating fuel) is smaller than the number using natural gas. Consequently, the number of sample households (in the main sample) using electricity, fuel oil, or kerosene is smaller than the number using natural gas. The analytical needs of FSA require an increased sample size for households below poverty level, particularly those using electricity, fuel oil, or kerosene as the main space-heating fuel. Thus, procedures were designed to increase the sample size for households of these types to the extent feasible.

As a first step in selection of the supplemental sample, interviewers were instructed to rate the general income level of households in the listing segment based on their observations of housing units in the segment and their general knowledge of the area (after completing their listing of housing units in the segment). Interviewers placed each listing segment into one of four groups: Highest 25 percent (well-off or wealthy), upper middle, lower middle, or lowest 25 percent (poor or near-poor). Whenever possible, listing segments that were rated on income were also rated on main home-heating fuel in the sample segment.

The actual selection of supplemental units was accomplished by increasing sampling rates in listing segments that interviewers judged to include large proportions of poor or near-poor households and, in some cases, lower-middle income segments were included. Relative sampling rates were established for groups of housing units as shown in Table A3.

An additional aspect of the selection of supplemental units was a ceiling on the actual sampling rate that applied to any given sample unit. The ceiling was equal to the highest overall sampling rate used in any Census division in the 1987 RECS sample. Thus, in some cases

Table A3. Relative Sampling Rates Based on Income Rating and Main Home-Heating Fuels

Main Home-Heating Fuel	Income Rating		
	Upper-Middle or Highest	Lower-Middle	Poor or Near-Poor
Electricity or Fuel Oil/Kerosene	1.0	1.3	2.5
All Other Fuels	1.0	1.0	2.2

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

Household Survey

the relative sampling rates shown in Table A3 were adjusted downward so that the overall sampling rate for housing units did not exceed the ceiling rate for the 1987 RECS.

A relative sampling rate of 1.0 in Table A3 means that the overall sampling rate applied to households in a sample cluster is the rate established for the main sample. Relative sampling rates higher than 1.0 were used for households in the "oversampled" groups shown in Table A3. (For example, a relative sampling rate of 1.3 means that households in the group were sampled at a rate of 30 percent higher than the rate established for the main sample.) An estimated 1,258 additional households (that is, households selected as a result of the supplemental sampling process) were selected in 510 segments, and 1,108 interviews were completed in these households (including both personal and mailed questionnaires).⁴

The outcome of the oversampling procedure is summarized in Table A4. Some 30.7 percent of completed interviews in the supplemental sample were with households below the poverty level, compared with 13.0 percent of completed interviews in the main sample. The corresponding figures for 125 percent of poverty level were 43.3 percent and 20.4 percent of supplemental sample and main sample interviews, respectively.

Data Collection Procedures

The original sample consisted of 8,232 units, of which some 225 either were not used for dwelling purposes or were not habitable. Of the 8,007 habitable housing units, 824 were ineligible for this study due to a current vacancy or seasonal occupancy (the units were not the primary residence for the occupants). Personal interviews were conducted at 5,856 of the 7,183 eligible units, for a response rate of 81.5 percent. Subsequently, mail questionnaires were sent to 1,153 of the 1,327 households that had not participated in personal interviews. Completed questionnaires were returned by 370 of these households, or 32.4 percent of those mailed. Of the total eligible households, responses were received from 86.7 percent (or 6,229 households).

Approximately three-quarters of the personal interviews were completed in September and October 1987; 94 percent were completed by the end of December 1987. Interviewing continued until February 1988 in a few sample locations in which low response rates were

Table A4. Poverty Status in 1987 and Home-Heating Fuel in 1987 RECS Main and Supplemental Samples^a

Poverty Status and Home Heating Fuel	Basic Sample Households ^a		Supplemental Sample Households ^a	
	Number	Percent	Number	Percent
All Households	5,121	100.0	1,108	100.0
Below Poverty Level	665	13.0	340	30.7
Electricity	108	2.1	59	5.3
Fuel Oil/Kerosene	75	1.5	46	4.2
Other Fuels	482	9.4	235	21.2
Not Below Poverty Level ...	4,456	87.0	768	69.3
Below 125 Percent of Poverty Level	1,043	20.4	480	43.3
Electricity	159	3.1	81	7.3
Fuel Oil/Kerosene	135	2.7	70	6.3
Other Fuels	749	14.6	329	29.7
Not Below 125 Percent of Poverty Level	4,078	79.6	628	56.7

^a Households are classified according to the poverty status of the family or nonfamily householder. The actual reference period for income reported in the 1987 RECS was the 12 months preceding the RECS interview; the interview date for most households was within the final calendar quarter of 1987.

Notes: • Table shows unweighted numbers and percentages of completed units. • See "Glossary" for the definition of poverty.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

⁴The estimated numbers of basic sample interviews were derived by multiplying the number of household units in each ultimate cluster by the ratio: Sampling rate for basic sample / Sampling rate for total (basic + supplemental) sample. For example, the ratio above for a sample segment rated "lower-middle" for income level and "electricity or fuel oil/kerosene" as main home-heating fuel, in general, was equal to 1/1.3. The number of units in the supplemental sample was then equal to the total number of units in the ultimate cluster minus the estimated number in the basic sample.

experienced. Most of the 373 completed mail questionnaires were received in February and March 1988. In keeping with past practice in the RECS survey, November was regarded as the rough midpoint for data-collection activity. Thus, November 1987 was the date for determining the independent estimates of the size of the universe of households used in the ratio estimation of survey results. Detailed results of the Household Survey were published in *Housing Characteristics 1987*, DOE/EIA-0314(87), published May 1989.

The Interview

The average personal interview lasted 56 minutes, with 85 percent of the interviews lasting between 30 and 75 minutes. The interview with the householder (or spouse) covered structural features of the house related to energy, such as insulation, doors, and windows; the heating and cooling systems, with the fuels used in these systems; use of wood fuel; energy conservation improvements; household appliances; household vehicles; receipt of government assistance for the cost of heating; and demographic data on household members.

At the end of the interview, respondents were asked to sign an authorization form allowing the interviewing contractor to obtain records of energy consumption from the housing unit's energy supplier(s). At this time, the interviewer also measured the dimensions of the housing unit. (See "Estimates of Housing Unit Size" at the end of the Household Survey section, for further details on the measurement of housing units.)

The Interviewers

A total of 293 interviewers completed one or more personal interviews for this study. As shown in Table A5, 131 interviewers (45 percent) had completed interviews on a prior RECS. The remainder were conducting their first RECS, but had interviewing experience either with other survey research organizations, or with the U.S. Bureau of the Census.

Two-day regional training meetings were held in 5 locations around the country in August 1987. These meetings were attended by 248 of the interviewers (85 percent). Each session was led by a group of trainers who had attended a 2-day workshop in Princeton, New Jersey and were monitored by Department of Energy staff. The 2-day training session for interviewers covered general interviewing techniques, background of the Residential Energy Consumption Surveys, a question by question review of the household questionnaire, ways to measure the respondents' homes, the accurate recording of the Vehicle Identification Number (VIN), and administrative requirements. The 45 interviewers who were not able to attend a regional training meeting were trained either on the telephone by one of the trainers or in person by a field supervisor.

All interviewers were required to complete a practice interview and quiz on the questionnaire and sampling procedures. These materials were reviewed by the contractor's central office staff. The basic training document for both the regional meetings and other training was a 132-page manual, *Instructions for Interviewers, 1987 Residential Energy Consumption Survey*.

Interviewers were paid on an hourly basis for their work on RECS, including time for home study, attendance at training sessions, review of completed interviews, actual interviewing time, and travel time to and from training sessions and sample clusters. Interviewers were also reimbursed at standard mileage rates for use of personal vehicles and other travel expenses. Interviewers working in locations believed to present a hazard to their safety were compensated for use of an escort. Each interviewer conducted an average of 20 interviews. Nineteen interviewers each completed fewer than six interviews; the average for this group of 19 interviewers was 3.5 completed interviews. Seven interviewers completed 50 or more interviews; the average for this group of interviewers was 61.1 completed interviews. Twenty percent of the personal interviews were verified by telephone or mail to ensure that interviews were conducted as intended.

Table A5. Experience and Training of 1987 RECS Interviewers

Experience on Prior RECS	Training for This RECS ^a	Number of Interviewers
Yes	Regional training meeting	116
Yes	Other training	15
No	Regional training meeting	132
No	Other training	30

		293

^a All interviewers completed a practice interview and quiz.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

Rental-Agent Survey

The Rental-Agent Survey is an adjunct to the Household Survey to verify information from household respondents in rental units on fuels and main heating equipment used. Telephone interviews were carried out with rental agents and landlords of RECS households living in multiunit dwellings whose occupants did not directly pay to utility companies or fuel suppliers for one or more household fuels.

The interviews with rental agents or their representatives were conducted in the spring of 1988. Altogether, 303 rental agents were interviewed. These interviews covered 856 households in 401 buildings. The 856 households were 89.1 percent of the total of 961 households living in multiunit buildings who had one or more fuels included in their rent.

Comparisons were made between rental agents' and household respondents' reports on main heating fuel, main heating equipment, supplemental heating fuel, water-heating fuel, and air-conditioning fuel. Each discrepancy was individually examined. Changes were made in the household record whenever it was judged that the rental agent was more knowledgeable than the household respondent on specific fuels and/or equipment.

Editors generally followed the guideline that the rental agent was the more knowledgeable person when the landlord paid for the fuel and the fuel was used as the main home-heating, water-heating, or air-conditioning fuel, or when the rental agent's description of the main heating equipment differed from that of the household respondent. The respondent was generally considered the more knowledgeable person for the definition of supplemental heating fuel, as the supplemental heating fuel was more likely to be under the household's control, even in multiunit dwellings. The changes in the household records that resulted from these inquiries are given in Table A6.

Minimizing Nonresponse

In an effort to maximize the validity of the survey data, a multiwave, multicontact approach was employed. Before the initial contacts, a letter was sent to each household from the Director of the Office of Energy Markets and End Use, briefly describing the purposes and stressing the importance of the survey. Beginning in September 1987, interviewers made up to seven or more callbacks at different times of the day throughout the week in an effort to minimize the number of uncontacted households. The interviewers also queried neighbors regarding the most opportune times to contact the prospective respondent. By the end of the first wave, 225 addresses were found to be nonresidential and an additional 760 were found to be ineligible (Table A7). Some 5,075 personal interviews were completed, leaving 2,172 nonrespondents in this wave.

A second wave was initiated in an effort to contact households that were not available during the first wave and to attempt to convince selected first-wave refusals to reconsider. A new set of letters preceded the renewed effort and, in most cases, the sampled housing units were assigned to a different interviewer. Again, up to seven or more attempts were made to contact the prospective respondents. At the end of this wave, an additional 60 addresses were found to be ineligible. As a result of the second wave, an additional 717 interviews were completed, leaving 1,355 nonrespondents.

A third wave was initiated in an effort to reach nonrespondents in a number of locations that had low completion rates. Four addresses were found to be ineligible and an additional 64 personal interviews were completed in the third wave.

In a final attempt to reduce nonresponse, an abbreviated version of the questionnaire (adapted for self-administration) was mailed to most of the remaining

Table A6. Changes Made in Household Records on the Basis of Information from Rental Agents

Type of Changes Made in Household Records	Fuel Paid by Rental Agent	Number with Any Changes Made	Percentage with Changes Made
All Households in Rental-Agent Survey	856	358	42
Main Heating Fuel	671	82	9
Main Heating Equipment	(^a)	206	31
Supplementary Heating Fuel	(^a)	29	4
Water-Heating Fuel	811	120	15
Air-Conditioning Fuel	154	61	40

^a For the 671 households whose rental agent paid for the main heating fuel, responses of rental agents and household respondents were compared. Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

Table A7. Interviews Completed by Stage

	Personal Interviews			Status After Third Wave	Mail Questionnaire	Final Status
	First Wave	Second Wave	Third Wave			
Total Listed Units	8,232	2,172	1,395	8,232	1,327	8,232
Nonhousing Units						
Business, Other	58	0	0	58	--	58
Not Habitable	92	0	0	92	--	92
Nonhousing Unit	75	0	0	75	--	75
Subtotal	225			225		225
Housing Units	8,007	2,172	1,395	8,007	1,327	8,007
Ineligible Units						
Vacant	646	53	4	703	--	703
Seasonal Vacant	114	7	0	121	--	121
Subtotal	760	60	4	824		824
Eligible Units	7,247	2,112	1,391	7,183	1,327	7,183
Not Completed--Personal Interview						
No One Home	715	361	65	220	--	220
Eligible Respondent Not Home	78	25	6	32	--	32
Refused	1,231	614	58	^a 1,004	--	1,004
Illness	17	5	0	9	--	9
Language Barrier	28	7	0	14	--	14
Wrong Respondent or Unit	5	0	0	3	--	3
Not Contacted ^b	50	377	1,198	21	--	21
Other	48	6	0	24	--	24
Subtotal	2,172	1,395	1,327	1,327		1,327
Not Completed--Mail Questionnaire						
Unusable Address	--	--	--	--	41	41
Post Master Return	--	--	--	--	85	85
Returned Blank	--	--	--	--	18	18
Returned Unusable	--	--	--	--	1	1
Not Returned	--	--	--	--	676	676
Other Not Mailed	--	--	--	--	133	133
Subtotal					954	954
Total Interviews Completed	5,075	717	64	5,856	373	6,229

^a A household that refused an interview during any one of the three waves was classified as a "refusal" for the final status even though no one was at home in the second or third wave.

^b Includes households that moved after initial contact.

-- Data not applicable.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

nonrespondents. As a result of this effort, 373 additional households responded. After three waves of personal interview attempts and the mailed questionnaire, 954 households or 13.3 percent of all eligible housing units had not responded.

These efforts were successful in accomplishing the following improvements in response:

- Approximately 82 percent of the households were contacted and agreed to be interviewed personally. An additional 5 percent of the sample households completed and returned mailed questionnaires.
- Of the 6,229 responses, 81.5 percent were obtained during the first wave of contacts; 11.5 percent

were obtained during the second wave; and 1.0 percent resulted from third-wave contacts. Some 6.0 percent were responses to the mailed questionnaire.

- Of all households that participated in the personal interviews, 31.8 percent required only one visit in the first wave and 71.0 percent were completed with no more than two first-wave callbacks.
- A total of 366 personal interviews were completed in the second and third waves with respondents who had previously refused to participate, representing 6.3 percent of all completed personal interviews. In addition, of the 373 mailed questionnaires that were completed and returned, 286 were from households that previously refused to participate.

Response Rates and Household Characteristics

This section of the report compares various response and nonresponse rates across Census region, location type, and housing structure type. These rates are reported in Table A8.

Several patterns are clear from Table A8. First, personal interviews enjoyed the most success in the South Region (84.0 percent), in non-MSA areas (85.6 percent), and among residents of single family or mobile homes (82.3 percent). Conversely, the interviewers had their lowest success rates in the Northeast Region (79.0 percent), metropolitan areas (central city) (79.8 percent), and in buildings with five or more residential units (79.4 percent). When looking at the categories comprising these groupings it is important to remember that their characteristics are not necessarily independent. Rather, they are very likely to overlap; for example, large apartment buildings are concentrated in metropolitan areas.

The total response-rate patterns with regard to highest and lowest rates generally are not affected by adding the mailed-questionnaire responses; however, the overall range from highest to lowest decreases by one to two percentage points. The response to the mail ques-

tionnaire tended to be higher in areas where the refusal rate to the personal interview was the highest.

Overall response rates are approximately four percentage points higher for new rotation groups (households not contacted for an earlier RECS) than for returning rotation groups. Conversely, refusal rates are approximately four percentage points higher for the returning rotation groups that had been contacted in an earlier RECS or companion survey, Residential Transportation Energy Consumption Survey (RTECS). These findings replicate results for earlier RECS.

Data Editing

Completed interviews were mailed by the interviewers to the survey contractor headquarters. The first step in the review process was to verify the accuracy of the basic identifying information. Next, the questionnaires were manually reviewed by two editors to ensure completeness and the logical consistency of selected patterns of responses, and to prepare the questionnaires for translation into machine-readable form. Key punching of the data was 100 percent verified. Finally, the data were machine edited to further ensure completeness, logical consistency, and the legitimacy of coded values. The computer editing utilized a proprietary software package called EDITOR II.

Table A8. Response Rates for Region, Location, Type of Structure, and Rotation Groups
(Percentage of Eligible Housing Units)

Characteristic	Response Rates			Personal Interview Nonresponse Rates	
	Personal Interview	Mail Questionnaire	Total Response	Refuse	Unable to Contact
Total	81.5	5.2	86.7	14.0	4.5
Census Region					
Northeast	79.0	5.7	84.7	16.3	4.7
Midwest	80.7	5.9	86.6	15.1	4.2
South	84.0	4.2	88.2	11.7	4.3
West	81.8	5.1	86.9	13.3	4.9
Location Type					
MSA--Central City	79.8	5.2	85.0	14.4	5.8
MSA--Outside Central City	80.4	6.0	86.4	15.6	4.0
Non-MSA	85.6	4.1	89.7	10.9	3.5
Structure Type					
Single-Family or Mobile Home	82.3	5.4	87.7	14.5	3.2
Buildings with Two to Four Units ..	80.1	3.9	84.0	12.4	7.5
Buildings with Five or More Units ..	79.4	5.4	84.8	13.0	7.6
Sample Rotation Group					
Returning Rotation Group	79.5	5.2	84.7	16.3	4.2
New Rotation Group	83.5	5.1	88.6	11.7	4.8

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

The contractor attempted to resolve inconsistencies or ambiguities in the data internally, by reference to other parts of the questionnaire. When these efforts failed to resolve an important problem, particularly those involving heating fuels or heating equipment and/or relationships between questionnaire responses, the contractor made a followup contact with the rental agent or a telephone contact with a member of the household in question. Telephone contacts with a household member were completed with approximately 1 percent of households during the course of data editing for this survey.

Survey Estimates

All the statistics published in this report are estimates of population values, such as the total amount of energy consumed in the residential sector. These estimates are based on a randomly chosen subset of the entire population of households. The universe includes all households in the 50 States and the District of Columbia, including households on military installations. The definition of "households" is the same as that used by the U.S. Bureau of the Census. At the time of this RECS, November 1987, the universe was estimated to contain 90,537,000 households, based on the Current Population Survey (CPS) estimates of the population.

There are two major types of nonresponse--for an entire sampled household (unit nonresponse), or for a particular item of interest from a responding household (item nonresponse). The next two sections provide details on the procedures followed for each type of imputation. A third section deals with a special category of item nonresponse--the size of housing units in square feet.

Adjustments for Unit Nonresponse

Weight adjustment was the method used to reduce unit nonresponse bias in the survey statistics. Weights were calculated for each sample household. The household weight reflected the selection probability for that household and additional adjustments. These adjustments included correcting for potential biases arising from the failure to list all housing units in the sample area and to contact all sample housing units. Contacts were not successful with 13.3 percent of the eligible units.

The adjustment for these noninterviews was designed to spread the effects of nonresponse over the interviewed sample of households in the final cluster. The noninterview weight adjustment is equal to the number

of households in the ultimate cluster (interviews plus noninterviews) divided by the number of interviews. When the weight adjustment computed in this way was greater than 2.0, however, that part of the noninterview adjustment that exceeded 2.0 was spread over the remaining ultimate clusters in the PSU.

The failure to list all housing units in the field-listing task is a common problem in surveys of this type. The result is an undercount of housing units in the sample area and, hence, an underestimate of the number of households in the universe. The undercount in the 1987 RECS is in the range of 8 to 10 percent. This problem is treated in two ways in the RECS. One treatment occurs during the interviewing process. The second treatment occurs in the estimation process. During the interviewing stage, unlisted housing units or households are discovered by querying the household where interviews are conducted to determine if other households are present in the unit. In addition, the interviewer is instructed to conduct an interview at all housing units contained in the geographical area between the interviewed household and the next listed address. This tactic reduces the number of missed households but does not completely eliminate the noncoverage problem.

The noncoverage problem is also treated by using ratio estimation to adjust selected estimates of household counts to official population values. Ratio adjustment took place in two stages for the 1987 RECS. The first stage adjustment was computed from information for PSU's in NSR strata only. A separate factor was created for each of 20 cells (four regions classified by five home-heating fuel categories). The implementation of this factor reduced somewhat the amount of variance caused by the sampling of PSU's. The first-stage adjustment for Cell "c" is given by:

$$R_{1c} = N_c / M_c$$

where N_c is the total number of households (1980 Census population) in Cell c for all PSU's in RECS NSR strata (including those PSU's not selected for RECS). M_c is an estimate of N_c obtained from the 1980 Census data for the NSR PSU's that were selected for the 1987 RECS. In particular, M_c is given by the sum (over all NSR PSU's selected for RECS) of the product of the PSU sampling weight and the number of households in Cell c (1980 Census population) for the PSU.

For all observations in NSR PSU's, the household weights (adjusted for nonresponse) were multiplied by R_{1c} where c is the cell in which the observation falls.

The second-stage factor adjusted the weights (after the nonresponse adjustment and the first-stage adjustment) from the survey so that the sum of the weights in the

12 categories shown in Table A9 will equal the CPS estimates for the population in the 12 categories. The second-stage adjustment for Category k is given by:

$$R_{2k} = H_k / G_k$$

where H_k is the CPS estimate of the number of households in Category k, and G_k is the sum of the RECS households weights before the second-stage ratio adjustment (after nonresponse adjustment and the first-stage adjustment) over all households in Category k. H_k is based on a linear interpolation of values for each of the 12 cells between CPS estimates for March 1987 and March 1988.

For all observations, the households weights (adjusted for nonresponse and the first-stage adjustment) were multiplied by R_{2k} where k is the category in which the observation falls. This second-stage factor reduced both the between-PSU variance and the within-PSU variance.

The third stage in the weight adjustments was similar to the second stage. The only difference was that instead of the 12 categories used in the second stage, the following 3 categories were used:

- One-person households, male householder,
- One-person households, female householder,
- All other households.

The purpose of this third stage was to reduce possible bias in the RECS sample due to undercoverage of one-person households, particularly those comprised of a single male.

The fourth and final stage in the weight adjustments was exactly like the second stage. The final household weights will (for each of the categories in Table A9) sum to the control totals shown in that table.

Adjustments for Item Nonresponse

Item nonresponse occurs when respondents do not know the answer or refuse to answer a question, or when an interviewer does not ask a question or does not record an answer. Imputations were made for nonresponse on about two-thirds of the items for which some nonresponse occurs, including most items to be used for making national estimates. Items for which national estimates are made, but for which imputations were not made, include questions on the presence, type, and amount of attic and floor insulation; thermostat settings; and the presence of wall insulation. For these items, no variables existed where correlations with the missing item were strong enough upon which to base an imputation procedure.

Hot-deck imputation was the method used most frequently. This procedure requires sorting the file of households by variables related to the missing item. A household is then selected that has the same value for the related variables, and this "donor" household supplies the value for the variable that is missing in the "donee" household.

Less frequently used imputation methods included regression estimates, random selection from the known values of a variable, and deductive and allocation procedures. Regression procedures were used to impute the total square footage of the housing unit when actual measurements were missing. Discussion of the regression procedure and other imputations involved in the square footage estimates is found in the following section "Estimates of Housing Unit Size."

The random selection procedure was used primarily to assign dates (month and/or year) when those responses were missing, and to impute for missing numbers that were conditional on other numbers (e.g., number of storm windows, conditional on total number of windows).

Deductive procedures were used primarily for missing information on fuels used for specific purposes and methods of payment for fuel uses. The amount of missing data on these items was generally quite small; other

Table A9. Population Estimates Used as Controls in Ratio Estimates

Census Region	Thousand Households			
	MSA-- Central City	MSA--Outside Central City	Non-MSA	Total
Northeast	6,653	10,173	2,223	19,049
Midwest	6,700	9,112	6,447	22,259
South	9,426	12,710	8,769	30,905
West	6,868	8,607	2,849	18,324
Total United States	29,647	40,602	20,288	90,537

Note: See "Glossary" for definition of MSA and Non-MSA.

Source: Estimates derived from the March 1987 and March 1988 Current Population Surveys, U.S. Bureau of the Census.

available information in the questionnaire, or from related data sources (utility bills and rental agent survey), provided reasonably conclusive assignments for the missing data.

Allocation procedures involved the use of explicit rules to assign values in place of missing information on relationship to householder, and age and sex of persons in household, based on the configuration of known information on these variables for other household members.

The numbers of questionnaire items for which various types of imputation procedures were used are shown below.

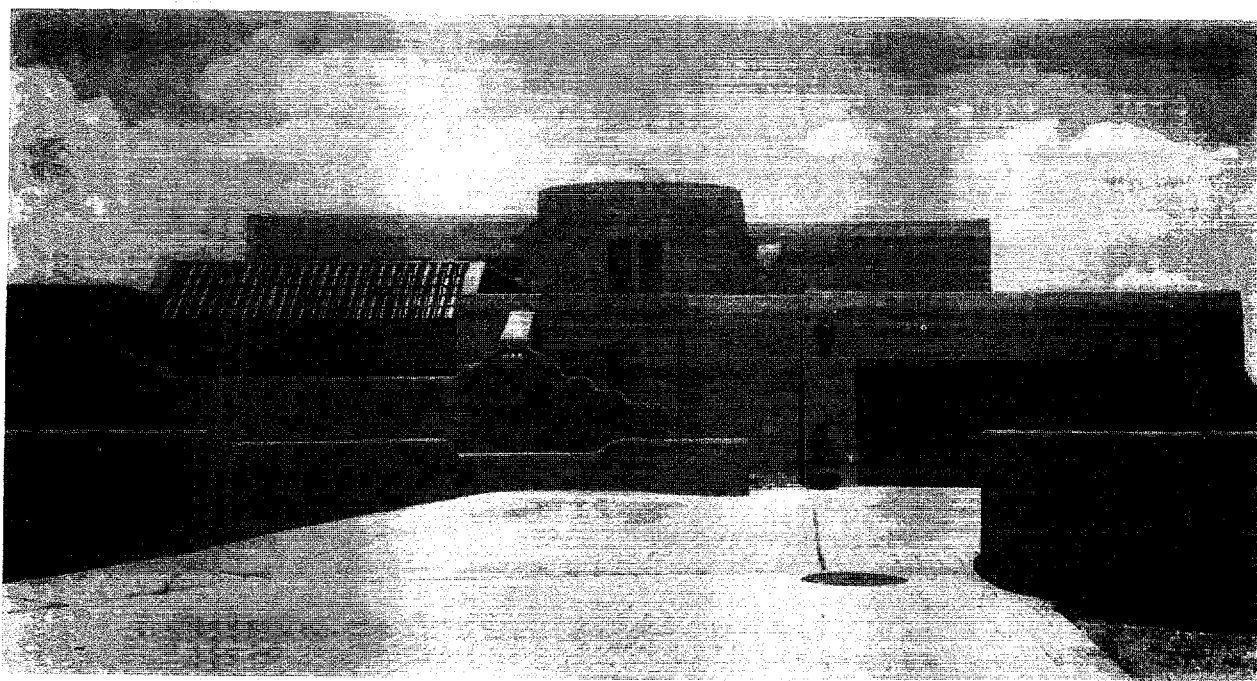
Imputation Method	Number of Questionnaire Items
Not Imputed	150
Imputed	272
Hot-deck	116
Random	62
Deductive	59
Allocation	35
Total*	422

*Excludes 45 items for which missing values, if any, are determined by explicit editing rules in the initial stages of questionnaire editing.

Table A10 shows the most frequently imputed items, the number of cases requiring imputation, and the method used.

The amount of item imputations for the 373 mailed questionnaires was considerable since the mailed questionnaire contained only a small subset of questions from the household interview. For the mailed questionnaire, a modified hot-deck imputation method was used. A hot-deck matrix was created for both mailed questionnaire and personal-interview households using Census region, type of housing unit structure, space-heating fuel, hot-water fuel, and presence and type of air conditioning. Whenever possible, a donor personal-interview household was chosen for each mailed-questionnaire household from the same cell of the hot-deck matrix. For 95 percent of the mailed questionnaires, donors matched on all hot-deck variables.

Because each cell of the matrix usually contained several possible donors, a donor was chosen from the cell on the basis of how closely it matched the mailed-questionnaire household on a number of additional variables. These variables were: income, number of household members, number of household vehicles, age of householder, tenure, number of rooms, model year of newest vehicle, and household structure (married couple, other). Except for information on household vehicles, which was taken directly from the mailed questionnaire, the entire set of responses from the donor household was imputed to the mailed-questionnaire household. This means that all responses for mailed-questionnaire households are imputed except for weather data, fuel-consumption data acquired from the household's fuel suppliers, the geographic location of the mailed-questionnaire household, information on household vehicles, and those items in the hot-deck imputation process for which an exact match was obtained.



Data collected on households located in the Mountain Census Division is an example of the data collected in the Residential Energy Consumption Survey.

Table A10. Items Most Frequently Imputed

Imputed Item	Cases Imputed	Percentage of Total Sample ^a (5,856)	Method of Imputing	Question Number on Questionnaire
1987 Family Income	665	11	Hot-deck	109
Main Fuel Same as in November 1984	472	8	Hot-deck	9
Year House Was Built	454	8	Hot-deck	3
Availability of Natural Gas	354	7	Hot-deck	122
Roof or Ceiling Insulation Added Since September 1985	211	4	Hot-deck	60
Insulation Added Between House and Basement or Crawl Space Since September 1985	166	3	Hot-deck	66a
Lower Rent Due to Government Aid	162	3	Hot-deck	119
Storm Doors for Non-sliding Doors Added Since September 1985	135	2	Random	48b
Storm Windows Added Since September 1985	126	2	Random	52
Warm Air Forced Through Ducts	107	2	Hot-deck	14
Heating System Broken Last Winter	104	2	Hot-deck	25a
Basement or Crawl Space Heated	95	2	Hot-deck	170
Square Feet of Housing Unit	71	1	(^b)	--
No Heat from Landlord Last Winter	65	1	Hot-deck	24a
Ran Out of Bulk Fuel Last Winter	64	1	Hot-deck	23a
Marital Status of Householder	64	1	Hot-deck	103
Utility Shut Off Fuel Last Winter	62	1	Hot-deck	22a
Month Caulking Was Added	60	1	Random	67e
Age of Householder	60	1	Allocation	96
Government Assistance in Paying Cooling Costs	57	1	Hot-deck	111b
Government Assistance for Other Energy Costs	57	1	Hot-deck	111c
Condominium or Cooperative	57	1	Hot-deck	116
Government Provided Other Energy Device	55	1	Hot-deck	110h
Government Assistance in Paying Heating Costs	55	1	Hot-deck	111a
Hot Water Equipment Heat Water for Other Units	52	1	Hot-deck	37
Age of Second Household Member	52	1	Allocation	96
Government Provided Furnace Tuneup	52	1	Hot-deck	110g
Month Storm Windows Were Added	51	1	Random	53
Caulking Added Since September 1985	51	1	Hot-deck	66e
Month Weather Stripping Was Added	51	1	Random	67f
Government Provided Furnace Repairs	51	1	Hot-deck	110f
Employment Status of Third Household Member	50	1	Hot-deck	96
Government Repaired Broken Windows or Doors	50	1	Hot-deck	110c

^a Mailed questionnaires are not included in the percentage. To account for these, add five percentage points to the percentage points given.

^b See section "Estimates of Housing Unit Size."

-- Data not available.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

Estimates of Housing Unit Size

Interviewers for the 1987 RECS were given a retractable 50-foot metal tape measure to ascertain the dimensions of housing units. The instructions were to measure the "area enclosed from the weather." This included garages attached to the house, attics either heated or finished, and basements enclosed from the weather (see "Square Feet" in "Glossary" for further definition). Interviewers indicated on a rough-drawn diagram of the floor plan which areas were heated and unheated and recorded the dimensions of the heated areas and the unheated areas. This finer breakdown into heated and unheated areas more closely measures the floorspace of the housing unit that places the demand on the heating system and, therefore, is the figure that may prove to be more useful in analyzing residential energy consumption. All measurements were rounded to the nearest foot by the interviewer or in the editing process. Interviewers were given an option of measuring the home from the inside, taking into account the thickness of inside walls, or from the outside.

Interviewers were instructed to measure all housing units including units in the returning Rotation Groups C and D, even if there exists complete measurements taken in the 1984 RECS. (See Longitudinal Sample section earlier in this Appendix for a discussion of Rotation Groups.) The subsample of households in Rotation Groups C and D with complete measurements in 1984 and 1987 will serve as the basis for further methodological analyses of differences between 1984 RECS and 1987 RECS measurements. (See Appendix 12, "Quality of the Data" for a brief comparison of the two measurements.)

Interviewers attempted to measure the size of all 5,816 housing units where personal interviews were conducted. In 5,785 cases, usable measurements were acquired or were available from data collected during the 1984 RECS. In 71 cases, the measurements either were not usable or were not made. Although most cases contained the basic information, some imputa-

tions were required to produce a final set of three square footage amounts for each housing unit:

HOMEAREA = total square footage of floorspace enclosed from the weather

HEATED = total square footage of heated floorspace

UNHEATED = **HOMEAREA** - **HEATED** = total square footage of unheated floorspace

Table A11 indicates the number of cases with missing data. The imputations required standardizing all measurements to outside measurements when the measurement was made from inside the home, characterizing a measurement as inside or outside when this was unknown, apportioning the total space between heated and unheated when this proportion was unknown or partially known, and estimating the total square footage when the measurements were not made or not usable.

The following 3 sections describe the procedures followed for each of the three major categories of data. The final section provides a comparison of the measurements from the 1984 and 1987 RECS.

Treatment of Housing Units with Complete Measurements

As shown in Table A11, 4,272 homes had complete dimensions for all enclosed areas and information on which areas are heated and which areas are unheated.

The only adjustment required for these cases was to scale up the measurements for the 1,794 homes that were measured on the inside. The inside measurements were standardized to outside dimensions. The scaling factor was determined for each housing unit as a function of the floorspace of the first floor, the total floorspace of the home, and the housing unit type. The formula for the scale factor (**SCALE**) is given below:

$$\begin{aligned} \text{SCALE} &= 1.0955 \\ &- .00004359 \times \text{FSFF} \\ &+ .000021795 \times \text{TFS} \\ &- .07875 \times \text{IMH} \\ &+ .02745 \times \text{ISAH}. \end{aligned}$$

Where:

FSFF is the floorspace of the first floor,

TFS is total floorspace of the home,

IMH is the indicator variable for the mobile home and,

ISAH is the indicator variable for the single family attached home.

The above equation indicated that the scale factor varies by the floorspace of the first floor, the total floorspace, and the type of dwelling. In particular, the scale factor is reduced when the dwelling is a mobile

Table A11. Completeness of Data on Square Footage of Housing Units

Amount of Information Collected	Number of Households	Percent
Complete Set of Dimensions	4,272	73
Outside Measurement of Home	2,478	42
Inside Measurements of Home	1,794	31
Partial Information		
Information available on heated and unheated areas.		
Unknown whether dimensions are for inside or outside of home	1,213	21
Total floorspace known but information on heated and unheated areas is missing. Also may be unknown whether dimensions are for inside or outside of home	157	3
Basement dimensions missing	62	1
Complete set of dimensions for all floors except basement. Basement total floorspace known, but information on heated and unheated areas for basement is missing	65	1
Values for heated and unheated were taken from 1984 RECS data	16	0
All dimensions missing or unusable	71	1
Total	5,856	100

Note: The floorspace for the 373 households responding by mail was imputed through a hot-deck procedure. These mail questionnaires are not included in this table.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Form EIA-457A, 1987 Residential Energy Consumption Survey.

home and is increased when the dwelling is a single-family attached home. For dwellings with only one floor, the scale factor decreases as the floorspace increases. For dwellings with more than one floor, the scale factor decreases as the floorspace of the first floor increases. The scale factor increases as the floorspace of the remaining floors increases.

These scale factors, which increased the inside measurements, ranged from 1.01 to 1.17. Ninety percent of the scale factors were between 1.067 and 1.130. If the equation resulted in a scale factor of less than 1.0, the scale factor was set equal to 1.01. There was no upper bound placed on the scale factor.

The equation was developed in the following manner: Regression prediction equations were developed independently for homes measured from the inside and homes measured from the outside. Both equations were used to generate estimates of floorspace for homes measured from the inside. The relationship between the ratio of predicted "outside" to "inside" floorspace, the actual inside floorspace for the first floor, the actual inside total floorspace for these homes, and the housing type were used in fitting the regression equation for the scale factor.

Treatment of Housing Units with Some Missing Data

The 1,213 cases lacking information as to whether the measurements were inside or outside, or a combination of inside and outside, were treated as though measurements were outside. This was because average predictions based on regression equations using homes measured outside matched average totals for this group very closely, while predictions based on regression equations using homes measured inside were seriously biased on the low side.

The 157 cases lacking information on the ratio of heated to unheated space borrowed that ratio from housing units with complete data, on a PSU-by-PSU basis. For most of these cases, information was also lacking as to whether the measurements were inside or outside, and measurements were again assumed to be outside. In 7 of these 157 cases, the measurements were known to be inside measurements and scale factors were used to increase the floorspace estimates.

For the 62 cases with missing basement dimensions, the basement floorspace was imputed by using a simple regression based on the floorspace of the first floor. The heated and unheated areas were determined or imputed and then added to known totals for the remaining floors. In 20 of these 62 cases, the measurements for the remaining floors were known to be inside measurements and scale factors were used to increase the floorspace estimates.

There were 65 cases in which the ratio of heated to unheated space for the basement was unknown. This

ratio was imputed by using an appropriate empirical distribution of heated to unheated ratios. Three such distributions were used: one for single-family homes with basements only; one for homes with a basement plus crawl space and/or slab; and one for basements of homes in buildings with two to four units. In 11 of these 65 cases, the measurements were known to be inside measurements and scale factors were used to increase the floorspace estimates.

Treatment of Housing Units with No Usable Measurements

A regression equation was used for the 71 cases with no usable data. After HOMEAREA had been imputed by using the regression equation, the ratio of heated to unheated space was imputed using the same procedure described above for housing units for which that ratio was missing.

The prediction equations for outside dimensions were used in the imputations because regression equations based on cases with inside measurements did not yield fits that were substantially better. This procedure eliminated the need to scale up these estimates to outside dimensions.

Supplemental Data Collection for the Family Support Administration

Portions of the 1987 RECS data set and analyses are based on a supplemental data collection carried out by telephone in mid-1988. The primary purpose of this followup activity was to collect additional information of interest to the Family Support Administration on government assistance to low-income households for use in program administration of the Low-Income Home Energy Assistance Program (LIHEAP).

The supplemental data collection was carried out entirely by telephone in May 1988. Telephone contacts for this purpose were combined, whenever possible, with the midyear contact for the 1988 RTECS. Information was collected on government assistance to low-income households to pay heating costs for the period from October 1, 1987 to March 31, 1988.

A household was eligible for the supplemental survey if: the income question in the 1987 RECS was not answered; the income of the family was less than \$30,000 and less than 175 percent of the federal LIHEAP eligibility guideline; the income of the family was less than 125 percent of the federal LIHEAP eligibility guideline; or if the household reported receiving LIHEAP or public assistance during the 1987 RECS

interview. Of the 3,831 households included in this group, 2,385 (62.3 percent) followup interviews were completed. Nonrespondents included households with no phones, households that could not be reached or refused to be interviewed, and households that could not be reached or refused earlier RTECS contacts.

Fuel-Supplier Survey

The overall objective of the fuel-supplier survey was to provide data on which to estimate the annual fuel consumption and expenditures of sample households. Five fuels were covered in the supplier survey--electricity, natural gas, fuel oil, kerosene, and LPG.⁵ For each of the fuels, the goal was to obtain complete consumption records from January 1, 1987 through December 31, 1988.

Toward the end of the household interview, each household reported for each use of the fuel whether or not the fuel was paid for by the household, included in rent, or paid another way. For the households that paid directly, the respondent was asked for the names, addresses, and telephone numbers of the fuel companies supplying the household; these respondents were also asked to sign a form, authorizing the contractor to collect consumption data from the suppliers.

Altogether, the fuel-supplier survey included initial contact attempts with 1,025 companies. The number of companies in the survey supplying each fuel and the

total number of households supplied are shown in Table A12.

Data Collection Procedures

Data-collection procedures for electricity and natural gas companies included at least the following steps:

- An initial letter from the Director of the Office of Energy Markets and End Use, addressed to the president or other official in the company, outlining the general nature of the request for participation. Enclosures in the letter included a printed statement, "About the Residential Energy Consumption Survey," specimen copies of reporting and authorization forms, and a postage-paid postcard with a checklist of available publications and data tapes.
- A telephone contact to determine the name of the person to whose attention the survey materials should be sent.
- The mailing of survey materials to the person named as contact person.
- A followup-telephone contact a few days later to answer questions or discuss survey procedures as necessary.
- Completed forms or copies of records returned by mail.
- A letter from the survey contractor thanking the company for its effort.

Table A12. Companies in Fuel-Supplier Survey and Number of Households Supplied

Fuel Supplier	Number of Companies ^a	Number of Households with Companies Identified
Electricity	266	5,345
Natural Gas	138	3,068
Fuel Oil or Kerosene	440	636
Kerosene	72	98
LPG	205	440

^a The total number of companies in the survey was 1,025--41 supplied both electricity and natural gas; 14 supplied fuel oil and LPG; 28 supplied fuel oil and kerosene; 3 supplied LPG and kerosene; and 5 supplied LPG, fuel oil, and kerosene.

Notes: • The fuel-oil figure excludes 24 households with suppliers unknown and 9 households whose estimates of fuel-oil quantities were based mainly on cash-and-carry purchases. • The kerosene figure excludes 7 households with suppliers unknown and 206 households whose estimates of kerosene quantities were cash-and-carry purchases. • The LPG figure excludes 9 households with suppliers unknown. • Households were asked for names of their "fuel oil or kerosene" suppliers. • For those households using both fuels and more than one supplier, it was not possible to determine which fuel was purchased from a given supplier until data were received.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

⁵Households using LPG only for outdoor cooking grills were not included in the LPG data collection; LPG used by these households is excluded from consumption and expenditures estimates. Data on usage of wood fuel were reported by the household, since it was not practical to collect these data from suppliers as is done with the major home fuels. Unless otherwise noted, consumption of wood is not included in the tables for this report.

The personal contacts established at an early point largely precluded mailings of materials to an inappropriate person and the delays that might develop from such mailings.

Procedures for fuel oil or kerosene and LPG dealers were the same as for electric and natural gas companies up through and including the mailing of survey materials to the company person named as the contact. These companies, however, most often had only one or two households for which information was to be supplied, and data collection was generally completed by telephone. A pretest of the procedure conducted earlier had indicated a somewhat greater likelihood that companies would respond by telephone than as a result of a request to complete and return the forms by mail.⁶ Companies that chose to return the forms by mail, however, were not discouraged from doing so.

After the company returned the information, additional contact with companies and households was sometimes required to identify the correct record in the company files.

Data-Collection Dates

The first set of advance letters was mailed to utility companies in late January 1988. The cutoff date for receipt of usable information was October 30, 1988.

Nonresponse Statistics

The proportion of households that did not sign authorization forms (access to records denied) was in the range of 1 to 9 percent for the five fuels. Most households that signed authorization forms did so at the time of the personal interview or at the time of completing the mailed questionnaire. To maximize the number of households with records, however, a followup request was mailed to those who did not sign a form at the time of the personal interview. About 19 percent of this group returned signed forms in response to the mail request and, therefore, were included in the fuel-supplier survey.

Table A13 shows that factors affecting nonresponse are somewhat different for fuel oil, kerosene, and LPG than they are for electricity and natural gas. The most frequent reasons for nonresponse for households using

fuel oil, kerosene, or LPG were that the company was unknown or not contacted and that the dealer could not identify the customer. A number of factors contribute to this nonresponse. First, many customers purchase fuel from a number of dealers on a cash and carry basis. Second, some customers use several different fuel suppliers and pay cash for deliveries. In both cases, few records are kept and efforts to get consumption records for households rarely are successful.

Refusal of companies to participate in the survey was not a significant factor.

Some additional factors related to the quality of fuel records are discussed in the following section on data processing and imputations.

Data Processing

The energy consumption and expenditure statistics presented in this report are based on the individual annual consumption and expenditures amounts for each household. Individual consumption and expenditure amounts are calculated for each household for each of five fuels (electricity, natural gas, fuel oil, kerosene, and LPG). None of the households that participated in the 1987 RECS used all five fuels, but the majority of the households did use two or more fuels. When possible, the annual consumption and expenditure amounts were calculated using data obtained from the fuel-supplier survey.

The fuel-supplier survey was conducted for households that paid their own fuel bills directly to the supplier and signed a waiver to authorize access to their billing records. These limitations meant that imputations of fuel consumption and expenditures were required for households whose fuel bills were included in the report and for households that did not permit access to their records.

Imputations were also required for households when the supplier survey failed to produce usable billing records and when the household did not provide usable estimates of the annual consumption and expenditures. The billing records for a given fuel and a given household were considered missing (and hence nonusable) if: (1) the supplier refused to participate, (2) the supplier did not keep records, (3) the supplier could not find the household's records, (4) the information provided by the household was insufficient to locate the supplier, or (5) the supplier was no longer in business.

⁶The test is described in *RECS: Consumption and Expenditures - April 1980 Through March 1981, Part I: National Data*, DOE/EIA-021.1 (Washington, D.C., September 1982), Appendix A, "How the Survey Was Conducted."

Table A13. Energy-Consumption Records and Missing Data for Survey Households Using Electricity, Natural Gas, Fuel Oil, Kerosene, or LPG
(Percentage of Households Using the Fuel)

Survey Households	Electricity	Natural Gas	Fuel Oil	Kerosene	LPG
Total Households Using the Fuel	100.0	100.0	100.0	100.0	100.0
(Sample Number)	(6,228)	(3,991)	(952)	(414)	(543)
Usable Records Received from Fuel Supplier ^a	82.8	73.4	55.4	11.4	63.5
Quantity Estimated by Household ^b	(^d)	(^d)	0.3	57.7	0.4
Unusable Records Received from Fuel Supplier	0.9	1.9	7.0	2.7	8.7
Household Pays Supplier Directly--No Record Available for the Household	8.8	7.9	13.0	28.0	21.9
Household Not Identified in Company Records	2.1	1.3	3.4	1.7	5.9
Company Refused to Participate	(^d)	(^d)	(^d)	(^d)	(^d)
Company Unknown or Not Contacted	(^d)	0.3	3.3	25.3	7.2
Authorization Form Not Signed	6.7	6.3	6.3	1.0	8.8
Fuel Used Included in Rent or Paid in Other Way ^c	7.5	16.8	24.3	0.2	5.5

^a Data were unusable for electricity and natural gas if the records covered less than 5 months and included seasonal use (heating or cooling) or if the records covered less than 2 months. Data were unusable for fuel oil, kerosene, and LPG if the record covered less than 1 year.

^b Households in this group are those that purchased kerosene primarily on a cash-and-carry basis. These households supplied estimated purchases of kerosene during the household interview. In addition, if a household indicated that it had the ability to use LPG, fuel oil, or kerosene--but planned no purchases during 1987--the household was assigned zero consumption.

^c These data exclude households that paid for some, but not all, uses of a fuel.

^d Represents or rounds to zero.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

Available but nonusable billing records occurred when; (1) the household recently moved into the dwelling unit; (2) the amount of the bill that could be attributed to the housing unit was unknown; or (3) the billing records did not cover the entire amount used by the household. The households were asked to provide estimates of consumption and expenditures for fuel oil, kerosene, and LPG only.

Annualization

The consumption and expenditure data that were obtained from the suppliers did not list the annual amounts. Instead, the supplier provided the billing records (when available). These records listed the amount purchased, the cost of the purchase and the date of purchase. For natural gas and electricity, the amount purchased was usually equivalent to the amount consumed. The major exception occurred when the supplier had estimated the bill for the billing period. For fuel oil, kerosene, and LPG, the fuel purchased in 1987 may be consumed in 1988 instead of 1987. Conversely, the fuel consumed in 1987 may have been purchased in 1986. The procedures that were used to calculate the annual consumption and expenditure amounts for electricity and natural gas were designed to avoid estimated bills when possible. The an-

nual consumption and expenditure amounts for fuel oil, kerosene, and LPG reflected the amounts purchased. No attempt was made to distinguish between the amount purchased and the amount consumed for fuel oil, kerosene, and LPG. See Appendix C, "Quality of the Data" for more details on the annualization of consumption and expenditures.

Usable Records

Table A13 shows the percentage of cases where usable and nonusable records were obtained by fuel. For example, out of a total of 6,229 households that participated in the 1987 RECS, 6,228 used electricity. For 82.8 percent of these cases, the electric utilities provided usable billing records. On the other hand, 414 sample households used kerosene. For 11.4 percent, the kerosene supplier provided usable kerosene billing data.

Households lacking consumption records because they do not pay fuel bills directly to fuel suppliers occur most frequently among users of natural gas and fuel oil (see Table A13). These households are 16.8 percent of users of natural gas and 24.3 percent of users of fuel oil.

Imputations

Not all the fuel records that were collected in the fuel-supplier survey could be used. For example, some records covered too few months and other records were incomplete. The extent of these nonusable records is shown in Table A13. The problem of nonusable records is small for the metered fuels (electricity and natural gas) since the partial-year records of electricity and natural gas were considered usable. For fuel oil, kerosene, and LPG, the problem of nonusable records was more serious, since 7.0 percent of fuel oil, 2.7 percent of kerosene, and 8.7 percent of LPG records were nonusable. Partial-year records for these fuels were not acceptable.⁷ See Appendix C, "Quality of the Data", for more details on imputation for supplier records.

A variety of information from household respondents as well as from suppliers was reviewed and used as a basis for declaring a fuel oil, kerosene, or LPG record complete or incomplete. Questionnaire information from respondents includes the number of suppliers and an estimate of the annual number of deliveries. Suppliers provided dates of onset and termination of service to the household.

Consumption

Households with nonusable records, as described earlier, and households with no records had their annual energy consumption imputed using nonlinear regression techniques. The equations were developed using RECS sample households that had approximately a full year of acceptable data. Separate regression equations were developed for the five fuels: electricity, natural gas, fuel oil, kerosene, and LPG. These equations are described in Appendix B, "End-Use Estimation Methodology" of the companion report *Household Energy Consumption and Expenditures 1987, Part 1: National Data*.

The strategy for imputing consumption varied across fuels for two reasons. First, fuels differ in the number of ways they can be used. Electricity, for example, is used for a large number of appliances, water heating, space heating, and space cooling. Kerosene, on the other hand, is used almost exclusively for space heating. As a result, the equation for electricity includes a larger number of terms to represent all of the possible end uses. Second, the number of sample cases also influenced the analysis strategy. For the electric and natural gas equations, there were a large number of sample cases, allowing for the inclusion of a greater number of factors. For example, the electricity equations included a variable for the price of electricity.

A final adjustment was made to all imputed fuel quantities. To maintain the variance structure of the unimputed fuel-consumption data, an error term was added to the predicted fuel consumption rather than imputing a single value for all households with equivalent values for all independent variables in the regression equation. This allowed estimates for sampling error to be calculated without separating imputed from unimputed data.

Expenditures

Fuel expenditures were imputed by applying a cost factor to the imputed consumption. The cost factor for electricity and natural gas was derived from the fuel-consumption records of households in the same neighborhood or geographic area as the household that had missing data. The cost factor for fuel oil and kerosene and LPG was based on regression fits for cost versus quantity for all fuel users.

Standard Electricity Price

A standard electricity price, defined as the potential cost to the customer of 1,000 kWh on a monthly basis, was determined for each RECS household. An average price of electricity could be calculated for each RECS household that used electricity in their home. The average price equals the annual electricity expenditures divided by the total annual electricity consumption in kWh. This average price may vary between customers for the same utility, because if the utility has a decreasing block rate structure, the average price will decrease as the amount of electricity consumed increases. The standard electricity price was used to avoid this effect of the block rate structure.

There were two major sources for data on standard electricity prices: the EIA publication *Typical Electric Bills*, January 1, 1987, DOE/EIA-0040(87) published January 1988 was used for households that were located in communities with a population of 2,500 or more and were served by a investor-owned or a municipal-owned electric utility. Data from the Department of Agriculture was used for households that were served by a Rural Electric Co-operative that had borrowed money from the Rural Electrification Administration. The few utilities that were not listed in one of these two reports and who were supplying electricity to 1987 RECS households were contacted directly to obtain a standard electricity price.

The standard electricity price was attached to each 1987 RECS household record. Each household had a

⁷The number of households with partial-year records, as a proportion of total households using the fuel, is 9.2 percent for electricity and 6.2 percent for natural gas.

different random error added to the price before it was attached to the household record. The random error was used to protect the confidentiality of the household.

Data Preparation for Report

Prior to the final data tape, a preliminary data tape was delivered to the EIA in January 1989. EIA data analysts reviewed and processed the data to prepare it for the final data tape. Crosstabulations were run to check for internal consistency and verified with data from previous RECS. Generally inconsistencies were resolved by the survey contractor. The publication *Housing Characteristics 1987* DOE/EIA-0314(87) was produced using the data from the January 1989 data tape.

A final edited data tape of household survey data and energy supplier survey data was delivered to the EIA in May 1989. When comparisons were made between the estimates of the January 1989 data tape and the May 1989 data tape, small differences were found in the number of households using a particular fuel for space heating, water heating, and cooking. None of the differences between the published numbers in the *Housing Characteristics 1987* and this report exceeded 0.1 million households.

The May 1989 data were tabulated using two different software programs, Table Producing Language (TPL) and Statistical Analysis System (SAS). The tabulations

were compared as a quality control measure. This report is based on the May 1989 data.

Confidentiality of Information

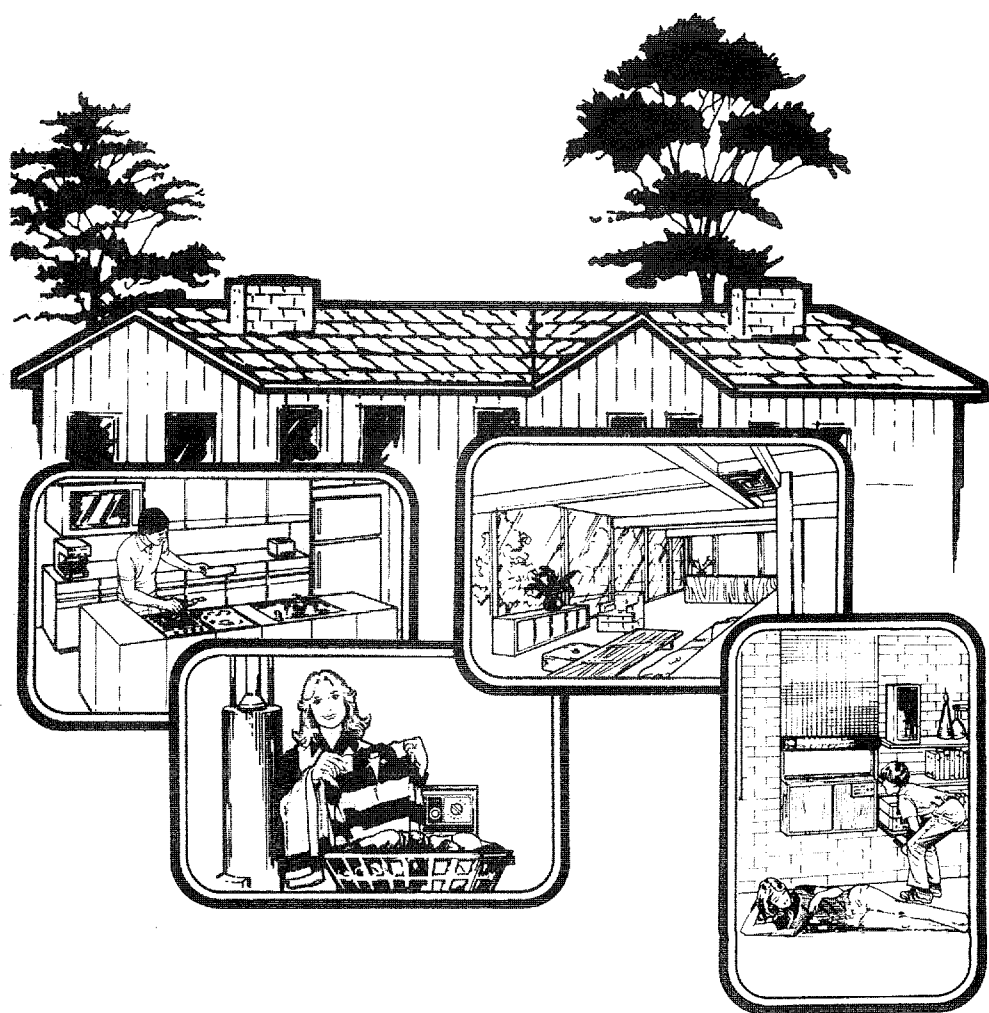
The EIA does not receive or take possession of the names or addresses of individual respondents or any other individually identifiable energy data that could be linked with information describing the household. All identifiable information is maintained by the survey contractor. Additionally, all household records that are placed on the public use tape are masked for further confidentiality protection.

Public Use Tape Preparation

Following the publication of the statistical reports for the RECS and the statistical report for the RTECS, further work is performed on the basic survey data at the microlevel to prepare the final data tape for release to the public. This tape contains both the housing characteristics and energy supplier data for the RECS and the household vehicle data for the RTECS. Measures were taken to mask the data to insure that the identity of the individual respondents is kept confidential. At the culmination of these procedures, a final data tape is released to the public through the National Technical Information Service (NTIS). (See Appendix F for information on how to order these tapes.)

Appendix B

Trends in Household Energy Use (Data)



Appendix B

Trends in Household Energy Use (Data)

This appendix contains the data used to produce the graphs in the Trends in Energy Consumption and Expenditures section of this report. The data are presented to aid readers who may want to quote figures for the trends displayed in the graphs. Additional data, not displayed in the graphs, are included in this appendix; these data are important in assessing factors related to the trends. These additional data are the number of households using a fuel presented as a total count (Table B11) and as a percentage of all households (Table B12) and the price of fuels (Table B13).

The reader is cautioned against comparing the weather data in Table B1 with weather data from published reports of the 1978, 1979, 1980, 1981, 1982, and 1984 RECS. A change has been made in the way degree-day data has been assigned to individual sample households leading, in general, to lower heating degree-days and higher cooling degree-days. See Appendix C for further discussion of the effect on trends in weather data from this change in methodology.

To provide the reader with an indication of the amount of sampling error for the statistics in this appendix, Tables B3 through B13 contain an asterisk to indicate those 1987 estimates that are significantly different from the 1984 estimates. The 99 percent level of confidence was used for these tests which is a higher level than the 95 percent level normally used. The higher level was selected to reduce the number of chance differences that will occur when making multiple comparisons. Selecting a 99 percent level of confidence does not entirely solve the problem of multiple comparisons; if there are no changes then 1 percent of the differences will still be significant by chance. But the 99 percent level of confidence reduces the number of chance differences.



Households in different regions of the United States were surveyed in the Residential Energy Consumption Survey.

Table B1. Weather: Percent Change from 1984 to 1987

Census Region and Division	Heating Degree-Days (HDD)			Cooling Degree-Days (CDD)		
	1984	1987	Percent Difference	1984	1987	Percent Difference
United States	4,518	4,203	-7.0	1,294	1,368	+5.8
Northeast	5,663	5,723	+1.0	775	828	+6.8
New England	6,331	6,441	+1.7	621	537	-13.5
Middle Atlantic	5,460	5,515	+1.0	822	912	+10.9
Midwest	6,448	5,755	-10.8	866	1,041	+20.3
East North Central	6,427	5,874	-8.6	777	984	+26.6
West North Central	6,499	5,460	-16.0	1,076	1,184	+10.0
South	2,924	2,810	-3.9	1,955	2,141	+9.5
South Atlantic	2,979	2,927	-1.7	1,819	2,108	+15.9
East South Central	3,512	3,291	-6.3	1,583	1,845	+16.6
West South Central	2,444	2,295	-6.1	2,431	2,393	-1.6
West	3,584	3,089	-13.8	1,254	1,024	-18.4
Mountain	5,158	4,494	-12.9	1,550	1,579	+1.9
Pacific	3,019	2,639	-12.6	1,148	846	-26.3

Note: Weather data for each RECS household represents conditions at the most appropriate nearby weather station. See Appendix C for a discussion of how this weather data is different from past RECS weather data.

Sources: • National Oceanic and Atmospheric Administration. • Energy Information Administration, Office of Energy Markets and End Use, 1984 and 1987 Residential Energy Consumption Surveys.

Table B2. Household End-Use Expenditures, 1987

Census Region and Division	Electricity					All Fuels ^a				
	(billion dollars)	Space Heating	Water Heating	Air Conditioning	Appliances	(billion dollars)	Space Heating	Water Heating	Air Conditioning	Appliances
		(percent of total)					(percent of total)			
United States	61.6	9.0	10.5	15.9	64.7	97.7	32.4	14.2	10.1	43.8
Northeast	12.3	9.1	8.3	9.2	73.4	24.3	40.8	14.0	4.7	40.5
New England	2.6	9.0	10.9	5.0	75.1	5.2	42.4	15.9	2.5	39.0
Middle Atlantic	9.8	9.1	7.6	10.3	73.0	19.1	40.4	13.5	5.3	40.9
Midwest	14.1	6.1	8.7	14.7	70.5	25.0	38.0	12.1	8.3	41.7
East North Central	10.0	6.5	9.3	12.6	71.6	18.2	39.5	12.4	6.9	41.2
West North Central	4.1	5.2	7.3	19.9	67.7	6.8	33.8	11.3	12.0	42.9
South	25.1	10.4	13.3	22.7	53.5	33.4	25.6	15.0	17.2	42.2
South Atlantic	13.1	10.7	16.2	20.5	52.6	17.6	27.4	16.3	15.3	41.0
East South Central	4.7	15.0	15.7	19.9	49.5	6.0	29.4	15.7	15.3	39.6
West South Central	7.4	6.9	6.9	28.5	57.7	9.8	20.0	12.2	21.8	46.0
West	10.0	9.3	8.4	8.5	73.8	15.0	24.8	16.5	5.8	53.0
Mountain	2.6	6.7	6.8	11.7	74.8	4.2	30.3	12.9	7.7	49.1
Pacific	7.4	10.2	9.0	7.3	73.4	10.8	22.6	17.8	5.1	54.3

^a Includes electricity, natural gas, fuel oil and kerosene, and LPG.

Notes: • End-use estimates are statistical estimates. See Appendix B in **Household Energy Consumption and Expenditures 1987, Part 1: National Data** for the methodology of end-use estimates and Tables 23 and 25 for the data. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987 Residential Energy Consumption Survey.

Table B3. Total Household Energy Consumption of Major Fuels for 1987, 1984, 1981, and 1978
(Quadrillion Btu)

Census Region and Division	Natural Gas	Fuel Oil/ Kerosene	Electricity	LPG
1987				
United States	4.832	1.224	* 2.757	0.315
Northeast	1.033	.874	.444	.018
New England .....	.147	.263	.098	.009
Middle Atlantic .....	.886	.611	.346	.009
Midwest	* 1.827	.159	* .610	.131
East North Central	1.349	.135	* .419	.084
West North Central .....	.478	.024	.191	.047
South	1.095	.172	* 1.219	.120
South Atlantic .....	.451	.146	* .607	.058
East South Central .....	.189	Q	.266	.032
West South Central .....	.454	Q	.347	.030
West .....	.876	* .018	.483	.047
Mountain .....	.313	Q	.124	Q
Pacific .....	.563	.014	.360	Q
1984				
United States	4.984	1.256	2.483	0.315
Northeast .....	.930	.926	.409	.027
New England .....	.162	.272	.097	.013
Middle Atlantic .....	.767	.654	.312	.014
Midwest	1.989	.128	.545	.135
East North Central	1.434	.097	.365	.076
West North Central .....	.555	.031	.180	.059
South	1.152	.163	1.064	.118
South Atlantic .....	.472	.151	.499	.057
East South Central .....	.193	Q	.254	.019
West South Central .....	.487	Q	.311	.041
West .....	.913	.039	.466	.035
Mountain .....	.319	Q	.121	Q
Pacific .....	.593	.027	.345	Q
1981				
United States	5.390	1.330	2.480	0.313
Northeast	1.056	.965	.419	.028
New England .....	.172	.266	.094	.008
Middle Atlantic .....	.885	.699	.325	.021
Midwest	2.242	.175	.573	.126
East North Central	1.673	.125	.370	.063
West North Central .....	.568	.049	.202	.063
South	1.158	.157	1.028	.120
South Atlantic .....	.451	.143	.493	.067
East South Central .....	.239	Q	.251	.023
West South Central .....	.468	Q	.284	.030
West .....	.935	.034	.461	.038
Mountain .....	.283	Q	.113	Q
Pacific .....	.651	.029	.348	Q
1978				
United States	5.575	2.192	2.469	0.327
Northeast	1.144	1.324	.391	.029
Midwest	2.525	.463	.596	.118
South .....	.959	.319	1.004	.151
West .....	.947	.086	.478	.029

Q Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

* Statistically significant difference from the 1984 value at the 1 percent level of significance.

Notes: • Data for Census divisions are not available for 1978. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Table B4. Consumption per Household Using the Fuel for 1987, 1984, 1981, and 1978
(Million Btu)

Census Region and Division	Natural Gas	Fuel Oil/ Kerosene	Electricity	LPG
1987				
United States	* 84.3	70.3	* 30.5	41.1
Northeast	88.5	96.0	23.3	16.5
New England	86.8	102.1	22.9	18.9
Middle Atlantic	88.8	93.6	23.4	14.7
Midwest	* 106.8	51.8	* 27.4	57.6
East North Central	* 110.5	54.2	26.4	55.5
West North Central	* 97.5	41.6	29.8	* 61.6
South	* 72.3	37.0	* 39.5	35.8
South Atlantic	77.0	41.1	* 38.9	30.5
East South Central	76.1	25.8	43.7	41.3
West South Central	66.9	Q	37.5	44.0
West	* 65.5	* 31.1	26.4	48.5
Mountain	90.2	Q	27.8	78.7
Pacific	56.8	* 32.9	26.0	38.1
1984				
United States	89.9	71.9	28.8	40.1
Northeast	79.2	97.3	22.3	20.1
New England	80.3	108.8	22.6	27.6
Middle Atlantic	78.9	93.2	22.2	15.9
Midwest	118.0	49.1	25.2	69.7
East North Central	121.0	49.0	24.0	67.7
West North Central	110.9	49.5	28.0	72.4
South	80.3	35.0	36.3	32.1
South Atlantic	84.8	38.7	33.8	24.7
East South Central	79.6	19.9	43.9	35.7
West South Central	76.7	Q	35.4	50.8
West	73.2	56.3	27.4	39.4
Mountain	95.2	Q	27.0	48.9
Pacific	65.0	61.7	27.5	35.2
1981				
United States	100.9	91.2	29.8	42.6
Northeast	93.1	108.0	23.4	23.9
New England	86.5	108.4	22.1	16.5
Middle Atlantic	94.5	107.8	23.8	28.8
Midwest	139.3	75.0	27.0	60.9
East North Central	146.3	71.6	25.3	54.3
West North Central	122.2	85.1	30.6	69.6
South	81.5	56.6	37.1	35.6
South Atlantic	84.0	57.5	34.9	31.5
East South Central	93.3	49.9	44.8	39.0
West South Central	74.6	Q	35.7	45.5
West	79.4	62.5	28.3	53.8
Mountain	93.8	Q	28.7	70.8
Pacific	74.4	62.4	28.2	46.4
1978				
United States	113.8	127.3	32.2	47.2
Northeast	97.7	149.2	22.5	22.1
Midwest	155.8	146.1	28.9	79.6
South	87.3	73.8	40.8	40.9
West	93.9	101.3	34.2	66.5

Q Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

* Statistically significant difference from the 1984 value at the 1 percent level of significance.

Note: Data for Census divisions are not available for 1978.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Table B5. Total Household Energy Expenditures for Major Fuels for 1987, 1984, 1981, and 1978
(Billion Dollars)

Census Region and Division	Natural Gas	Fuel Oil/ Kerosene	Electricity	LPG
1987				
United States	* 26.15	* 7.21	* 61.58	2.81
Northeast	6.67	* 5.06	12.34	.24
New England .....	.99	* 1.56	2.56	.11
Middle Atlantic	5.67	* 3.51	9.77	.13
Midwest	* 9.00	.95	* 14.08	.99
East North Central	* 6.76	.81	* 9.96	.68
West North Central	* 2.24	.14	4.12	.31
South	6.05	1.08	* 25.13	1.14
South Atlantic	2.93	.91	* 13.08	.64
East South Central .....	.93	Q	4.65	.29
West South Central	2.19	Q	7.39	.21
West	4.43	* .11	* 10.03	.43
Mountain	1.42	Q	2.63	Q
Pacific	3.01	* .09	* 7.41	Q
1984				
United States	29.78	9.60	54.48	3.12
Northeast	6.90	6.99	12.16	.36
New England	1.27	2.14	2.71	.16
Middle Atlantic	5.64	4.84	9.45	.20
Midwest	11.12	.98	11.80	1.17
East North Central	8.25	.75	8.10	.69
West North Central	2.87	.24	3.69	.48
South	6.69	1.32	21.69	1.22
South Atlantic	3.16	1.23	10.82	.67
East South Central .....	.99	Q	4.11	.19
West South Central	2.54	Q	6.77	.37
West	5.06	.31	8.83	.37
Mountain	1.62	Q	2.42	Q
Pacific	3.44	.21	6.41	Q
1981				
United States	24.50	11.82	45.90	2.74
Northeast	6.11	8.60	10.56	.30
New England	1.21	2.39	2.33	.09
Middle Atlantic	4.89	6.21	8.23	.21
Midwest	9.33	1.52	10.27	1.01
East North Central	7.08	1.09	6.88	.55
West North Central	2.25	.43	3.38	.46
South	5.31	1.40	17.71	1.11
South Atlantic	2.36	1.28	8.93	.67
East South Central .....	.98	Q	3.67	.19
West South Central	1.96	Q	5.10	.25
West	3.75	.30	7.36	.33
Mountain	1.13	Q	1.82	Q
Pacific	2.62	.25	5.54	Q
1978				
United States	15.30	8.62	29.89	1.66
Northeast	3.91	5.27	5.99	.23
Midwest	6.48	1.77	8.13	.54
South	2.73	1.26	11.81	.78
West	2.17	.32	3.96	.12

Q Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

* Statistically significant difference from the 1984 value at the 1 percent level of significance.

Notes: • Data for Census divisions are not available for 1978. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Table B6. Expenditures per Household Using the Fuel for 1987, 1984, 1981, and 1978
(Dollars)

Census Region and Division	Natural Gas	Fuel Oil/ Kerosene	Electricity	LPG
1987				
United States	* 456	* 414	* 680	366
Northeast	571	* 556	648	218
New England	586	* 604	600	* 226
Middle Atlantic	568	* 537	661	212
Midwest	* 526	309	* 633	* 436
East North Central	* 553	326	* 628	454
West North Central	* 457	239	* 644	* 402
South	* 400	233	* 813	342
South Atlantic	501	256	* 840	341
East South Central	* 374	168	765	378
West South Central	* 322	Q	800	306
West	* 331	* 190	548	451
Mountain	* 410	Q	591	504
Pacific	* 303	* 207	534	433
1984				
United States	537	550	632	398
Northeast	588	734	665	264
New England	626	856	635	330
Middle Atlantic	580	690	674	226
Midwest	660	376	546	604
East North Central	696	376	533	615
West North Central	574	377	575	589
South	466	285	740	334
South Atlantic	567	315	732	287
East South Central	409	166	710	348
West South Central	400	Q	773	457
West	406	443	518	417
Mountain	483	Q	539	453
Pacific	377	487	511	400
1981				
United States	459	811	552	373
Northeast	538	963	589	252
New England	610	974	548	187
Middle Atlantic	523	958	602	294
Midwest	580	653	484	487
East North Central	619	625	471	472
West North Central	484	736	511	506
South	374	505	640	327
South Atlantic	441	515	633	313
East South Central	385	434	654	327
West South Central	313	Q	641	373
West	318	548	453	458
Mountain	375	Q	464	561
Pacific	299	548	449	412
1978				
United States	312	501	390	241
Northeast	334	594	345	175
Midwest	400	559	394	362
South	249	291	480	211
West	215	382	283	278

Q Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

* Statistically significant difference from the 1984 value at the 1 percent level of significance.

Note: Data for Census divisions are not available for 1978.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Table B7. Households Using Electricity for Selected End Uses for 1987, 1984, 1981, and 1978 (Percent)

Census Region and Division	Space Heating	Water Heating	Clothes Dryer	Cooking	Central Air Conditioning	Frost-Free Refrigerator
1987						
United States	* 19.8	35.3	* 50.7	58.1	* 33.2	* 67.9
Northeast	11.0	23.7	42.4	48.2	* 15.3	58.4
New England	9.8	29.0	46.3	62.9	5.8	62.9
Middle Atlantic	11.4	22.2	41.3	44.0	* 18.1	57.1
Midwest	6.5	26.1	* 51.2	54.4	31.9	* 66.3
East North Central	6.7	26.5	* 48.9	51.4	26.5	64.5
West North Central	6.3	25.1	56.7	61.7	45.2	70.6
South	34.1	54.1	* 57.9	66.8	51.8	* 74.7
South Atlantic	37.2	64.9	* 59.5	71.0	51.5	* 75.8
East South Central	* 36.3	66.6	60.5	74.7	* 48.8	72.0
West South Central	27.6	27.6	53.6	54.6	54.1	74.4
West	20.8	27.0	46.8	58.1	22.1	68.5
Mountain	16.4	23.3	59.0	63.7	22.4	66.3
Pacific	22.2	28.2	42.9	56.3	22.0	69.2
1984						
United States	16.8	33.5	45.8	54.8	29.1	63.0
Northeast	7.5	21.9	41.5	42.8	10.8	52.6
New England	8.0	24.7	49.9	57.7	5.2	62.5
Middle Atlantic	7.3	21.0	38.9	38.2	12.6	49.6
Midwest	6.2	23.1	44.2	53.0	27.0	59.7
East North Central	7.0	24.6	40.2	49.5	21.1	57.9
West North Central	4.4	19.5	53.9	61.3	40.8	64.0
South	28.7	52.5	50.3	62.6	46.2	68.0
South Atlantic	32.0	62.3	49.1	66.7	44.4	67.5
East South Central	31.9	69.0	59.4	74.8	42.9	67.9
West South Central	21.1	25.2	46.3	47.7	51.2	69.0
West	19.9	26.3	44.9	56.8	21.9	69.6
Mountain	17.3	23.6	54.3	67.4	31.0	61.4
Pacific	20.8	27.3	41.6	53.0	18.7	72.5
1981						
United States	17.1	32.6	45.1	54.7	25.2	63.2
Northeast	8.6	20.3	34.0	44.0	8.8	56.7
New England	9.3	21.6	44.7	56.2	2.6	53.2
Middle Atlantic	8.3	19.8	30.6	40.1	10.8	57.7
Midwest	7.5	24.5	48.3	51.8	23.8	63.7
East North Central	5.7	24.2	44.2	48.5	19.4	64.6
West North Central	11.5	25.3	57.3	59.0	33.5	61.6
South	27.8	50.2	50.1	61.0	41.3	65.8
South Atlantic	31.5	62.3	48.4	68.5	40.5	64.2
East South Central	32.1	62.4	58.1	73.8	39.8	69.8
West South Central	18.3	20.3	47.3	38.7	43.7	66.0
West	20.8	26.6	45.0	59.6	17.7	65.2
Mountain	16.2	23.3	54.4	65.3	20.0	59.7
Pacific	22.3	27.7	42.0	57.7	16.9	67.0
1978						
United States	15.8	32.7	45.1	52.2	21.3	53.5
Northeast	8.3	20.4	35.8	35.7	8.0	49.9
Midwest	5.3	20.3	44.2	46.7	22.5	57.5
South	27.3	51.6	51.4	62.9	35.6	54.2
West	20.2	33.0	46.7	62.1	10.6	50.9

^a Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

* Statistically significant difference from the 1984 value at the 1 percent level of significance.

Notes: • Data for Census divisions are not available for 1978. • Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Table B8. Households Using Natural Gas for Selected End Uses for 1987, 1984, 1981, and 1978 (Percent)

Census Region and Division	Space Heating	Water Heating	Clothes Dryer	Cooking
1987				
United States	87.2	85.9	22.5	56.9
Northeast	* 69.4	77.2	26.9	76.4
New England	69.9	82.9	24.0	69.6
Middle Atlantic	69.3	76.2	27.4	77.5
Midwest	96.7	89.1	25.4	51.7
East North Central	96.5	89.6	25.4	55.8
West North Central	97.0	* 87.8	25.3	41.5
South	89.5	83.1	* 13.7	51.6
South Atlantic	90.1	77.9	* 13.3	51.7
East South Central	96.1	73.3	Q	46.3
West South Central	86.6	91.3	* 15.5	53.5
West	88.2	92.7	25.1	52.4
Mountain	94.0	91.5	13.6	41.8
Pacific	86.2	93.1	29.1	56.1
1984				
United States	86.3	84.6	22.7	60.1
Northeast	61.1	72.0	24.8	79.0
New England	57.8	77.2	22.8	70.4
Middle Atlantic	61.8	71.0	25.3	80.8
Midwest	97.3	90.3	25.1	53.3
East North Central	97.2	89.3	26.8	58.4
West North Central	97.4	92.6	21.0	41.0
South	91.5	81.4	19.1	57.9
South Atlantic	84.2	74.8	21.1	57.1
East South Central	97.9	65.9	Q	49.7
West South Central	95.4	93.3	22.2	61.6
West	89.4	92.4	21.8	54.3
Mountain	92.6	93.0	11.5	38.9
Pacific	88.2	92.2	25.6	60.0
1981				
United States	86.5	85.3	23.5	60.3
Northeast	62.0	70.9	28.3	79.3
New England	59.6	80.2	22.1	72.6
Middle Atlantic	62.5	68.9	29.6	80.8
Midwest	96.0	89.8	26.9	54.9
East North Central	98.3	90.5	30.7	58.6
West North Central	90.4	88.2	17.6	46.0
South	91.4	83.6	15.5	57.8
South Atlantic	88.7	76.8	12.8	52.0
East South Central	97.0	74.3	Q	43.0
West South Central	91.4	93.3	18.6	68.7
West	91.4	95.1	23.9	52.3
Mountain	93.6	94.1	11.6	40.5
Pacific	90.6	95.5	28.1	56.3
1978				
United States	85.4	86.0	21.3	63.7
Northeast	59.5	69.0	23.4	84.2
Midwest	94.0	94.7	31.6	61.9
South	91.2	86.6	9.4	57.1
West	94.9	91.1	15.4	49.9

Q Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

* Statistically significant difference from the 1984 value at the 1 percent level of significance.

Notes: • Data for Census divisions are not available for 1978. • Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Table B9. Households Using Fuel Oil/Kerosene for Selected End Uses for 1987, 1984, 1981, and 1978 (Percent)

Census Region and Division	Space Heating	Water Heating
1987		
United States	70.0	30.2
Northeast	88.3	56.0
New England	92.7	55.6
Middle Atlantic	86.5	56.2
Midwest	49.9	Q
East North Central	48.9	Q
West North Central	54.3	Q
South	49.3	2.6
South Atlantic	55.0	3.4
East South Central	31.7	NC
West South Central	Q	NC
West	55.2	Q
Mountain	Q	NC
Pacific	62.2	Q
1984		
United States	69.8	31.1
Northeast	86.0	53.7
New England	87.1	54.7
Middle Atlantic	85.6	53.4
Midwest	45.0	Q
East North Central	45.8	Q
West North Central	42.5	Q
South	51.3	4.3
South Atlantic	55.9	5.1
East South Central	36.5	NC
West South Central	NC	NC
West	66.2	Q
Mountain	Q	Q
Pacific	74.0	Q
1981		
United States	83.5	41.9
Northeast	88.3	64.0
New England	86.8	61.2
Middle Atlantic	88.9	65.1
Midwest	71.1	Q
East North Central	69.8	Q
West North Central	75.1	Q
South	79.0	10.3
South Atlantic	79.0	11.5
East South Central	82.0	NC
West South Central	Q	NC
West	79.6	Q
Mountain	Q	NC
Pacific	81.8	Q
1978		
United States	98.3	33.5
Northeast	99.5	58.3
Midwest	98.3	Q
South	96.9	8.9
West	93.0	NC

NC = No cases in sample.

Q Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

Notes: • Data for Census divisions are not available for 1978. • Fuel used for space heating and water heating is the main fuel; fuels are sometimes used in a secondary role.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Table B10. Households Using LPG for Selected End Uses for 1987, 1984, 1981, and 1978
(Percent)

Census Region and Division	Space Heating	Water Heating	Clothes Dryer	Cooking
1987				
United States	53.9	* 39.1	11.1	65.5
Northeast	10.4	24.1	Q	82.7
New England	Q	37.7	15.1	83.6
Middle Atlantic	Q	14.1	Q	82.1
Midwest	58.3	46.8	19.9	55.9
East North Central	56.8	41.7	22.6	57.3
West North Central	61.3	56.7	14.6	53.3
South	63.4	34.9	5.5	65.5
South Atlantic	56.6	28.3	Q	67.4
East South Central	70.4	25.1	Q	50.2
West South Central	74.3	63.7	9.8	77.3
West	60.4	53.1	13.3	68.5
Mountain	77.5	59.3	Q	61.2
Pacific	54.5	50.9	16.9	70.9
1984				
United States	49.7	49.0	14.2	67.0
Northeast	11.9	39.0	Q	82.1
New England	Q	43.5	17.8	78.6
Middle Atlantic	Q	36.4	Q	84.1
Midwest	64.7	60.8	19.8	56.9
East North Central	63.4	58.3	24.7	59.5
West North Central	66.6	64.4	13.0	53.4
South	56.3	41.0	8.9	66.6
South Atlantic	49.1	36.7	Q	68.7
East South Central	68.5	23.4	NC	43.4
West South Central	68.7	65.1	11.2	75.7
West	47.2	71.6	24.7	67.2
Mountain	67.2	78.5	Q	54.0
Pacific	38.4	68.6	33.5	73.0
1981				
United States	50.4	46.5	7.3	69.8
Northeast	8.9	34.5	Q	84.3
New England	Q	43.5	12.2	81.0
Middle Atlantic	Q	28.5	Q	86.5
Midwest	49.6	55.5	11.4	62.2
East North Central	39.5	51.8	12.1	62.5
West North Central	62.7	60.2	10.4	61.9
South	63.4	39.7	2.4	72.1
South Atlantic	57.2	33.1	Q	72.6
East South Central	55.9	29.8	NC	59.4
West South Central	89.9	69.5	4.0	81.5
West	59.2	72.6	15.1	56.6
Mountain	64.2	78.1	Q	66.1
Pacific	57.0	70.2	16.2	52.4
1978				
United States	45.2	44.9	8.2	71.3
Northeast	6.5	42.3	Q	91.0
Midwest	52.8	55.8	14.6	60.3
South	54.1	41.6	4.8	71.6
West	59.6	42.7	7.5	47.4

NC = No cases in sample.

Q Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

* Statistically significant difference from the 1984 value at the 1 percent level of significance.

Notes: • Data for Census divisions are not available for 1978. • Fuel used for space heating, water heating, and cooking is the main fuel; fuels are sometimes used in a secondary role.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Table Special 1. Trends in U.S. Residential Use of Natural Gas, 1978, 1981, 1984, 1987, 1990, 1993

Statistic/ Survey Year	Available in Neighborhood	Any Use	Main Space Heating Fuel	Main Water Heating Fuel	Main Cooking Fuel	Clothes Dryer
Million Households						
1978	NA	49.0	41.8	41.6	31.2	11 (gas)
1981	63.3	53.4	46.2	45.6	32.2	12.5
1984	64.2	55.4	47.8	46.9	33.3	12.6
1987	66.0	57.3	50.0	49.3	32.6	12.9
1990	67.7	57.7	51.7	50.0	33.7	14.5
1993						
Percent of All Households						
1978	NA	64.0	54.6	54.1	40.7	14.4 (gas)
1981	76.1	64.2	55.6	54.8	38.7	15.1
1984	74.4	64.2	55.4	54.3	38.6	14.6
1987	72.9	63.3	55.2	54.4	36.0	14.3
1990	72.0	61.4	55.0	53.2	35.8	15.4
1993						

Note: Main Cooking Fuel is not reported in 1993. See natural gas range for comparable figure.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-84 (1978) and Forms EIA-457 A, B, and C (1981, 1984, 1987, 1990, and 1993) of the Residential Energy Consumption Survey (RECS). Tables xx, xx, and xx and RECS Public Use Data Files.

Table 5.1 also presents information regarding the number of hours and average number of hours per completed interview of all personnel working on the buildings component of 1989 CBECS. This figure is comprehensive of the management, supervisory, programming, statistical, clerical, coding and editing, telephone data retrieval and telephone follow up, and data entry personnel employed in Westat's home offices, as well as the field staff. All buildings component personnel expended 64,142 person hours, which represents 10.9 hours per completed buildings component interview.

The number of completed building interviews has a direct correlation with the overall level of effort for CBECS. The number of buildings in the survey is directly related to the number of cases of energy consumption. Thus, the Total CBECS personnel line is provided. This line represents the total number of person hours expended for the buildings and suppliers components of 1989 CBECS (85,926). On average, 14.6 person hours were spent across both components of the study for each completed buildings component questionnaire.

The field interviewers' wages for their 1989 CBECS activities were \$230,670; their expenses for such things as mileage, parking, and long distance phone calls were \$67,697. Long distance travel costs for traveling interviewers were \$36,276. The total unit cost for a completed buildings component interview, based on these cost elements, was \$56.94. The line total buildings component direct costs in Table 5.1 represents the total direct cost, to Westat, for performing the buildings component of 1989 CBECS. Costs for this portion of the 1989 study were \$952,582; representing a per interview unit cost of \$162.09. All CBECS and related surveys direct costs is the sum of direct costs for the buildings and suppliers components. This total was \$1,175,005, representing a unit cost per sampled building for which a completed interview was obtained of \$199.93.

Table B11. Fuels Used by Households in 1987, 1984, 1981, and 1978
(Million Households)

Census Region and Division	Natural Gas	Fuel Oil/ Kerosene	Electricity	LPG
1987				
United States	57.312	17.420	* 90.515	7.679
Northeast	11.674	9.106	* 19.050	1.100
New England	1.694	2.578	4.272	.465
Middle Atlantic	9.980	6.527	* 14.777	.634
Midwest	17.119	3.076	* 22.259	2.276
East North Central	12.217	2.489	15.861	1.506
West North Central	4.902	.587	6.398	.770
South	15.139	4.649	* 30.905	3.343
South Atlantic	5.857	3.558	15.574	1.889
East South Central	2.486	* .974	6.088	.764
West South Central	6.796	Q	9.243	.691
West	13.380	.589	* 18.302	.961
Mountain	3.468	.157	4.443	Q
Pacific	9.912	.432	* 13.859	.715
1984				
United States	55.414	17.466	86.268	7.840
Northeast	11.742	9.520	18.298	1.354
New England	2.022	2.503	4.269	.488
Middle Atlantic	9.719	7.016	14.029	.866
Midwest	16.852	2.613	21.617	1.934
East North Central	11.850	1.979	15.203	1.123
West North Central	5.002	.634	6.414	.811
South	14.342	4.641	29.317	3.668
South Atlantic	5.564	3.898	14.769	2.319
East South Central	2.429	.545	5.784	.536
West South Central	6.348	Q	8.764	.813
West	12.479	.691	17.036	.884
Mountain	3.355	.261	4.491	Q
Pacific	9.124	.431	12.545	.613
1981				
United States	53.411	14.582	83.105	7.344
Northeast	11.347	8.935	17.927	1.178
New England	1.985	2.450	4.263	.465
Middle Atlantic	9.362	6.485	13.664	.713
Midwest	16.089	2.328	21.236	2.074
East North Central	11.437	1.749	14.613	1.170
West North Central	4.652	.579	6.623	.905
South	14.197	2.780	27.681	3.380
South Atlantic	5.364	2.489	14.106	2.129
East South Central	2.561	.262	5.612	.585
West South Central	6.272	Q	7.963	.666
West	11.778	.540	16.261	.711
Mountain	3.023	.083	3.931	Q
Pacific	8.755	.457	12.330	.493
1978				
United States	48.990	17.214	76.572	6.913
Northeast	11.710	8.876	17.363	1.306
Midwest	16.211	3.169	20.614	1.482
South	10.985	4.322	24.603	3.688
West	10.084	.846	13.992	.437

Q Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

* Statistically significant difference from the 1984 value at the 1 percent level of significance.

Notes: • Data for Census divisions are not available for 1978. • Because of rounding, data may not sum to totals. • The count of households for electricity at the national level and for each Census region is, or is close to, a control total that has very little or no sampling variation.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Table B12. Percentage of Households Using the Fuel in 1987, 1984, 1981, and 1978
(Percent)

Census Region and Division	Natural Gas	Fuel Oil/ Kerosene	Electricity	LPG
1987				
United States	63.3	19.2	100.0	8.5
Northeast	61.3	47.8	100.0	5.8
New England	39.6	60.3	100.0	10.9
Middle Atlantic	67.5	44.2	100.0	4.3
Midwest	76.9	13.8	100.0	10.2
East North Central	77.0	15.7	100.0	9.5
West North Central	76.6	9.2	100.0	12.0
South	49.0	15.0	100.0	10.8
South Atlantic	37.6	22.8	100.0	12.1
East South Central	40.8	16.0	100.0	12.5
West South Central	73.5	Q	100.0	7.5
West	73.0	3.2	99.9	5.2
Mountain	78.1	3.5	100.0	Q
Pacific	71.4	3.1	99.8	5.2
1984				
United States	64.2	20.2	99.9	9.1
Northeast	64.2	52.0	100.0	7.4
New England	47.4	58.6	100.0	11.4
Middle Atlantic	69.3	50.0	100.0	6.2
Midwest	78.0	12.1	100.0	8.9
East North Central	77.9	13.0	100.0	7.4
West North Central	78.0	9.9	100.0	12.6
South	48.9	15.8	100.0	12.5
South Atlantic	37.7	26.4	100.0	15.7
East South Central	42.0	9.4	100.0	9.3
West South Central	72.4	Q	100.0	9.3
West	73.0	4.0	99.7	5.2
Mountain	74.4	5.8	99.5	Q
Pacific	72.5	3.4	99.7	4.9
1981				
United States	64.2	17.5	100.0	8.8
Northeast	63.3	49.8	100.0	6.6
New England	46.6	57.5	100.0	10.9
Middle Atlantic	68.5	47.5	100.0	5.2
Midwest	75.8	11.0	100.0	9.8
East North Central	78.3	12.0	100.0	8.0
West North Central	70.2	8.7	100.0	13.7
South	51.3	10.0	100.0	12.2
South Atlantic	38.0	17.6	99.9	15.1
East South Central	45.6	4.7	100.0	10.4
West South Central	78.8	Q	100.0	8.4
West	72.3	3.3	99.8	4.4
Mountain	76.4	2.1	99.3	Q
Pacific	71.0	3.7	100.0	4.0
1978				
United States	63.9	22.5	100.0	9.0
Northeast	67.4	51.1	100.0	7.5
Midwest	78.6	15.4	100.0	7.2
South	44.7	17.6	100.0	15.0
West	71.9	6.0	99.7	3.1

Q Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

* Statistically significant difference from the 1984 value at the 1 percent level of significance.

Note: Data for Census divisions are not available for 1978.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Table B13. Average Household Energy Prices for 1987, 1984, 1981, and 1978
(Dollars Per Million Btu)

Census Region and Division	Natural Gas	Fuel Oil/ Kerosene	Electricity	LPG	All Fuels
1987					
United States	* 5.41	* 5.89	22.34	* 8.91	10.71
Northeast	* 6.45	* 5.79	* 27.78	13.24	* 10.26
New England	* 6.75	* 5.91	* 26.16	11.93	* 10.09
Middle Atlantic	* 6.40	* 5.74	* 28.24	14.48	* 10.30
Midwest	* 4.93	* 5.97	* 23.09	* 7.58	9.18
East North Central	* 5.01	* 6.01	* 23.77	* 8.18	9.17
West North Central	4.69	* 5.74	21.60	* 6.52	9.19
South	5.53	* 6.29	20.61	9.56	12.82
South Atlantic	6.50	* 6.24	21.57	11.15	13.93
East South Central	4.92	* 6.53	17.50	* 9.14	11.79
West South Central	* 4.81	Q	21.31	6.96	11.77
West	* 5.05	* 6.11	* 20.76	9.30	10.53
Mountain	* 4.54	5.54	21.26	6.41	9.12
Pacific	* 5.34	6.27	* 20.58	11.35	11.21
1984					
United States	5.97	7.64	21.94	9.91	10.73
Northeast	7.43	7.54	29.77	13.11	11.52
New England	7.81	7.87	28.03	11.97	11.53
Middle Atlantic	7.35	7.41	30.31	14.23	11.52
Midwest	5.59	7.67	21.64	8.67	8.96
East North Central	5.75	7.69	22.18	9.09	9.02
West North Central	5.17	7.62	20.55	8.13	8.82
South	5.81	8.14	20.39	10.38	12.39
South Atlantic	6.68	8.12	21.66	11.59	13.44
East South Central	5.13	8.32	16.19	9.75	11.27
West South Central	5.22	8.66	21.79	8.99	11.54
West	5.55	7.85	18.94	10.56	10.02
Mountain	5.08	7.77	19.95	9.26	9.13
Pacific	5.80	7.89	18.58	11.36	10.44
1981					
United States	4.55	8.89	18.51	8.74	8.93
Northeast	5.78	8.92	25.23	10.52	10.36
New England	7.06	8.98	24.80	11.32	11.16
Middle Atlantic	5.53	8.89	25.36	10.22	10.14
Midwest	4.16	8.71	17.93	7.98	7.10
East North Central	4.23	8.73	18.59	8.69	6.99
West North Central	3.96	8.65	16.72	7.27	7.38
South	4.59	8.93	17.23	9.20	10.37
South Atlantic	5.25	8.95	18.14	9.94	11.48
East South Central	4.12	8.69	14.60	8.37	9.42
West South Central	4.20	8.86	17.98	8.20	9.35
West	4.01	8.76	15.98	8.50	8.00
Mountain	4.00	8.68	16.16	7.92	7.50
Pacific	4.02	8.77	15.92	8.89	8.19
1978					
United States	2.74	3.93	12.10	5.09	5.25
Northeast	3.42	3.98	15.34	7.93	5.33
Midwest	2.57	3.82	13.64	4.55	4.57
South	2.85	3.94	11.75	5.16	6.81
West	2.30	3.77	8.28	4.18	4.27

Q Data withheld because the RSE for 1984 or 1987 was greater than 50 percent.

* Statistically significant difference from the 1984 value at the 1 percent level of significance.

Note: Data for Census divisions are not available for 1978.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987, 1984, 1981, and 1978 Residential Energy Consumption Surveys.

Appendix C

Quality of the Data

$$RSE(X/Y) = \sqrt{RSE^2(X) + RSE^2(Y)}$$

Quality of the Data

The quality of data collection and processing affects the accuracy of estimates based on the survey. All the statistics published in this report are estimates of population values, such as the total amount of electricity consumed in housing units. These estimates are based on observations from a randomly chosen subset of the entire population of occupied housing units. As a result, the estimates always differ from the true population values.

Differences that would be expected to occur in all possible samples, or in the average of all estimates from all possible samples, are known as systematic errors, biases, or nonsampling errors. The magnitude of nonsampling errors cannot be estimated from the sample data. For this reason, avoiding nonsampling errors at the outset is a primary objective of all stages of survey design. The sections that follow this introduction describe some of the sources of this nonsampling error, and how the survey is designed and conducted to minimize such errors.

Random differences between the survey estimates and the population value, which occur because of the particular sample that was selected by chance, are known as sampling errors. The average sampling error, averaged over all possible samples, would be zero. Although the sampling error is nonzero and unknown for the particular sample chosen, the sample design permits sampling errors to be estimated. The final section, "Sampling Error," describes how the magnitude of the sampling error is estimated and presented for statistics given in this report.

Nonsampling Error

Data from the 1987 Residential Energy Consumption Survey (RECS) are subject to many sources of nonsampling error and bias. Nonsampling error and bias are measures of variability due to the way the survey was conducted. They can include population undercoverage during sampling, response bias and variance, interviewer error, coding and/or keypunch-

ing error, and nonresponse bias. The wording and format of survey questionnaires, the procedures used to select and train interviewers, and the quality control built into the data collection, receipt, and processing operations were all designed to minimize these sources of error. (For discussion of these procedures, see Appendix A, "How the Survey Was Conducted.") In addition, response adjustments and ratio estimations were incorporated into the survey estimator to help reduce both sampling and nonsampling error. These procedures also are discussed in Appendix A, "How the Survey Was Conducted."

Noncovered Housing Units

Data are not collected for the following two types of housing units:

- Vacant housing units. These units may have minimal heating for protection from the weather and lighting for security. The American Housing Survey (AHS) conducted by the Bureau of the Census estimated that there were 6.1 million vacant, year-round housing units in 1985.
- Second homes for the owner's use. The AHS estimates there were 2.2 million homes "held for occasional use" in 1985.

These two types of units are not included in the RECS survey primarily because of the difficulty in acquiring data and limitations in the availability of funds for the RECS. The RECS data are collected by interviewing someone who knows the housing unit and who can sign an authorization form for release of fuel records from the fuel supplier. That type of person is less likely to be available for vacant or second homes than for primary residences.

Some effects of these omissions are an underestimation of the total number of residential housing units, the number of units in subcategories and the amount of energy consumed in the residential sector.

Sampling Unit Interview Error

The design of the 1987 RECS included a longitudinal panel. This panel is a subsample of the entire 1987 RECS sample. Unfortunately, the interviewers sometimes made mistakes and interviewed the occupants of the wrong housing unit. This usually occurred in rural areas where the housing units did not have a street address. In the cases where this occurred for the longitudinal panel, the 1987 RECS data set would indicate that the housing unit was also sampled for the 1984 RECS data set when, in fact, a different housing unit was interviewed. This occurred an undetermined number of times. But there is evidence that it occurred at least 15 times out of the 2,065 longitudinal housing units in the 1987 RECS. These 15 units were discovered in a limited check among the 40 housing units where the percent change in the square footage from the 1984 RECS to the 1987 RECS was the largest. A more extensive check performed for the 1984 RECS revealed that this type of mistake occurred at least 50 times out of the 1,830 longitudinal housing units in the 1984 RECS.

Quality Control and Performance Statistics

The RECS has begun collecting performance statistics on the data coding and editing phase of RECS work. Performance statistics are information about an ongoing process that provides feedback on how well the process is working. This information, first compiled for the 1984 RECS, provided useful input for decisions concerning the data collection and data editing procedures for the 1987 RECS. Several changes in the procedures were made for the 1987 RECS based on performance statistics from the 1984 RECS, including major changes in the keying verification and interviewer training procedures.

Keying errors that were not caught in the 1984 RECS were found to be more costly to correct at a later stage than if they were discovered and corrected in the initial data cleaning stage. Many of the keying errors were not initially detected because keying was verified only 25 percent of the time for some data items. To save costs in the later stage, all data items were 100 percent verified for the 1987 RECS.

For each interviewer that worked on the 1984 RECS, the number of errors was tabulated. Those interviewers who were also working on the 1987 RECS were given extra training in the areas where they had made errors

in their work on the 1984 RECS. Items with the largest number of errors also received special attention in the interviewer training for all interviewers.⁸

Quality of Specific Data Items

Square Feet of Floorspace

For each sampled dwelling, the square footage of the dwelling and the square footage of the heated floorspace is determined or estimated. (See "Estimation of Housing Unit Size" section in Appendix A for a discussion of the square footage measurements.) Errors in the square footage of floorspace in a sampled dwelling can be made in several places. The interviewer can record incorrect measurements, forget to include some parts of the dwelling, include floorspace that is not part of the housing unit, or incorrectly label which areas are heated and which areas are not heated.

For housing units in the longitudinal panel, the interviewers attempted to obtain the square footage measurements during both the 1984 RECS and the 1987 RECS. An analysis of longitudinal housing units was made in order to study the order of the measurement error in the determination of the total square footage of a housing unit. All of the longitudinal housing units were used in the study with the following exceptions:

1. Housing units where it was determined that the wrong unit was interviewed for the 1984 RECS or the 1987 RECS.
2. Housing units where the square footage was imputed for either the 1984 RECS or the 1987 RECS.
3. Housing units where the respondents indicated that a change in the square footage was made between the two surveys.
4. Housing units whose occupants responded by mail for either the 1984 RECS or the 1987 RECS.

The results of the analysis showed a median percentage difference of 11 percent for total square feet (heated area plus unheated area). The percentage difference was the absolute value of the difference between the two measurements as a percentage of the average of the two measurements.

In addition to analyzing the housing units in the longitudinal panel, a comparison of the average total floorspace over all units in the samples was completed. This comparison revealed that the average total floorspace for the 1984 RECS was 1,672 square feet

⁸For more information about RECS performance statistics, see Thomas B. Jabine, Review of Computer Edit and Update Performance Statistics for the Residential Energy Consumption Survey, report prepared for the Energy Information Administration, December 1987.

The average for the 1987 RECS was 1,733 square feet. This increase is statistically significant. The increase is most likely a result of improvements in the procedures used to obtain the square footage measurements and not a result of an actual increase in the average size of dwellings. In particular, the interviewers for the 1987 RECS were given special training on how to properly measure a housing unit. This training probably was the reason for the increase in the percentage of housing units (56 percent to 73 percent) where the square footage data could be based on a complete set of measurements. In addition, the quality of the measurements that were obtained most likely increased.

Type of Housing Unit

The type of the housing unit was determined by the interviewer without the help of the respondent. The amount of interviewer error made in determining the

type of the housing unit can be studied using the housing units in the longitudinal panel. Table C1 presents a cross-tabulation of the 1984 RECS housing type and the 1987 RECS housing type for 2,049 longitudinal households. (The 15 cases where it was determined that different housing units were interviewed and the one case where the basement was converted to an apartment were not used in the table.)

Table C1 indicates that there are several areas where there is confusion among the interviewers on how to classify dwellings. The housing type that appears to cause the most confusion is "single-family attached" units. It is possible for some housing units to change type. This would occur if additional housing units are created in a building or if some residential space is converted to nonresidential usage. This occurrence is probably much smaller than the number of mistakes made by interviewers.

Table C1. Housing Type for Longitudinal Households

Housing Type as Reported in the 1984 RECS	Housing Type as Reported in the 1987 RECS				
	Mobile Home	Single-Family Detached	Single-Family Attached	Apartment Building 2-4 Units	Apartment Building 5+ Units
Mobile Home	115	9	0	0	0
Single-Family Detached	9	1,265	16	20	1
Single-Family Attached	0	26	53	14	2
Apartment Building 2-4 Units	0	10	21	209	10
Apartment Building 5+ Units	0	0	6	10	269

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1984 and 1987 Residential Energy Consumption Surveys.



This single-family home is located in the West Census Region and represents one of the households that was sampled in the Residential Energy Consumption Survey.

Table C2. Estimates for 1987 Household Income from CPS and RECS
(Thousands of Households)

Income Category	Number of Households	
	1987 RECS (November 1987)	CPS Estimates (March 1988)
Total	90,537	91,066
Less than \$5,000	8,176	6,271
\$5,000 - \$9,999	11,489	10,446
\$10,000 - \$14,999	12,619	9,658
\$15,000 - \$19,999	9,014	9,136
\$20,000 - \$24,999	8,751	8,406
\$25,000 - \$29,999	7,926	7,647
\$30,000 - \$34,999	8,270	7,017
\$35,000 - \$39,999	5,626	6,198
\$40,000 - \$49,999	7,749	9,479
\$50,000 - \$74,999	8,677	11,109
\$75,000 or Over	4,238	5,700

Sources: • Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey. • U.S. Department of Commerce, Bureau of the Census, Current Population Survey.

Income

Underreporting of income is often a problem in surveys similar to the RECS. Underreporting may be exacerbated in the RECS, which measures income by only one question. In comparison, the Current Population Survey (CPS) collected by the Bureau of the Census measures income by several questions; income questions are asked separately for each source of income

and each household member. Table C2 presents a comparison of the CPS estimates with the RECS estimates

The underreporting of income on the 1987 RECS relative to the CPS is evident in the upper income categories. The 1987 RECS gives an estimate of 26.3 million households with an income of \$35,000 or more while the CPS estimates the number is 32.5 million households.

Table C3. Definition of Poverty

Number of Persons Per Family	Below 100 Percent of Poverty		Below 125 Percent of Poverty	
	1987 RECS Income Range Less Than ^a	Census Threshold ^b	1987 RECS Income Range Less Than ^a	125 Percent Threshold ^b
1 and--				
Respondent 64 or Younger	\$6,000	\$5,909	\$7,500	\$7,386
Respondent 65 or Older	5,000	5,447	7,500	6,809
2 and--				
Householder 64 or Younger	7,500	7,641	10,000	9,551
Householder 65 or Older	7,500	6,872	9,000	8,590
3	9,000	9,056	11,000	11,320
4	11,000	11,611	15,000	14,514
5	14,000	13,737	17,500	17,171
6	15,000	15,509	20,000	19,386
7	17,500	17,649	22,500	22,061
8	20,000	19,515	25,000	24,394
9 or More	22,500	23,105	30,000	28,881

^a The income category that contained the Census threshold was taken as the upper limit in defining poverty when the Census threshold was equal to or above the midpoint of the income category. For example, since the threshold of \$5,447 was not above the midpoint of the category \$5,000 to \$5,999, the next lower income category was used.

^b Figures from the U.S. Bureau of the Census, **Money Income and Poverty Status of Families and Persons in the United States: 1987** (Advance Data from the March 1988 Current Population Survey) (Current Population Reports, Series P-60, No. 161, August 1988), Table A1, p.41.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

Poverty Status

The United States Bureau of the Census provides a threshold of poverty which is based on family income and the number of household members (Table C3). Households with incomes below the poverty threshold are defined as "Below 100 Percent of Poverty Line." Households with income below 125 percent of the poverty threshold are defined as "Below 125 Percent of Poverty Line."

Because the RECS income data were collected using categories of income, an exact match of Census thresholds could not be made. An additional source of error in the determination of poverty status is the nonsampling error in the reported income. The CPS estimate for households below 100 percent of poverty was 11,945,000 for March 1987. The 1987 RECS estimate was 11,768,000 households below 100 percent of poverty. The fact that the two estimates are very close together may be misleading. For example, the 1984 RECS estimate was 13,680,000 households below 100 percent of poverty, while the CPS estimate for 1984 was 11,887,000. The 1984 RECS report (Appendix C, "Quality of the Data.") incorrectly gave the CPS estimate as 13,886,000.

Gas Central Air Conditioning

Some respondents incorrectly report that they have gas air conditioners when, in reality, they have electric air conditioners. The majority of the households claiming to have natural gas or LPG central air conditioning may actually have electric systems. Three possible explanations for these errors are as follows: (1) respondents may have confused Freon with the fuel running the compressor, (2) the housing unit was in an apartment building and the occupants did not know the type of fuel used in the central air-conditioning system, and (3) households with gas central forced-air heating systems and electric central air-conditioning systems may have thought they were both gas systems. (This may be especially true if one thermostat controls both systems.) In the 1987 RECS, an estimated 1.7 million households initially reported that they had gas air conditioners. After checking again with the respondents and with the rental agents, or looking for a pattern in the natural gas utility bills that indicated increased usage during periods of demand for air conditioning, the estimated number of households that used gas air conditioners was reduced to 0.6 million. This estimate still may be too high.

New Homes

The RECS estimates of the number of homes constructed from 1985 through 1987 that use gas (natural gas or LPG) as the main heating fuel do not seem to agree with the U.S. Bureau of Census estimates pub-

lished in *Characteristics of New Housing: 1987*, U.S. Department of Housing and Urban Development. The RECS data indicate that 30.7 percent of homes (excluding mobile homes), constructed from 1985 through 1987 are heated with natural gas and 2.6 percent are heated with LPG. Census data indicate that 43.2 percent of new homes are heated with gas (natural gas or LPG). Data on heating fuels of newly constructed mobile homes are not available from Census data. The Census data covers all units completed any time during 1985 through 1987. The RECS data count units that were occupied as of the time the interview was attempted, which may be as early as September 1987. Hence, all units that were first occupied during the last part of 1987 may not be covered by RECS. The Census estimates are based on units completed but, not necessarily occupied, and even if the units are occupied, they may not be the primary residence. The RECS estimates are based on occupied units that are the primary residence of the occupants. The Census data give the fuel for the main heating equipment that was installed in the home. The RECS data give the fuel that the occupants indicate is the main space-heating fuel. Furthermore, after being occupied, the residents sometimes change the main heating fuel by installing wood stoves or portable heaters.

Weather (Degree-Days)

Degree-days were assigned to housing units for the 1987 RECS from individual weather stations, as opposed to previous RECS surveys, where the degree-day data were from clusters of weather stations (a cluster of weather stations were those contained within an individual NOAA weather division. See the "Glossary" for the definition of NOAA division.) This change in the methodology from the cluster method to the station method will provide more accurate weather data for some households. The problem with using data from a cluster of weather stations is that some clusters contained a high variability in temperatures recorded among stations within the cluster. By selecting an appropriate, nearby weather station, it is believed that the difference between the temperatures actually experienced by a household and the temperature assigned to that household could be minimized. In selecting an appropriate, nearby weather station, distance was the major consideration but intervening mountain ranges and presence of bodies of water were also taken into account.

This change has made it more difficult to assess trends in degree-days when comparing the 1987 RECS with previous RECS. To assess the effect of this change, both methods were used to affix weather data to households for the 1984 RECS. The results from comparing the two methods indicate that, in general, at the national level, the change to individual weather stations has decreased the number of heating degree-days and increased the number of cooling degree-days (Table C4). The difference is particularly large in the West, where

Table C4. Comparison of Heating Degree-Days Using Cluster Method Versus Station Method, April 1984 Through March 1985

Census Division	Million Households	Heating Degree-Days			Cooling Degree-Days		
		Cluster Method	Station Method	Percent Difference	Cluster Method	Station Method	Percent Difference
United States	86.328	4,686	4,518	-3.6	1,153	1,293	12.1
New England	4.269	6,398	6,331	-1.0	524	621	18.4
Middle Atlantic	14.029	5,663	5,460	-3.6	683	822	20.3
East North Central	15.203	6,524	6,427	-1.5	685	777	13.4
West North Central	6.414	6,619	6,499	-1.8	976	1,076	10.2
South Atlantic	14.777	2,951	2,979	0.9	1,768	1,819	2.8
East South Central	5.784	3,651	3,512	-3.8	1,433	1,583	10.5
West South Central	8.764	2,443	2,444	0.1	2,361	2,431	2.9
Mountain	4.512	5,728	5,158	-10.0	1,102	1,550	40.6
Pacific	12.577	3,508	3,019	-13.9	873	1,148	31.5

Note: The cluster method uses weather data from the set of weather stations in a NOAA weather division. The station method uses weather data from an individual weather station.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1984 Residential Energy Consumption Survey.

the Mountain Division and the Pacific Division had changes that were much larger than the changes at the national level. One reason for the large differences in the Pacific Division is that stations in California were clustered together on the basis of drainage areas, thus combining weather stations from mountainous areas with lowland areas. The reader may use degree-day data to make comparisons among subgroups within the 1987 RECS, but should avoid comparing degree-day data from the 1987 RECS with degree-day data from previous RECS.

Adjusted Electricity

If the energy derived from the fossil fuels used to generate electricity is taken into account, then the totals in this report underrepresent the amount of energy consumed in the residential sector. It is estimated that approximately 3 Btu of fossil fuels are needed to generate and deliver 1 Btu of electricity to a housing unit. In this report, the total amount of energy used is obtained by adding the Btu value of fossil fuels consumed by households to the Btu value of electricity delivered to households. The difference between the Btu value of fossil fuels used to produce electricity and the Btu value of electricity delivered to households is excluded. The total amount of energy consumed would reflect this difference if the 'site' value of electricity is multiplied by 3 to yield the 'adjusted' value of electricity and the 'adjusted' value of electricity is used to calculate the total energy consumed.

In the 1987 RECS, when electricity was adjusted to include the amount of energy used to produce the electricity, the total average amount of energy used by a household was 161.7 million Btu. This contrasts with 100.8 million Btu when the 'site' value of electricity is used. If the 'adjusted' value of electricity is used, the proportion of energy used for space heating is 33 percent and the proportion used for appliances is 33 percent. As reported in the companion report, when the 'site' value of electricity is used, the proportion of energy used for space heating is 54 percent and the proportion of energy used for appliances is 23 percent.

Space-Heating Intensity

The heating intensity is used to display the amount of energy used for space heating when the weather and size of housing unit have been standardized. There are two procedures to calculate the heating intensity for a category of households. Procedure 1 calculates the average value of the amount of energy used for space heating by households in the category, average heated floorspace of the housing units occupied by the households in the category, and the average number of heating degree-days experienced by the households in the category. The heating intensity then equals the average amount of energy divided by the average heated floorspace and by the average number of heating degree-days. Procedure 2 calculates an individual heating intensity for all households in the category. The heating intensity for the category is the average over

all households in the category of the individual heating intensities.

The companion report to this one used Procedure 1 for calculating heating intensities. (See "Space-Heating Intensity" in the "Energy Consumption Patterns" section of that report for details of Procedure 1.) Procedure 2 is outlined below:

For each household that heated their home let HHHEATINT be the household heating intensity. Then

$$HHHEATINT = \frac{BTUSPH}{(HDD \times HEATED)}$$

Where:

BTUSPH = the number of Btu of energy used for space heating,

HDD = the annual heating degree-days (base 65 degrees Fahrenheit) experienced by the household (if the annual heating degree-days equaled 0 then set HDD equal to 1),

and

HEATED = the heated floorspace of the housing unit.

If households did not heat their home then set HHHEATINT equal to 0. The heating intensity for a category of households equals the average value of HHHEATINT over all households in the category.

Analogous definitions can be used to calculate the household heating intensity for specific fuels using Procedure 2. For example, the heating intensity for households that use natural gas as the main space-heating fuel is the average value of the household natural gas heating intensity over all households that use natural gas as the main space-heating fuel.

The two procedures will usually give a different value for the heating intensity. For the 1987 RECS, the procedure used in the companion report (Procedure 1) gives a natural gas heating intensity for households that use natural gas as the main space-heating fuel equal to 10.0 Btu per heating degree-days and per square foot. Procedure 2 gives a heating intensity equal to 12.6 Btu per heating degree-days and per square foot.

Procedure 2 usually gives a larger value for the heating intensity because the distribution of the household intensities is skewed in the positive direction. The households with the large values for the heating intensity tended to either live in small units or be located in

warm climates and, hence experience a small number of heating degree-days. In either case, the consumption of energy for space heating will tend to be smaller than average, but the decrease in the energy consumption will be less than the decrease in the amount of heated floorspace or the decrease in the number of heating degree-days.

Heating intensities for the *Residential Energy Consumption Survey: Consumption and Expenditures April 1984 Through March 1985, Part 2: Regional Data* were calculated using Procedure 2. No comparison was made between the heating intensities reported for the 1984 RECS and those reported for the 1987 RECS because of the change in the procedure that was used to calculate the intensity.

Air-Conditioning Intensity

The air-conditioning intensity is used to display the amount of energy used for air conditioning when the weather and amount of cooled floorspace have been standardized. Analogous to heating intensity, there are two different procedures that can be used to calculate the air-conditioning intensity. In this report, the air-conditioning intensity is calculated using a procedure that corresponds to Procedure 1 for calculating the heating intensity. In particular, the air-conditioning intensity equals the average consumption of energy used for air conditioning divided by the average value for cooling degree-days (base 65 degrees Fahrenheit) and divided by the average number of cooled square feet. For individual housing units, the amount of cooled floorspace is not estimated from measurements of the cooled floorspace in the housing unit. Instead, the cooled square footage is given by the following formula:

$$COOLED = HOMEAREA \times \left(\frac{NROOMSAC}{NROOMS} \right)$$

Where:

HOMEAREA = total floorspace of the housing unit,

NROOMS = number of rooms in the housing unit,

and

NROOMSAC = number of rooms in the housing unit that can be air-conditioned during the summer.

Annualization of Energy Consumption and Expenditure Data

Usable Data

Two steps were used to determine the annual consumption and expenditure amounts for electricity and natural gas. The first step was to determine if there was a sufficient amount of accurate billing data to calculate the annual consumption and expenditure amounts. The second step was to use predetermined annualization procedures to calculate an annual amount if the billing data were adequate. If the billing data were missing or were not usable, the annual amounts were imputed using regression estimates.

For fuel oil, kerosene, and LPG, there was an additional step in determining the annual amounts. As with electricity and natural gas, if supplier data were available and usable, the annual amounts were based on the supplier data. If the supplier data were not available or not usable, then the next step was to determine if the respondent provided usable estimates of the annual amounts. If these estimates were available and usable, they were used. If both the billing data and respondent estimates were missing or not usable, the annual amounts were imputed using regression estimates.

Comparison with 1984 RECS

The proportion of households with usable fuel-consumption records was higher in 1987 than it was in 1984. The difference is 3 percentage points for electricity, 3 for natural gas, 5 for LPG, 12 for fuel oil, and 2 for kerosene.

For electricity and natural gas, three factors contributed to the increase. First, new procedures for annualizing records made it possible to use more fuel records, including those that were for relatively short periods and those where the household did not pay for all uses of the fuel. Second, data were collected for households who paid for utility bills that included another household. Third, refusal conversion techniques resulted in the elimination of supplier nonresponse.

For fuel oil and LPG, three factors contributed to the increase. First, the number of households with fuel included in rent declined. Second, data were used for households who pay for utility bills that included another household. Third, a greater number of usable bills were collected.

For kerosene, collection of household estimates during the household interview decreased the number of imputations.

Table C5 shows the availability of consumption records by the type of housing structure. Usable records were most often obtained for single-family units, more often for electricity (90.0 percent of the units) and natural gas (89.2 percent) than for fuel oil (75.1 percent), kerosene (71.8 percent) or LPG (67.3 percent). The problems inherent in collecting data for the storage fuels were described earlier: multiple suppliers, "cash-and-carry" customers, companies supplying purchase data instead of usage data, and economic instability of the supplying companies.

Most of the consumption and expenditure data for large apartment buildings, especially natural gas and fuel oil, are imputed data. Usable records were obtained for only 25.4 percent of the apartments in large buildings that used natural gas and none of those using fuel oil. LPG and kerosene are infrequently used in large apartment buildings. Electricity data for these apartments were obtained in 61.5 percent of the cases.

The reason data on consumption and expenditures are so often imputed for multiunit structures is that energy use is not directly metered for individual apartments. A master meter registers the usage for a number of units in the building. Under these circumstances, there is no way to measure the consumption of individual apartments directly.

Other segments of the data for which the lack of usable records may lead to an imputation bias include natural gas and fuel oil for apartments in smaller buildings (two to four units per building), and fuel oil and LPG used in mobile homes. Usable records in these segments were obtained for between 38.6 percent and 62.5 percent of the households.

Annualization of Energy Bills: Electricity and Natural Gas

The utilities provide the electricity and natural gas billing records, which typically cover a period of approximately 30 days. The bills were used to calculate the annual consumption and expenditure amounts.

The utility bills that were obtained from the electricity and natural gas utilities never exactly matched the optimal consumption period defined as January 1, 1987, through January 1, 1988. In addition, the vast majority of the households did not have a set of utility bills that covered exactly 365 days for a period that was close to the 1987 calendar year. As a result, an algorithm was developed that chooses which set of bills to use to compute the annual consumption and expenditures.

Table C5. Energy-Consumption Records and Missing Data for Surveyed Households, by Fuels Used and Type of Housing Structure
(Percent of Households)

Type of Fuel Used	Total Households Using the Fuel	Mobile Home	Single-Family	Two to Four Units	Five or More Units
Electricity	100.0	100.0	100.0	100.0	100.0
(Sample Number)	(6,228)	(365)	(4,087)	(775)	(1,001)
Usable Record	82.8	81.9	90.0	72.4	61.5
Unusable Record ^a	0.9	1.1	0.5	1.0	2.5
Records Not Available	8.8	8.2	8.2	11.5	9.2
Fuel Used Is Included in					
Rent or Paid in Other Ways ^b	7.5	8.8	1.2	15.1	26.8
Natural Gas	100.0	100.0	100.0	100.0	100.0
(Sample Number)	(3,991)	(142)	(2,538)	(614)	(697)
Usable Record	73.4	73.9	89.2	62.5	25.4
Unusable Record ^a	1.9	4.9	1.6	2.4	1.9
Records Not Available	7.9	6.3	7.8	11.9	5.0
Fuel Used Is Included in					
Rent or Paid in Other Ways ^b	16.8	14.8	1.3	23.1	67.7
Fuel Oil	100.0	100.0	100.0	100.0	100.0
(Sample Number)	(952)	(35)	(611)	(132)	(174)
Usable Record	55.7	57.1	75.1	38.6	(^c)
Unusable Record ^a	7.1	14.3	9.0	6.1	(^c)
Records Not Available	12.9	28.6	15.5	12.9	0.6
Fuel Used Is Included in					
Rent or Paid in Other Ways ^b	24.3	(^c)	.3	42.4	99.4
Kerosene	100.0	100.0	100.0	100.0	100.0
(Sample Number)	(414)	(64)	(323)	(19)	(8)
Usable Record	69.1	59.4	71.8	68.4	(3)
Unusable Record ^a	2.7	7.8	1.9	(^c)	(^c)
Records Not Available	28.0	32.8	26.3	31.6	(4)
Fuel Used Is Included in					
Rent or Paid in Other Ways ^b	0.2	(^c)	(^c)	(^c)	(1)
LPG	100.0	100.0	100.0	100.0	100.0
(Sample Number)	(543)	(128)	(407)	(4)	(4)
Usable Record	63.9	56.3	67.3	(1)	(^c)
Unusable Record ^a	8.7	14.1	7.1	(^c)	(^c)
Records Not Available	21.9	16.4	23.1	(2)	(2)
Fuel Used Is Included in					
Rent or Paid in Other Ways ^b	5.5	13.3	2.5	(1)	(2)

^a Data were unusable for electricity and natural gas if the records covered less than 5 months and included seasonal use (heating or cooling) or if the records covered less than 2 months. Data were unusable for fuel oil, kerosene, and LPG if the record covered less than 1 year.

^b These data exclude households that paid for some, but not all, uses of a fuel.

^c Represents or rounds to zero.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, 1987 Residential Energy Consumption Survey.

The algorithm used the period covered by the bills and the presence of estimated bills in determining which set of bills to use. The algorithm balanced the desire for a set of utility bills that cover exactly 365 days, the desire for a set that begins near January 1, 1987, and ends near January 1, 1988, and the desire to avoid estimated bills.

The annualization procedure used (1) the sum of the consumption amounts and the sum of the expenditures for the set of chosen bills; and (2) the ratio of a preliminary regression estimate of energy consumption for a 365-day period to a preliminary regression estimate of energy consumption for the period covered by the set of chosen bills. The annual consumption was the sum

of the consumption amounts times the ratio. The annual expenditure was the sum of the expenditures times the ratio.

The preliminary regression estimates of consumption were based on a preliminary regression equation that was developed using data from the 1984 RECS. This preliminary regression equation had the following constraints: (1) If fuel was not used for space heating or air conditioning, the preliminary regression equation did not involve degree-days. (In this case, the ratio equals 365 divided by the number of days covered by the set of bills.) (2) If the fuel is used for space heating, the equation was a linear function of the number of heating degree-days. (3) If the fuel is used for air con-

ditioning, the equation was a linear function of the number of cooling degree-days.

A minimum number of days of utility bills was required for the annualization procedure to be used. The number of days was dependent on the end uses for which the fuel was used. If electricity was not used for space heating or air conditioning, and if 60 or more days of utility data were available, the annualization procedure was used. If electricity was used for space heating or air conditioning, the minimum number of days was 146. The same minimum number of days was also used for natural gas. In the cases where the utility bills did not cover the minimum number of days, the annual amount was imputed using a regression equation that was developed using the observations from the 1987 RECS where the utility data were usable. These regression equations are presented in Appendix B, "End-Use Estimation Methodology" of the companion report *Household Energy Consumption and Expenditures 1987, Part I: National Data*.

Annualization of Energy Bills: Fuel Oil, Kerosene, and LPG

Unlike metered types of energy (electricity and natural gas), fuel oil, kerosene, and LPG are purchased at discrete times. Hence, the supplier data for these fuels will reflect the amount purchased and the date purchased, but not the exact amount consumed for a given period of time.

Under optimal conditions, all of the fuel suppliers identified by the household would be able to supply the billing records of all the purchases for the 1987 calendar year. If the assumption is made that the amount purchased equals the amount consumed then the annual consumption and expenditures could be obtained by summing the amount purchased and the amount paid over all purchases that occurred during the 1987 calendar year. This was done whenever the fuel suppliers provided adequate data.

In some instances, the fuel suppliers provided purchase records that covered a 12-month period other than the 1987 calendar year. In these instances, the annual consumption and expenditures were set equal to the sum of the data obtained from the fuel purchase records for the available 12-month period. In most of these cases, the household had moved into the housing unit during 1987. Consequently, fuel purchase records would not exist for the full 1987 calendar year.

Kerosene used in portable heaters is usually purchased in small amounts on a cash-and-carry basis. Hence, the supplier would rarely have records that indicate the amount purchased and the amount paid for the purchase. Households that used kerosene were asked to provide an estimate of the amount and the cost of kerosene that they purchased during the past 12 months. When no supplier data for kerosene were available,

the household estimate was used. Household estimates were also used for fuel oil and LPG, but much less frequently.

If the supplier data for fuel oil, kerosene, or LPG were not usable and the respondent estimates were not available, the annual consumption and expenditure amounts were imputed using regression equations that were developed from the 1987 RECS observations where the supplier data were usable. These regression equations are presented in Appendix B, "End-Use Estimation Methodology" of the companion report *Household Energy Consumption and Expenditures 1987, Part I: National Data*.

Adjustments to Annual Amounts

For a small percentage of households, the annual consumption and expenditures were reduced in response to respondent-supplied information about the proportion of the fuel used for nonhousehold purposes such as drying grain, operating a commercial welding shop, or the use in another household. This adjustment was made to the consumption and expenditures for 3 percent of the households using electricity, 2 percent using LPG, 2 percent using natural gas, and 2 percent using fuel oil or kerosene. The aggregate weighted amount of energy consumption removed was 43 trillion Btu of electricity, 24 trillion Btu of natural gas, 6 trillion Btu of LPG, 3 trillion Btu of fuel oil and kerosene.

Date Chosen for Population Calculations

The weights for the respondents were adjusted so that the sum of the weights over all respondents equaled 90.537 million. (See Appendix A, "Survey Estimation" section.) This is the estimate of the number of households as of November 1987. It was obtained by interpolating between the March 1987 and March 1988 CPS estimates. (The March 1987 CPS estimates equaled 89.479 million and the March 1988 CPS estimates equaled 91.066 million.) Using the same linear estimation procedure the estimate for the number of households as of January 1987 equals 89.214 million and the number as of December 1987 equals 90.669 million.

November 1987 was chosen as the date to estimate the number of households because it was approximately the midpoint of the period in which the majority of the personal interviews were conducted, and it was consistent with the procedures for previous RECS. The use of this date to estimate the population size means that the estimated number of households with various characteristics will be an estimate of the number as of November 1987 (a date close to the average interview date for most of the respondents).

The use of November 1987 CPS estimates of the number of households will bias the estimates of the total annual consumption and the total annual expenditures in a positive direction. This is because the annual consumption for all respondents was estimated as if all of the households were in existence for the full year, when, in reality, some of the households did not exist at the start of the year. As noted above, the estimated number of households increased from 89.214 million in January 1987 to 90.669 million in December 1987. An alternative would have been to use 89.941 million (the average of the January and December estimates) as the control total for the national number of households.

The November estimate of the number of households (90.537 million) is .66 percent larger than the average of the January and December estimates (89.941 million). This is approximately the amount that the total national energy consumption was overestimated because of the use of November as the date to estimate the number of households. On the other hand, the per household energy consumption and expenditures statistics were not affected by a change in the control total.

Previous RECS estimated the consumption from April through March. Using interpolation, the CPS estimate of the number of households as of April 1987 equals 89.611 million. The March 1988 CPS estimate of the number of households equals 91.066 million. The average of these two estimates equals 90.339 million. The November 1987 CPS estimate (90.537 million) is .22 percent larger than 90.339 million. One effect of changing to the calendar year is to increase the bias of the total consumption estimates (based upon the estimated population count) from .22 percent to .66 percent.

Sampling Error

The form of the sampling error that is presented here is the relative standard error (RSE). The RSE is also known as the coefficient of variation. For a given survey statistic, Y , the relative standard error, $RSE(Y)$, is given by:

$$RSE(Y) = (S_Y / Y) \times 100.$$

Thus the standard error of Y is given by:

$$S_Y = RSE(Y) \times Y / 100.$$

This section provides an explanation and example of the procedures used to calculate approximate RSE's for each statistic shown in the "Detailed Statistics" of this report. This section also includes a discussion of the derivation of the procedures used to calculate the approximate RSE's. It also includes an explanation of the procedures used to calculate the RSE's for ratios.

Balanced Half-Sample Replication

For some surveys, a convenient algebraic formula for computing variances can be obtained. However, the RECS used a multistage area sample design of such complexity (see Appendix A, "How the Survey Was Conducted") that it is virtually impossible to construct an exact algebraic expression for estimating variances. Instead, the method used to estimate sampling variances for this survey was balanced half-sample replication. This numerical method involves pairing primary sampling units (PSU's) in strata so that differences between the members of each pair can be used to build an estimate of sampling variance. The strata were collapsed to 85 new strata to achieve this pairing of PSU's. Of these 85 strata, 44 consisted of two non-self-representing PSU's belonging to the same Census Divisions, with one PSU constituting each member of a pair. Of the remaining 41, 32 strata were each composed of one self-representing PSU; that is, they consisted of large metropolitan areas that came into the sample with certainty. In each of the latter strata, all of the PSU's were treated as a composite PSU, while the segments within the composite PSU were segregated into two groups representing the two members of a pair. There was no between-PSU component of variance for self-representing PSU's. The 9 remaining strata consisted of a non-self-representing PSU that was treated as if it were a self-representing PSU. These 9 unmatched non-self-representing PSU's were not matched due to a desire to match within the 9 Census divisions and the desire to treat Alaska and Hawaii as 2 separate and unique strata.

Half-sample replication involved repeatedly drawing pair members from the 85 strata. Each replication was called a "half-sample" because only one member of the pair within each of the 85 strata was selected. For each half-sample, the sampling weights were ratio adjusted upward. The result of the adjustment is that the sum of the weights for each of the 12 cells (four Census regions by three types of Metropolitan Statistical Areas (MSA)) equals the appropriate control total. (See Appendix A, "How the Survey Was Conducted," Table A9.) In this way, each half-sample can produce unbiased survey statistics based on roughly one-half of the data. Using different combinations of members from the 85 pairs, it is possible to produce a total of $2^{85} = 3.9 \times 10^{25}$ unique half-samples. Although desirable for good variance estimation, a large number of half-samples would be computationally infeasible. However, the method of balanced half-sample replication allows a small number of half-samples (approximately equal to the number of strata) to produce estimates of variance that are identical to estimates based on all possible unique half-samples for linear survey statistics. The use of ratio adjustments in RECS means that even a statistic giving the number of households in a category is not a linear statistic. For nonlinear survey statistics, the variance estimate computed using the method of balanced half-samples is approximately

equal to the variance estimate computed using all possible half-samples. With this balancing method, each half-sample is constructed by using an orthogonal matrix to control the selection of pair members from strata. For the RECS, 128 balanced half-samples were used in variance estimation.

The variances are estimated from the half-sample statistic in the following way. Let Y' be a survey estimate of the population value Y (for example, the total amount of electricity consumed in housing units). Then, the estimated variance of Y' is given by:

$$S_{Y'}^2 = (1/128) \sum_{i=1}^{128} (Y'_i - Y')^2,$$

where Y'_i is the i th half-sample estimate of Y . The standard error of Y' is given by:

$$S_{Y'} = \sqrt{S_{Y'}^2}.$$

The same procedure was used to estimate the variance of the number of housing units that have a certain characteristic. (For example, the number of housing units where the main space-heating fuel is natural gas.)

As mentioned previously in this section, and in Appendix A, "How the Survey Was Conducted," the national total number of households is not estimated from the survey results. The household weights are ratio adjusted so that the total weighted number of households equals the number obtained from the CPS. The same is true for the total number of households in the 12 cells mentioned in this section (four Census regions by three types of MSA designations). The variance estimation procedure used for RECS assumes that the CPS numbers are exact and are not subject to error. Any error in the CPS results can be considered as a bias in the RECS results and not as part of the sampling error for RECS. The weights for each half-sample are also constructed such that the national total and the total for the 12 cells match the CPS numbers. As a result, the half-sample estimate for the RSE of the national total of the number of households and the RSE's

for the totals in the 12 cells will always be zero. Also the half-sample estimate of the RSE will be close to zero whenever the statistic involved is a household count that is close to a control total. Examples of this are the national total for the number of households that use electricity and the number of households that have not received assistance for weatherization of their residence.

Row and Column Factors

The method of presenting the RSE's of a statistic in this report utilizes row and column factors. The row and column factors can be used to calculate an approximate RSE for each statistic.

To estimate the RSE of a statistic in the i th row and j th column of a particular table, the approximation $RSEA(i, j)$ for the original half-sample estimate $RSE(i, j)$ is given by the formula.

$$RSEA(i, j) = R(i) C(j)$$

where:

$R(i)$ is the RSE row factor given in the last column of the row i and,

$C(j)$ is the RSE column factor given at the top of column j .

The following example illustrates this procedure.

Using the fifth column of the table (Figure C1) labeled "Average Price" and the first row labeled "Northeast Region" gives an estimate of \$13.24 for the average cost of 1 million Btu of LPG in the Northeast Census Region. The RSE row factor is $R(1) = 10.84$. The RSE column factor is $C(5) = 0.404$. The approximate RSE for the estimate is, therefore,

$$RSEA(1, 5) = (10.84) (.404) = 4.38 \text{ percent.}$$

Figure C1. Use of RSE Row and Column Factors

Table 15. Liquefied Petroleum Gas Consumption and Expenditures for Northeast Region Households, 1987

Household Characteristics	Households (million)	Amount Used per Household (gallons)	Amount Used per Household (million Btu)	Expenditures per Household (dollars)	Average Price (dollars per million Btu)	RSE Row Factors
RSE Column Factors	1,385	1,274	1,274	1,101	0.404	
Northeast Region	1.1	180	16.5	218	13.24	10.84
Metropolitan Status						
Metropolitan	.7	166	15.1	204	13.50	19.02
Central City	Q	Q	Q	Q	Q	a
Outside Central City	.6	158	14.4	200	13.87	18.60
Nonmetropolitan	.4	202	18.5	239	12.91	13.19
LPG Paid by Household						
Yes	1.0	177	16.2	220	13.58	10.61
No	Q	Q	Q	Q	Q	a
Housing Structure						
Mobile Home	.3	155	14.1	164	11.59	20.38
Single Family	.7	183	16.8	237	14.17	11.57
Building of 2 or More Units	Q	Q	Q	Q	Q	a
Number of Rooms						
1 to 3	Q	Q	Q	Q	Q	a
4 to 5	.6	126	11.5	167	14.51	16.86
6 or More	.5	209	19.0	261	13.70	14.10
Measured Heated Area of Residence (square feet)						
Fewer than 1,000	.5	195	17.8	215	12.08	14.15
1,000 to 1,999	.3	156	14.2	202	14.22	21.95
2,000 or More	.3	184	16.8	243	14.49	19.53

R (Northeast Region) = 10.84
 C (Average Price) = 0.404

Approximate RSE (Average LPG Price in Northeast)
 = (10.84) • (0.404)
 = 4.38 Percent

Approximate Standard Error (Average LPG Price in Northeast)
 = (4.38/100) • (13.24)
 = 0.58 Dollars per Million Btu

Approximate 2 Standard Errors (95 Percent Confidence Interval)
 = (1.96) • (0.58)
 = 1.14 Dollars per Million Btu

Therefore, with 95 percent confidence, the average LPG price in the Northeast is between 12.10 and 14.38 dollars per million Btu (13.24 ± 1.14).

Source: Energy Information Administration, Office of Energy Markets and End Use, 1987 Residential Energy Consumption Survey.

The row and column factors are determined from a two-factor analysis of the table of RSE's on the basis of the equation,

$$\log RSEA(i, j) = m + a(i) + b(j).$$

The least squares estimates for this equation are given by:

$$m = \overline{(\log RSE)}$$

$$a(i) = \overline{(\log RSE)}_i - \overline{(\log RSE)}$$

$$b(j) = \overline{(\log RSE)}_j - \overline{(\log RSE)}$$

where:

$\overline{(\log RSE)}$ is the mean of log RSE (*i,j*) over all rows *i* and columns *j*,

$\overline{(\log RSE)}_i$ is the mean over all columns *j* for a particular row *i*, and

$\overline{(\log RSE)}_j$ is the mean over all rows *i* for a particular column *j*.

The row and column RSE factors are then computed as:

$$R(i) = \text{antilog}(m + a(i)) = \text{antilog}(\overline{(\log RSE)}_i)$$

$$C(j) = \text{antilog } b(j) =$$

$$\text{antilog} \left(\overline{(\log RSE)}_j - \overline{(\log RSE)} \right)$$

The RSE row factor, *R* (*i*), is the geometric mean of the RSE's in row *i*. The RSE column factor, *C* (*j*), is an adjustment factor with geometric mean equal to 1.0.⁹

The estimation procedure used to obtain the row and column factors does not use RSE's that are less than 1.0 percent or greater than 50.0 percent. In addition, if the statistic for a cell is not listed for any reason, the RSE for that cell is not used in the procedure. This convention is used because the product of the row and column factors frequently is an inaccurate estimate for these RSE's. Using these cells in the calculation of the

row and column factors may result in factors that give inaccurate RSE estimates for other cells.

Whenever a household count is a control total, its RSE is zero. An example is the cell in the first row and first column of Table 1. This cell contains an estimate of the national total of households as of November 1987. Because the RSE is zero, this cell was not used in the procedure used to determine the row and column factors. The RSE as estimated by the row-column calculations will overestimate the RSE for this cell and all other cells that contain control totals.

Determination of the Relative Standard Error for Ratios

The following equation provides an approximate RSE for ratios not presented in the tables. (A more accurate procedure for the case where the ratio involves two household counts where the numerator is a subset of the denominator is presented in *Housing Characteristics 1987 Appendix C*.)

$$RSE(X/Y) = \sqrt{[RSE(X)]^2 + [RSE(Y)]^2}$$

The following example illustrates this equation. The average price of LPG in the metropolitan area of the Northeast is 13.50 dollars per million Btu (See Table 15). The average price of LPG in the nonmetropolitan area of the Northeast is 12.91 dollars per million Btu. This gives an estimate of $13.50/12.91 = 1.05$ as the ratio of the metropolitan area LPG price to the nonmetropolitan area LPG price in the Northeast. The approximate RSE (as determined by row-column method) for the metropolitan area LPG price was 7.68 percent. The approximate RSE for the nonmetropolitan area LPG price was 5.33 percent. An estimate of the RSE of the ratio is:

$$RSE(X/Y) = \sqrt{(7.68)^2 + (5.33)^2} = 9.35.$$

The half-width for the 95 percent confidence interval is:

$$1.96 \times .0935 \times 1.05 = .19.$$

The confidence interval for the ratio is 1.05 (± 0.19).

⁹For detailed discussions of the accuracy of the RSE approximation, the procedure for estimating confidence intervals, and the statistical tests of hypotheses, see *Nonresidential Buildings Energy Consumption Survey: Commercial Buildings, Consumption and Expenditures, 1987* DOE/EIA-0318(83). (Washington, D.C., October 1986).

Determination of the Standard Error of the Difference Between Two Statistics

The procedure used to compute the standard error of the difference between two statistics follows:

$$SE_{x_1-x_2} = \sqrt{SE_{x_1}^2 + SE_{x_2}^2}.$$

This procedure assumes the two statistics are not correlated. Using the above example, the standard error of the average metropolitan area LPG price in the Northeast is 1.04 dollars per million Btu. (The RSE is 7.68 percent.) The standard error of the average nonmetropolitan area LPG price in the Northeast is

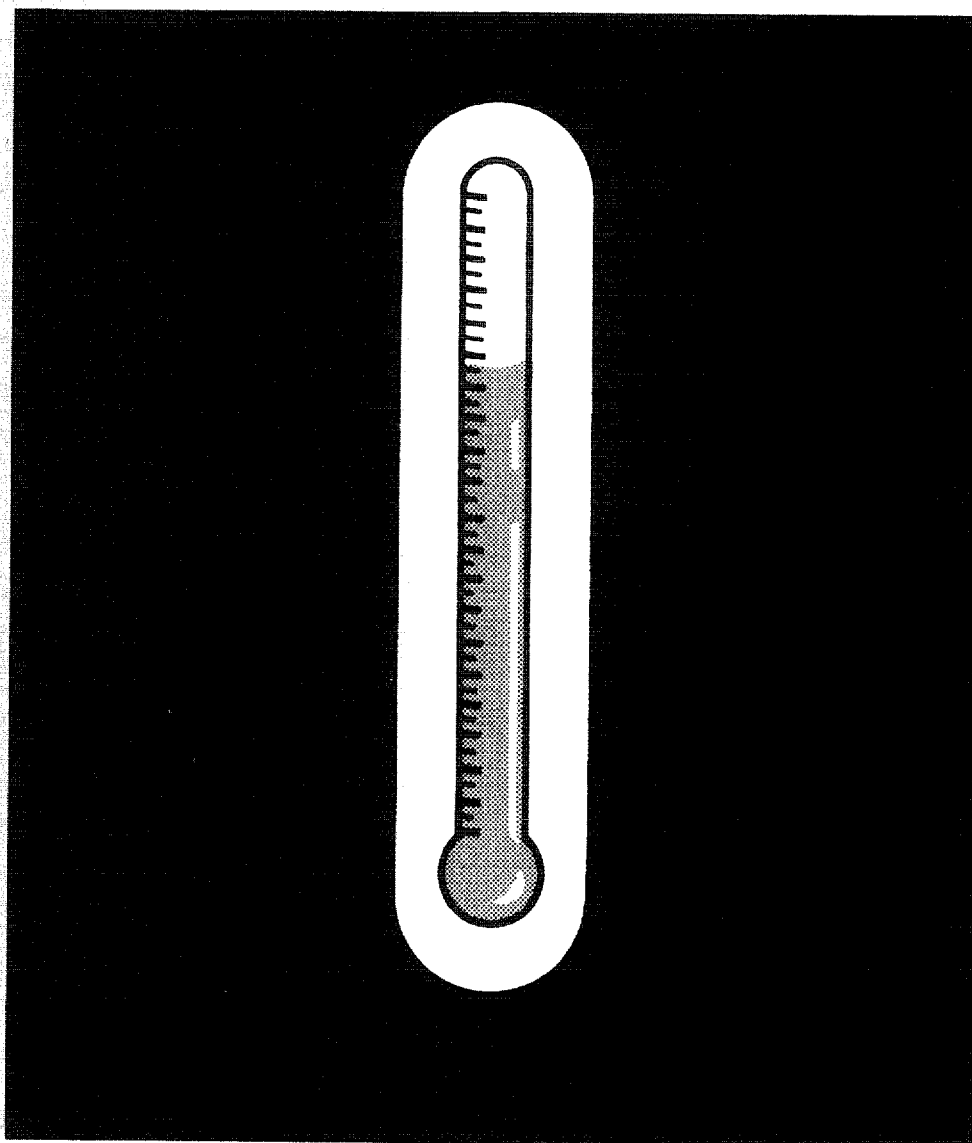
0.69 dollars per million Btu. (The RSE is 5.33 percent.) The difference between the average prices is 0.59 dollars per million Btu. The standard error of this difference is:

$$SE_{x_1-x_2} = \sqrt{(1.04)^2 + (0.69)^2} = 1.25$$

If 1.96 times the standard error is greater than the difference between the statistics, the difference is not statistically significant. In this example, 1.96 times the standard error equals 2.45 dollars per million Btu, while the difference equals 0.59 dollars per million Btu. Therefore, it can be said that there is not a statistically significant difference between the average price of LPG in metropolitan areas of the Northeast Census Region and the average price of LPG in the nonmetropolitan areas.

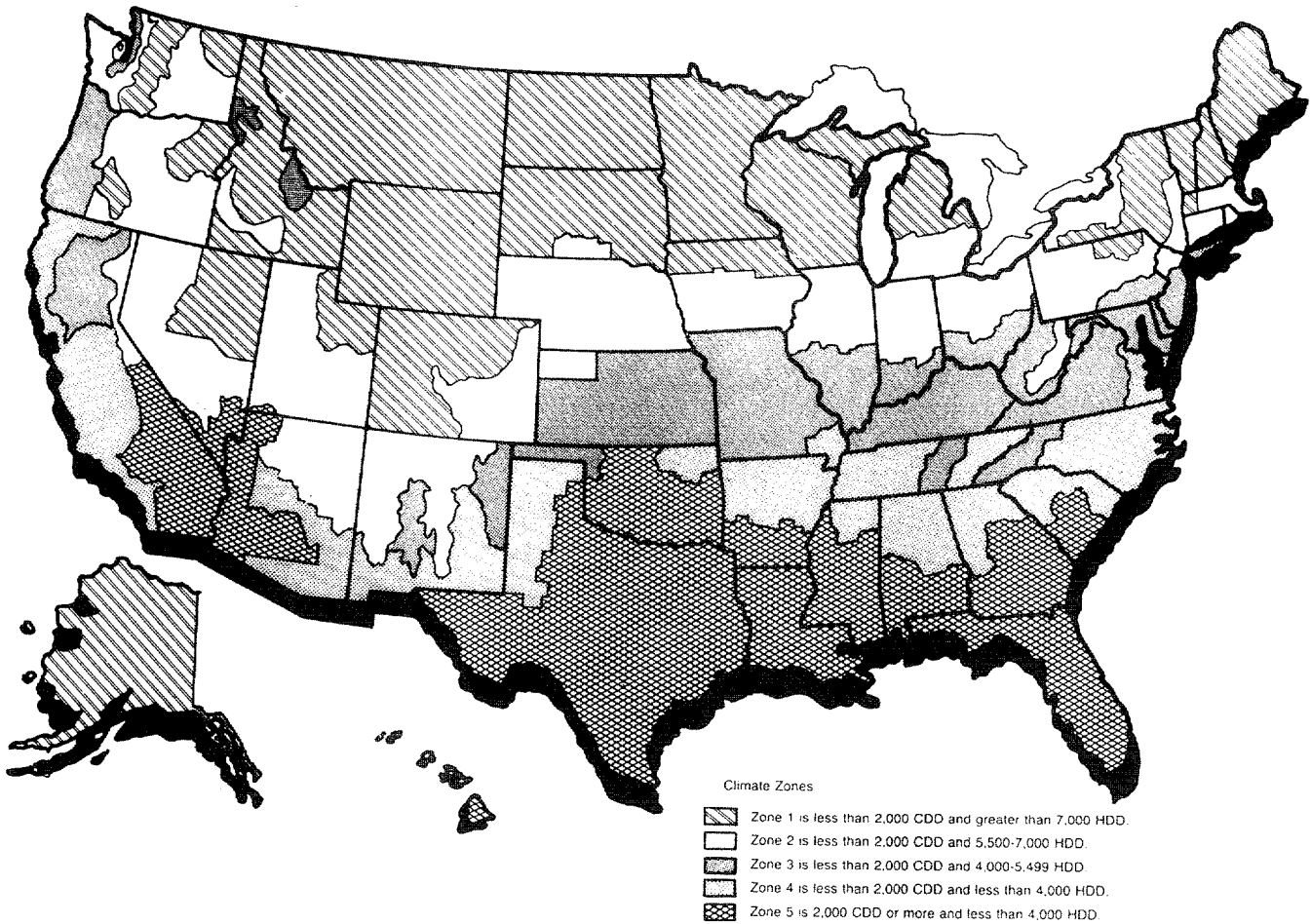
Appendix D

U.S. Climate Zone Map



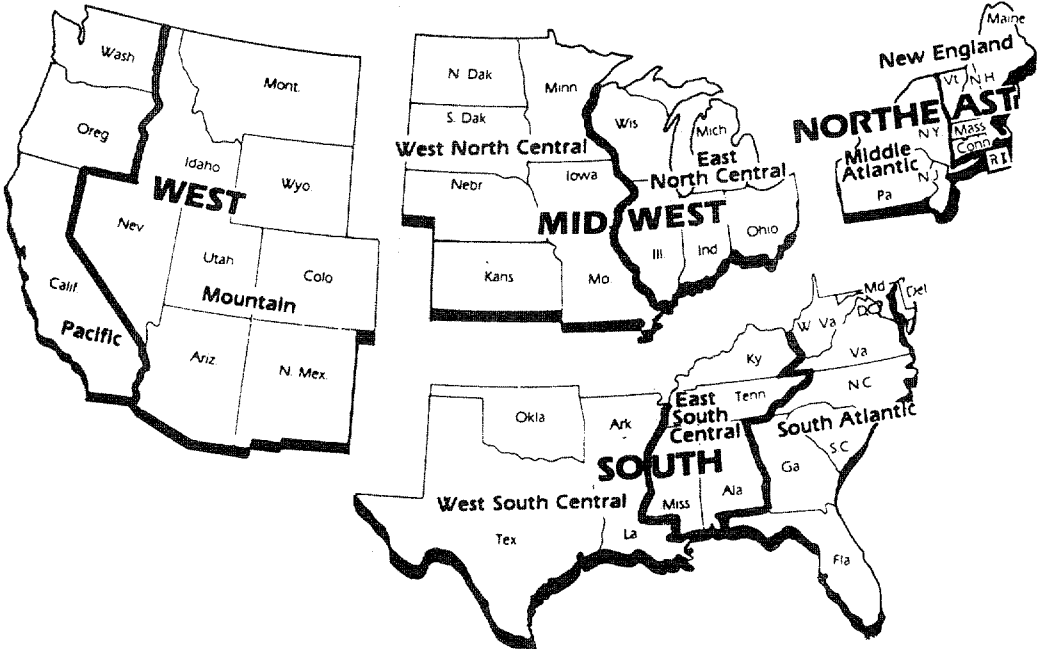
Appendix D

U.S. Climate Zone Map



Appendix E

U.S. Census Regions and Divisions



Appendix E

U.S. Census Regions and Divisions



Appendix F

Related EIA Publications on Energy Consumption



Appendix F

Related EIA Publications on Energy Consumption

These publications are available from the National Energy Information Center or the Superintendent of Documents. See the inside cover of this report on how to obtain copies of these publications. Please note that the prices quoted are subject to change.

In addition to the reports listed below, public use data tapes for the residential, residential transportation and commercial sectors are available from the National Technical Information Service (NTIS). To obtain information on how to order tapes, you may call NTIS at 703/487-4807.

Residential Energy Consumption Survey: Conservation; February 1980, DOE/EIA-0207/3, GPO Stock No. 061-003-00087-8, \$6.00.

Preliminary Conservation Tables from the National Interim Energy Consumption Survey; August 1979, DOE/EIA-0193/P (no GPO Stock No.).

Characteristics of the Housing Stock and Households: Preliminary Findings from the National Interim Energy Consumption Survey; October 1979, DOE/EIA-0199/P (no GPO Stock No.).

Residential Sector

Housing Characteristics

Housing Characteristics 1987; May 1989, DOE/EIA-0314(87), GPO Stock No. 061-003-00619-1, \$13.00.

Residential Energy Consumption Survey: Housing Characteristics 1984; October 1986, DOE/EIA-0314(84), GPO Stock No. 061-003-00499-7, \$12.00.

Residential Energy Consumption Survey: Housing Characteristics, 1982; August 1984, DOE/EIA-0314(82), GPO Stock No. 061-003-00393-1, \$7.00.

Residential Energy Consumption Survey: Housing Characteristics, 1981; August 1983, DOE/EIA-0314(81), GPO Stock No. 061-003-00330-3, \$6.50.

Residential Energy Consumption Survey: Housing Characteristics, 1980; June 1982, DOE/EIA-0314, GPO Stock No. 061-003-00256-1, \$11.00.

Residential Energy Consumption Survey: Characteristics of the Housing Stock and Households, 1978; February 1980, DOE/EIA-0207/2, GPO Stock No. 061-003-00093-2, \$4.25.

Consumption and Expenditures

Household Energy Consumption and Expenditures 1987, Part 1: National Data; October 1989, DOE/EIA-0321/1(87), GPO Stock No. 061-003-00635-3, \$15.00.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1984 Through March 1985, Part 1: National Data; March 1987, DOE/EIA-0321/1(84), GPO Stock No. 061-003-00519-5, \$9.50.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1984 Through March 1985, Part 2: Regional Data; May 1987, DOE/EIA-0321/2(84), GPO Stock No. 061-003-00528-4, \$17.00.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1982 Through March 1983, Part 1: National Data; November 1984, DOE/EIA-0321/1(82), GPO Stock No. 061-003-00411-3, \$7.00.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1982 Through March 1983, Part 2: Regional Data; December 1984, DOE/EIA-0321/2(82), GPO Stock No. 061-003-00414-8, \$9.50.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1981 Through March 1982, Part 1: National Data; September 1983,

DOE/EIA-0321/1(81), GPO Stock No. 061-003-00340-1, \$6.00.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1981 Through March 1982, Part 2: Regional Data; October 1983, DOE/EIA-0321/2(81), GPO Stock No. 061-003-00357-5, \$8.00.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1980 Through March 1981, Part 1: National Data; September 1982, DOE/EIA-0321/1(80), GPO Stock No. 061-003-00278-1, \$7.50.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1980 Through March 1981, Part 2: Regional Data; June 1983, DOE/EIA-0321/2(80), GPO Stock No. 061-003-00319-2, \$7.00.

Residential Energy Consumption Survey: 1979-1980 Consumption and Expenditures, Part I: National Data (Including Conservation); April 1981, DOE/EIA-0262/1, GPO Stock No. 061-003-00191-2, \$6.50.

Residential Energy Consumption Survey: 1979-1980 Consumption and Expenditures, Part II: Regional Data; May 1981, DOE/EIA-0262/2, GPO Stock No. 061-003-00189-1, \$8.50.

Residential Energy Consumption Survey: Consumption and Expenditures, April 1978 Through March 1979; July 1980, DOE/EIA-0207/5, GPO Stock No. 061-003-00131-9, \$7.50.

Single-Family Households: Fuel Oil Inventories and Expenditures: National Interim Energy Consumption Survey; December 1979, DOE/EIA-0207/1, GPO Stock No. 061-003-00075-4, \$3.50.

Other Publications on the Residential Sector

End-Use Consumption of Residential Energy (Article), pp. vii-xiv, *Monthly Energy Review*, July 1987, DOE/EIA-0035(87/07).

Residential Energy Consumption Survey: Trends in Consumption and Expenditures 1978-1984 June 1987, DOE/EIA-0482, GPO Stock No. 061-003-00535-7, \$12.00.

Residential Conservation Measures; July 1986, SR/EEUD/86/01 (no GPO Stock No.).

An Economic Evaluation of Energy Conservation and Renewable Energy Tax Credits; October 1985, Service Report (no GPO Stock No.).

Residential Energy Consumption and Expenditures by End Use for 1978, 1980, and 1981; December 1984, DOE/EIA-0458, GPO Stock No. 061-003-00415-6, \$4.50.

Weatherization Program Evaluation, SR-EEUD-84-1; August 1984 (available from the Office of the Assistant Secretary for Conservation and Renewable Energy, Department of Energy).

Residential Energy Consumption Survey: Regression Analysis of Energy Consumption by End Use; October 1983, DOE/EIA-0431, GPO Stock No. 061-003-00347-8, \$5.00.

National Interim Energy Consumption Survey: Exploring the Variability in Energy Consumption; July 1981, DOE/EIA-0272, GPO Stock No. 061-003-00205-5, \$5.00.

National Interim Energy Consumption Survey: Exploring the Variability in Energy Consumption--A Supplement; October 1981, DOE/EIA-0272/S, GPO Stock No. 061-003-00217-0, \$4.50.

Energy Use by U.S. Households; November 1980, DOE/EIA-0248 (brochure, no GPO Stock No.).

Residential Transportation Sector

Residential Transportation Energy Consumption Survey: Consumption Patterns of Household Vehicles 1985; April 1987, DOE/EIA-0464(85), GPO Stock No. 061-003-00521-7, \$8.50.

Residential Transportation Energy Consumption Survey: Consumption Patterns of Household Vehicles, 1983; January 1985, DOE/EIA-0464(83), GPO Stock No. 061-003-00420-2, \$4.50.

Residential Energy Consumption Survey: Consumption Patterns of Household Vehicles, Supplement: January 1981 to September 1981; February 1983, DOE/EIA-0328, GPO Stock No. 061-003-00297-8, \$4.75.

Residential Energy Consumption Survey: Consumption Patterns of Household Vehicles, June 1979 to December 1980; April 1982, DOE/EIA-0319 (no GPO Stock No.).

Commercial Sector

Characteristics of Buildings

Nonresidential Buildings Energy Consumption Survey: Characteristics of Commercial Buildings, 1986; September 1988, DOE/EIA-0246(86), GPO Stock No. 061-003-00580-2, \$16.00.

Nonresidential Buildings Energy Consumption Survey: Characteristics of Commercial Buildings, 1983; July 1985, DOE/EIA-0246(83), GPO Stock No. 061-003-00439-3, \$7.50.

Nonresidential Buildings Energy Consumption Survey: Characteristics of Commercial Buildings, 1983; A Supplemental Reference, DOE/EIA-M008, \$22.95. Available from the National Technical Information Service (NTIS), Order No. DE-85015581.

Nonresidential Buildings Energy Consumption Survey: Fuel Characteristics and Conservation Practices; June 1981, DOE/EIA-0278, GPO Stock No. 061-003-00200-5, \$9.00.

Nonresidential Buildings Energy Consumption Survey: Building Characteristics; March 1981, DOE/EIA-0246, GPO Stock No. 061-003-00171-8, \$6.50.

Consumption and Expenditures

Nonresidential Buildings Energy Consumption Survey: Commercial Buildings Consumption and Expenditures 1986; May 1989, DOE/EIA-0318(86), GPO Stock No. 061-003-00613-2, \$19.00.

Nonresidential Buildings Energy Consumption Survey: Commercial Buildings, Consumption and Expenditures 1983; September 1986, DOE/EIA-0318(83), GPO Stock No. 061-003-00496-2, \$13.00.

Nonresidential Buildings Energy Consumption Survey: 1979 Consumption and Expenditures, Part 1: Natural Gas and Electricity; March 1983, DOE/EIA-0318/1, GPO Stock No. 061-003-00298-6, \$9.50.

Nonresidential Buildings Energy Consumption Survey: 1979 Consumption and Expenditures, Part 2: Steam, Coal, Fuel Oil, LPG, and Total Fuels; December 1983, DOE/EIA-0318(79)/2, GPO Stock No. 061-003-00366-4, \$6.00.

Industrial Sector

Manufacturing Energy Consumption Survey: Fuel Switching Capability, 1985; December 1988, DOE/EIA-0515(85), GPO Stock No. 061-003-00601-9, \$3.50.

Manufacturing Energy Consumption Survey: Methodological Report, 1985; November 1988, DOE/EIA-0514(85), GPO Stock No. 061-003-00595-1, \$6.00.

Manufacturing Energy Consumption Survey: Consumption of Energy, 1985; November 1988, DOE/EIA-0512(85), GPO Stock No. 061-003-00594-2, \$6.00.

Report on the 1980 Manufacturing Industries' Energy Consumption Study and Survey of Large Combustors; February 1983, DOE/EIA-0358, GPO Stock No. 061-003-00293-5, \$5.00.

Industrial Energy Consumption, "Survey of Large Combustors: Report on Alternate Fuel-Burning Capabilities of Large Boilers in 1979"; February 1982, DOE/EIA-0304, GPO Stock No. 061-003-0233-1, \$2.50.

Methodological Report of the 1980 Manufacturing Industries Survey of Large Combustors (EIA-463); March 1982, DOE/EIA-0306 (no GPO Stock No.).

Cross-Sector

Natural Gas: Use and Expenditures; April 1983, DOE/EIA-0382, GPO Stock No. 061-003-00307-9, \$5.50.

Planned Publications

Household Vehicles Energy Consumption 1988; planned for Feb. 1990.

Manufacturing Energy Consumption Survey: Energy Efficiency in Manufacturing, 1985; planned for Jan. 1990.

Public Use Tapes

Residential and Residential Transportation Sectors

Residential Energy Consumption Survey: 1987 and Residential Transportation Energy Consumption Survey, 1988; Planned for March 1990.

Residential Energy Consumption Survey: 1984 and Residential Transportation Energy Consumption Survey, 1985; Order No. PB87-186540/HAA.

Residential Energy Consumption Survey: 1982 and Residential Transportation Energy Consumption Survey, 1983; Order No. PB85-221760/HAA.

Residential Energy Consumption Survey: Housing Characteristics, 1981; Consumption and Expenditures, 1981-1982; Monthly Billing Data; Order No. PB84-120476/HAA.

Residential Energy Consumption Survey: Consumption and Expenditures, 1980-1981; Monthly Billing Data; Order No. PB84-166230/HAA.

Residential Energy Consumption Survey: Housing Characteristics, Annualized Consumption and Expenditures, 1980-1981; Order No. PB83-199554/HAA.

Residential Energy Consumption Survey: Household Transportation Panel Monthly Gas Purchases and Vehicle and Household Characteristics, 6/79-9/81; Order No. PB84-162452/HAA.

Residential Energy Consumption Survey: Household Screener Survey, 1979-1980; Order No. PB82-114877/HAA.

Residential Energy Consumption Survey: Household Monthly Energy Consumption and Expenditures, 1978-1979; Order No. PB82-114901/HAA.

National Interim Energy Consumption Survey (Residential), 1978; Order No. PB81-108714/HAA.

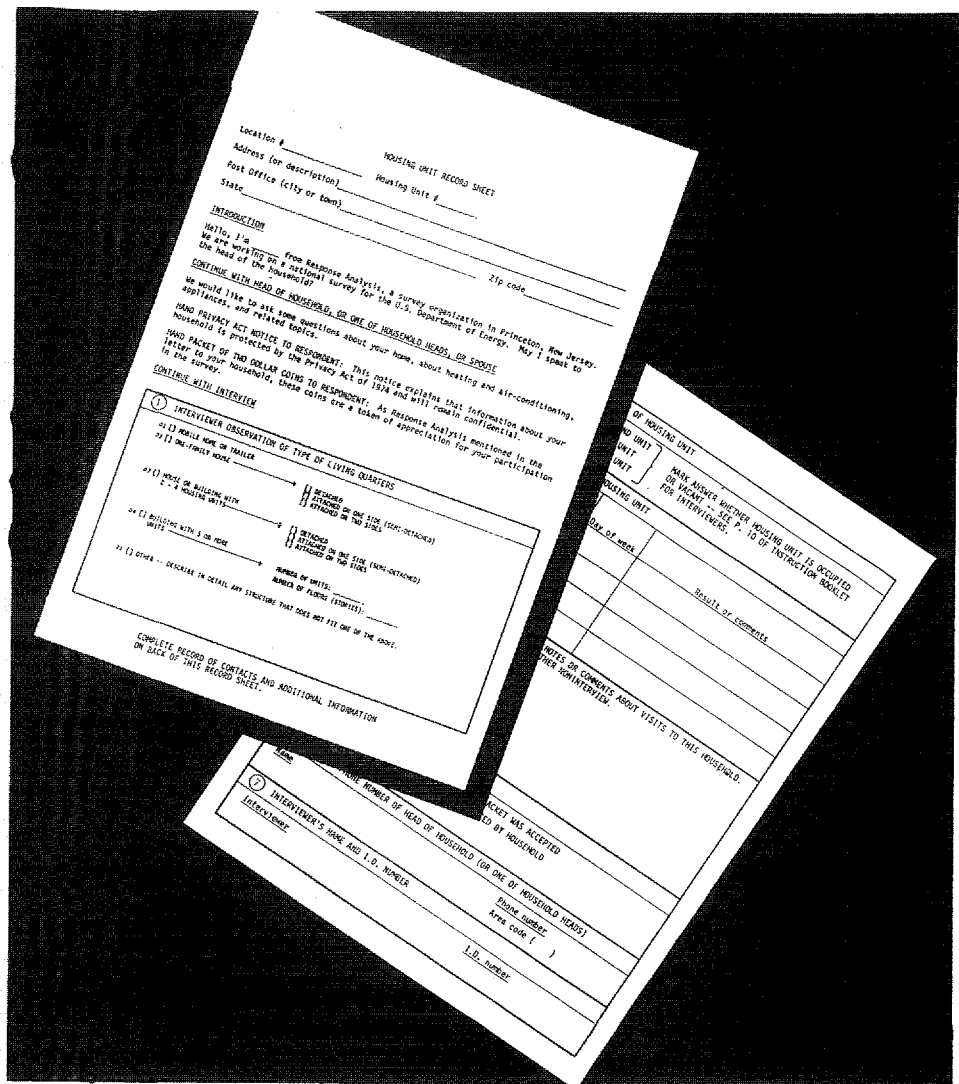
Commercial Sector

Nonresidential Buildings Energy Consumption Survey: 1986 Data; Order No. PB90-500034, \$210.

Nonresidential Buildings Energy Consumption Survey: 1979 and 1983 Data; Order No. PB88-245162.

Appendix G

Survey Forms Titles



Appendix G

Survey Forms Titles

This appendix contains titles of the data collection forms used in the 1987 Residential Energy Consumption Survey (RECS). Forms EIA-457A through C were used in the housing portion of the RECS. Forms EIA-457D through G were mailed to energy suppliers.

- EIA-457A Housing Unit Record Sheet (actual form was pink).
- EIA-457B Household Questionnaire (actual form had a blue cover).
- EIA-457C Rental Agent Form (actual form was white).
- EIA-457D Liquefied Petroleum Gas (actual form was blue).
- EIA-457E Electricity Usage (actual form was yellow).
- EIA-457F Utility Gas Usage (actual form was pink).
- EIA-457G Fuel Oil or Kerosene (actual form was green).

See the *Household Energy Consumption and Expenditures 1987, Part 1: National Data* report (published October 1989, DOE/EIA-0321/1(87)) for copies of the forms listed above.

Glossary

Active Solar: As an energy source, energy from the sun collected and stored using mechanical pumps or fans to circulate heat-laden fluids or air between solar collectors and housing unit. Examples include the use of solar collectors for water or space heating. Data on the passive collection of solar energy, such as by trombe walls, were not collected on the 1987 RECS.

Adjusted Electricity: A measurement of electricity that includes the approximate amount of energy used to generate electricity. To approximate the adjusted amount of electricity, the site-value of the electricity is multiplied by a factor of three. This conversion factor of 3 is a rough approximation of the Btu value of raw fuels used to generate electricity in a steam-generation power plant. In this report, electricity is represented as site energy. See **Site Energy** and **Btu Conversion Factors**.

Aggregate Ratio: The ratio of two population aggregates (totals). For example, the aggregate expenditures per household is the ratio of the total expenditures in each category to the total number of households in the category. See **Mean**.

Air-Conditioned Rooms: The number of rooms the air-conditioning equipment is capable of cooling when the equipment is used. The question "How many rooms in your house/apartment can be cooled by your air conditioning?" refers to rooms that could be cooled if the air-conditioning equipment were used. There are no cases in the RECS data set of households with air-conditioning equipment that cooled zero rooms, but there are cases that have zero end-use energy for air conditioning because they did not use their air-conditioning equipment. See **Air-Conditioning Equipment**.

Air Conditioning: Air conditioning is one of four main end-use categories in this report. It is defined as the use of energy to cool the air in a housing unit by a refrigeration unit driven by electricity or gas. This definition excludes the use of energy to drive fans, blowers, or evaporative cooling systems ("Swamp Coolers") that are not connected to a refrigeration unit. It does include the use of electricity to drive fans that are part of a central air-conditioning system. Zero end-use energy for air conditioning is assigned to households that have air-conditioning equipment, but reported that the equipment was not used during the summer preceding the interview. See **End-Use**.

Air-Conditioning Equipment: A central air-conditioning system with ducts, and/or window or wall air conditioners that cools the air in a housing unit by a refrigeration unit driven by electricity or natural gas. Excluded are fans, blowers, or evaporative cooling systems ("swamp coolers") that are not connected to a refrigeration unit. Air-conditioning units that were not in working condition or were not used, are still included in RECS if they are in place in the housing unit. See **Air Conditioning**, **Air-Conditioned Rooms**, and **Refrigeration Unit**.

Air-Conditioning Intensity: The ratio of air-conditioning consumption or expenditures to square footage of cooled floorspace and cooling degree-days (base 65 degrees F). This intensity provides a way of comparing different types of housing units and households by controlling for differences in housing unit size and weather conditions. The square footage of cooled floorspace is equal to the product of the total square footage times the ratio of the number of rooms that could be cooled to the total number of rooms. If the entire housing unit is cooled, the cooled floorspace is the same as the total floorspace. The ratio is calculated on a weighted, aggregate basis according to this formula:

$$\text{Air-Conditioning Intensity} = \frac{\text{Btu for Air Conditioning}}{(\text{Cooled Square Feet} * \text{Cooling Degree-Days})}$$

See **Air Conditioning**, **Air-Conditioned Rooms**, and **Cooling Degree-Days**.

All-Electric Home: A residence in which electricity is used for the main source of energy for space heating, water heating, and electricity is used for space heating, water heating, and cooking. Other fuels may be used for supplementary heating or other purposes.

Appliances: Appliance operation is one of four main end-use categories in this report. It is defined as the use of energy for all uses except those covered by space heating, water heating, and air conditioning. This includes energy used in refrigerators, freezers, lights, televisions, personal computers, washing machines, and most small appliances. Special energy uses that are included in appliance usage are energy used to heat food, heat water for cooking, heat water for hot drinks, heat air to dry clothes, heat water for a swimming pool, heat water in a water bed, operate fans for a central forced-air space-heating system, and operate fans, blowers, or an evaporative cooling system (swamp coolers) not associated with air-conditioning equipment. See **End-Use**.

Appliances Used: Appliances possessed and used by the household during the year. Appliances possessed by the household but not used are not counted. Appliances loaned to the household for its regular use are included. Appliances temporarily not in working condition, but generally used by the household are included only if a repair person has been called or the appliance has been taken to a repair shop. The following list of appliances were asked specifically in the RECS: refrigerator, swimming pool, hot tub or jacuzzi heaters, stove top burners, ovens (excluding toaster ovens), microwave ovens, outdoor gas grills, clothes washers, dishwashers, clothes dryers, outdoor gas lights, dehumidifiers, humidifiers, evaporative coolers, fans, electric blankets, water-bed heaters, and television sets. Swimming pool, hot tub or jacuzzi heaters are included only if they are for the exclusive use of the housing unit; these heaters that are for the use of many resident households (such as those in apartment buildings, condominiums, or cooperatives) are excluded. The "range" (stove-top burners) and "oven" are considered two separate appliances although they are often purchased as one appliance. See **Refrigerator** and **Evaporative Cooler**.

Assistance for Heating in Winter: Indicates the household answered "yes" to whether the household received assistance from the Low-Income Home Energy Assistance Program (LIHEAP) between October, 1986 and September, 1987. The purpose of LIHEAP was to provide assistance to low-income households to offset the rising costs of home energy that are excessive in relation to household income. The most recent report on the program is found in the U.S. Department of Health and Human Services', *Low-Income Home Energy Assistance Program: Report to Congress for Fiscal Year 1987*, July 21, 1988. Copies are available from: Office of Energy Assistance, Office of Community Services, 370 L'Enfant Promenade, S.W., Washington, D.C. 20447.

Assistance for Weatherization of Residence: The household received services free, or at a reduced cost, from the Federal, State, or local Government between October 1, 1986 and September 30, 1987. Any of the following services could have been received:

- a. Furnace tuneup and/or modifications,
- b. Insulation around the hot water heater,
- c. Insulation in the attic, outside wall, or basement/crawlspace below the floor of the house,
- d. Repair of broken furnace,
- e. Repair of broken windows or doors to keep out the cold or hot weather,
- f. Storm doors or windows added,
- g. Weather stripping or caulking around any windows or doors to the outside,
- h. Other home energy-saving devices.

Authorization Form: A form, to be signed by the respondent authorizing energy supplier companies that serve the respondent to release information on the amounts and costs of energy consumed in the housing unit during a specified period. See **Energy Supplier** and **Appendix A**, "How the Survey Was Conducted."

Availability of Natural Gas in the Neighborhood: Respondents who did not use natural gas were asked "Is gas from underground pipes available in this neighborhood?" Because respondents were not provided with a definition of "available" or "neighborhood," some variation is to be expected in what these concepts meant to each respondent. The intent of this question is to determine whether a residence could be hooked up to a gas line.

Average Number: See **Aggregate Ratio and Mean**.

Billing Period: The time between meter readings. It does not refer to the time when the bill was sent or when the payment was to have been received. In some cases, the billing period is the same as the billing cycle that corresponds closely (within several days) to meter-reading dates. For fuel oil and LPG, the billing period is the number of days between fuel deliveries.

Block-Rate Structure: An electric rate schedule with a provision for charging a different unit cost for various increasing blocks of demand for energy. A reduced rate is charged on succeeding blocks.

Btu (British thermal unit): The amount of energy required to raise the temperature of 1 pound of water by 1 degree Fahrenheit at or near 39.2 degrees Fahrenheit and 1 atmosphere of pressure. One Btu is about equal to the heat given off by a blue-tip match. See **Btu Conversion Factors**.

Btu Conversion Factors: For this report, Btu conversion factors for site energy were as follows:

Electricity	3,412	Btu/kilowatthour
Natural Gas	1,031	Btu/cubic foot
Fuel Oil No. 1	135,000	Btu/gallon
Kerosene	135,000	Btu/gallon
Fuel Oil No. 2	138,690	Btu/gallon
LPG (propane)	91,330	Btu/gallon
Wood	20 million	Btu/cord

Other conversion factors used in this report include:

1 therm = 100,000 Btu
1 barrel = 42 gallons

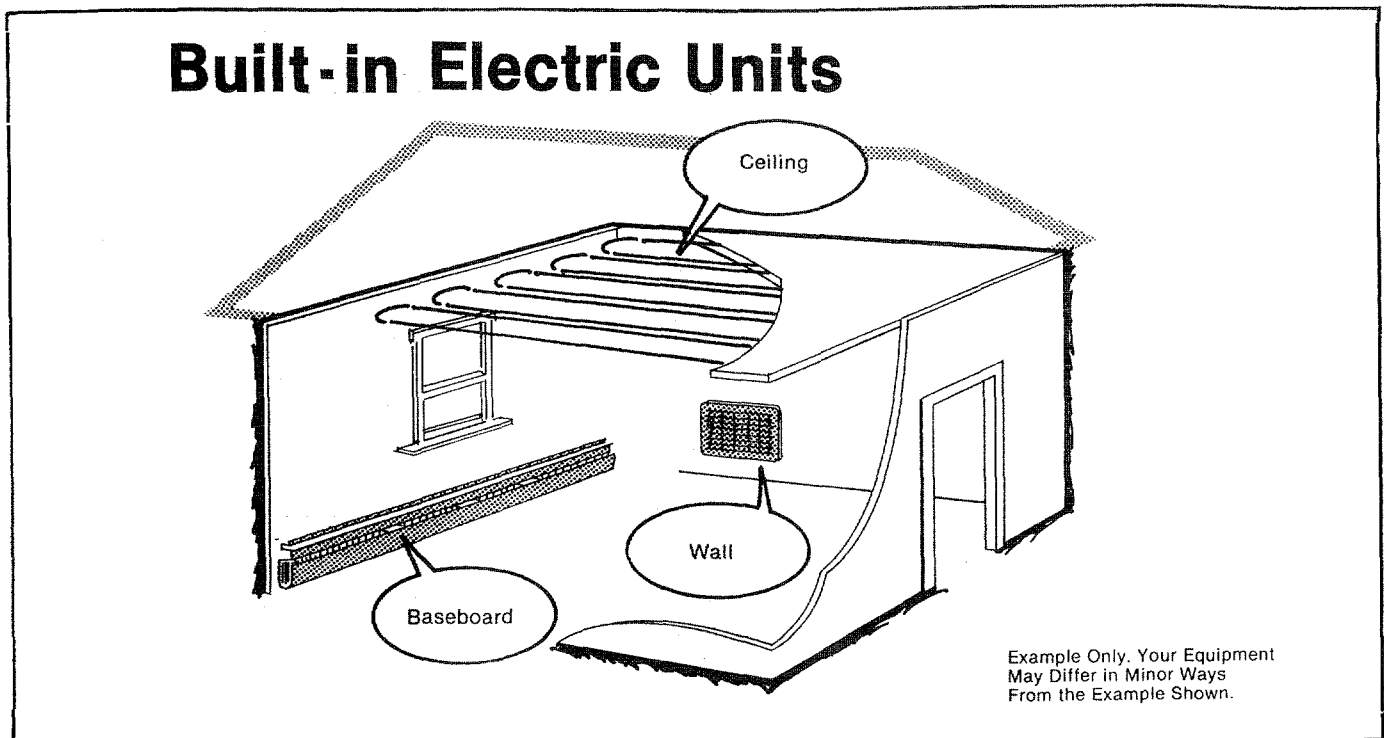
Because almost all LPG reported by the fuel suppliers was propane, the LPG conversion factor is that for propane. See **Wood Conversion to Btu, Site Energy, and Conversion Factor**.

Budget Plan: An agreement between the household and the utility company or fuel supplier that allows the household to pay the same amount for fuel each month for a number of months.

Building of 2-4 Units: See **Housing Structure**.

Building of 5 or More Units: See **Housing Structure**.

Built-in Electric Units: An individual-resistance electric-heating unit that is permanently installed in the floors, walls, ceilings, or baseboards and is part of the electrical installation of the building. Electric-heating devices that are plugged into an electric socket or outlet are not considered built in. See **Space-Heating Equipment**.



CDD: See **Cooling Degree-Days**.

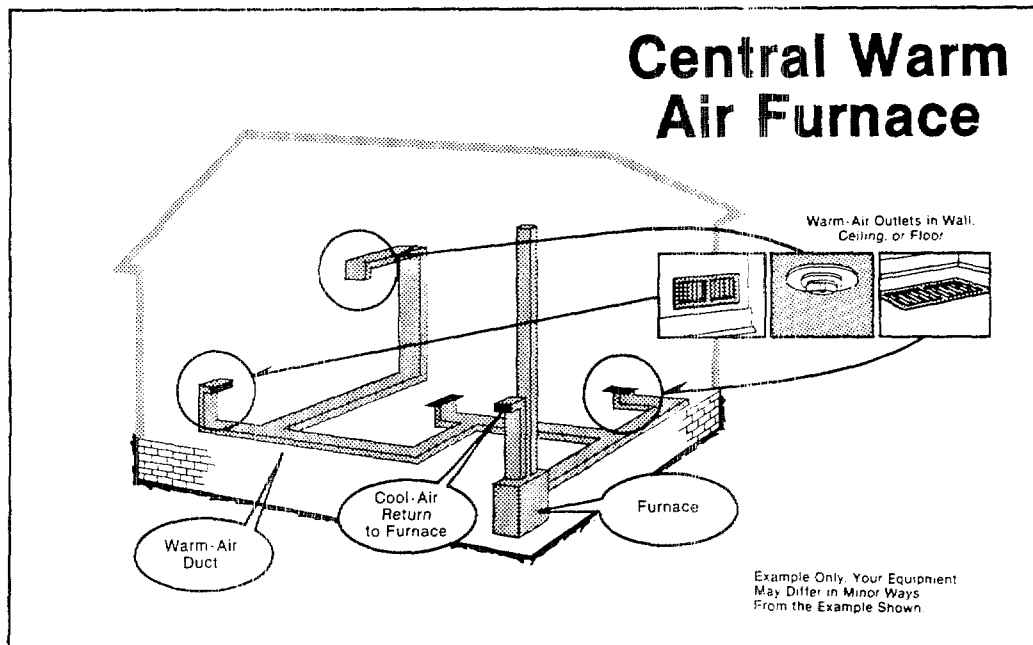
Census Division: A geographic area consisting of several States defined by the U.S. Department of Commerce, Bureau of the Census. See the map in **Appendix E**, "U.S. Census Regions and Divisions." The States are grouped into nine divisions and four regions:

Region	Division	States
Northeast	New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont
	Middle Atlantic	New Jersey, New York, and Pennsylvania
Midwest	East North Central	Illinois, Indiana, Michigan, Ohio, and Wisconsin
	West North Central	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota
South	South Atlantic	Delaware, the District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia
	East South Central	Alabama, Kentucky, Mississippi, and Tennessee
	West South Central	Arkansas, Louisiana, Oklahoma, and Texas
West	Mountain	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming
	Pacific	Alaska, California, Hawaii, Oregon, and Washington

Census Region: See **Census Division** and the map in **Appendix E**, "U.S. Census Regions and Divisions."

Central City: Usually one or more legally incorporated cities within the Metropolitan Statistical Area (MSA) that is significantly large by itself or large relative to the largest city in the MSA. Additional criteria for being classified central city include having at least 75 jobs for each 100 employed residents and having at least 40 percent of the resident workers employed within the city limits. Every MSA has at least one central city, which is usually the largest city. Central cities are commonly regarded as relatively large communities with a denser population and a higher concentration of economic activities than the outlying or suburban areas of the MSA. "Outside Central City" are those parts of the MSA that are not designated as central city. See **Metropolitan**.

Central Warm-Air Furnace: A central combustor or resistance unit--generally using gas, fuel oil, or electricity--that provides warm air through ducts leading to the various rooms in the housing unit. Heat pumps are not included in this category. A forced-air furnace is one in which a fan is used to force the air through the ducts. In a gravity furnace, air is circulated by gravity, relying on the natural flow of warm air up and cold air down. The warm air rises through ducts and the cold air falls through ducts that return it to the furnace to be reheated. This completes the circulation cycle.



Climate Zone: One of five climatically distinct areas, defined by long-term weather conditions affecting the heating and cooling loads in buildings. The zones were developed by the Energy End Use Division from seven distinct climate categories originally identified by the American Institute of Architects (AIA) for the U.S. Department of Energy and the U.S. Department of Housing and Urban Development. The zones were determined according to the 30-year average (1951-1980) of the annual heating and cooling degree-days (base 65 degrees F). The zones are defined as follows:

AIA Group	EEUD Climate Zone	Average Annual Cooling Degree-Days	Average Annual Heating Degree-Days
1	1	Under 2,000	Over 7,000
2	2	Under 2,000	5,500 to 7,000
3	3	Under 2,000	4,000 to 5,499
4	4	Under 2,000	2,000 to 3,999
5	4	Under 2,000	Under 2,000
6	5	2,000 or more	Under 2,000
7	5	2,000 or more	2,000 to 3,999

An individual household was assigned to a climate zone according to the 30-year average annual degree-days for an appropriate nearby weather station. See **Heating Degree-Days (HDD)**, **Cooling Degree-Days (CDD)**, and **NOAA Division**.

Coal: A combustible mineral substance (carbonized vegetable matter); in this report, the term includes its derivative (formed by destructive distillation or imperfect combustion) coke. This report contains statistics on the number of households using coal and their consumption of other fuels; however, no data were collected on the consumption of coal. See **Fuel**.

Condominium: A type of ownership that enables a person to own an apartment or house in a project of similar units. The owner has his/her own deed and, most likely, his/her own mortgage on the unit. The owner also holds a common or joint ownership in all common areas, such as hallways, entrances, and elevators. Ownership may cover one-family houses, row houses, and townhouses as well as apartments.

Consumption: The amount of electricity or natural gas used by, or delivered to, the household during a 365-day period. For fuel oil, kerosene, and LPG, the quantity represents fuel purchased, **not** fuel consumed. If the level of fuel in the tank was the same at the beginning and end of the annual period, then the quantity consumed would be the same as the quantity purchased. Measurements or reports of the level of fuel in the tank were not included in the data collection. The time period for the energy consumption in this report is January through December 1987.

Control Total: The number of elements in the population or a subset of the population. The sample weights for the observed elements in a survey are adjusted so that they add up to the control total. The value of a control total is not obtained from the survey, it is obtained from an outside source. For the RECS, the control totals are given by the number of households in one of the 12 cells by categorizing households by the four Census regions and by three categories of metropolitan status (Metropolitan Statistical Area--central city, Metropolitan Statistical Area--outside central city, and non-Metropolitan Statistical Area). The control totals were obtained from the Current Population Survey. See Table A9, in **Appendix A**, "How the Survey Was Conducted."

Conversion Factor: A number which translates units of one system into corresponding values of another system. Conversion factors are used to translate physical units of measures for various fuels into Btu equivalents. See **Btu Conversion Factors**.

Cooking Stove: A stove built for preparing food. In this survey it may be used as the main heating equipment. The range (stove-top burners) and oven are considered two separate appliances in this survey. See **Main Heating Equipment and Appliances Used**.

Cooling Degree-Days (CDD): A measure of how hot a location was over a period of time, relative to a base temperature. In this report, the base temperature is 65 degrees Fahrenheit, and the period of time is one year. The cooling degree-days for a single day is the difference between that day's average temperature and the base temperature, if the daily average is greater than the base; and zero, if the daily temperature is less than or equal to the base temper-

ature. The average daily temperature is the mean of the maximum and minimum temperatures for a 24-hour period. Cooling degree-days are determined by subtracting 65 from the average daily temperature. For example, a day with an average temperature of 85 degrees F has 20 cooling degree-days ($85 - 65 = 20$), while a day with an average temperature of 65 degrees F or lower has zero. After being calculated for each day, the number of cooling degree-days can be summed over a larger unit of time (a month, a year).

In 1987, for the first time in the RECS, cooling degree-days for households were taken from records of an appropriate nearby weather station. In previous surveys, weather data were assigned to households according to the NOAA division in which the household was located. See **NOAA Division and Climate Zone**.

Elderly: Households with a householder age 60 years or older. Nonelderly households have a householder age 59 years or younger.

Electricity: Metered electric power supplied by a central utility company to a residence via underground or above-ground power lines. It does not refer to electricity generated on site for the exclusive use of a residence. When a residence has its own generating capability, the fuel used for the generator will be specified. The Btu equivalent for electricity used in this report is the **site energy** or the energy value as received by the household. See **Btu Conversion Factors, Site Energy, and Adjusted Electricity**.

Electricity Paid by Household: The household paid the electric utility company directly for all household uses of electricity (such as water heating, space heating, air-conditioning, cooking, lighting, and operating appliances.) Bills paid by a third party are not counted as paid by the household. See **Electricity**.

End Use: A function for which energy sources or fuels are used in the household. In this report, four main end-use categories were estimated: space heating, air conditioning, water heating and appliance usage. The amount of energy used for these end uses is estimated by means of a nonlinear regression technique, rather than by using metered data. See **Space Heating, Air Conditioning, Water Heating, Appliances, and Metered Data**.

Energy Supplier: Fuel companies supplying electricity, natural gas, fuel oil, kerosene or LPG to the household. See **Authorization Form and Appendix A, "How the Survey Was Conducted."**

Estimated Bill: A set of charges for a fuel, calculated by the supplier when the meter is not read. The estimate may be based on one or more of the following factors: past usage, usage by similar households, and weather data.

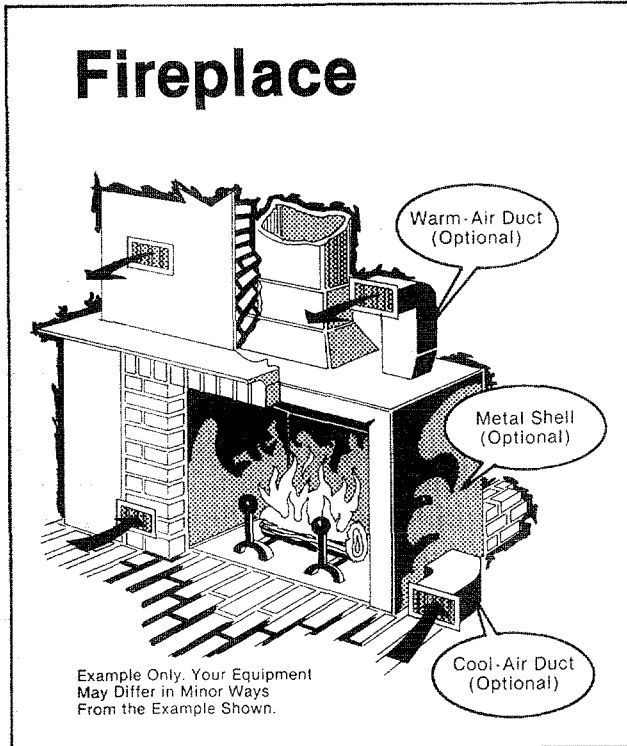
Evaporative Cooler (Swamp Cooler): A type of cooling equipment using evaporation of water to cool air. This type of equipment is commonly found in warm, dry climates. It does **not** cool air by use of a refrigeration unit, so it is not considered air-conditioning equipment in this report. See **Appliances Used**.

Expenditures: Funds spent for the energy consumed in, or delivered to, a housing unit during a given period of time. For this report, all expenditure statistics are presented on an annual basis, for calendar year 1987. The total dollar amount includes State and local taxes, but excludes merchandise repairs, or special service charges. For households on a budget plan, the expenditures are for the actual consumption. Electricity and natural gas expenditures are for the amount of those energy sources consumed. Fuel oil, kerosene, and LPG expenditures are for the amount of fuel purchased, which may differ from the amount of fuel consumed (See **Consumption**). For households that do not pay to their fuel supplier directly, the expenditures for fuels are estimated and included in the tables. In 1987, for 19 percent of the households, the cost of one or more fuels was included in a tenant's rent or paid by someone outside of the household.

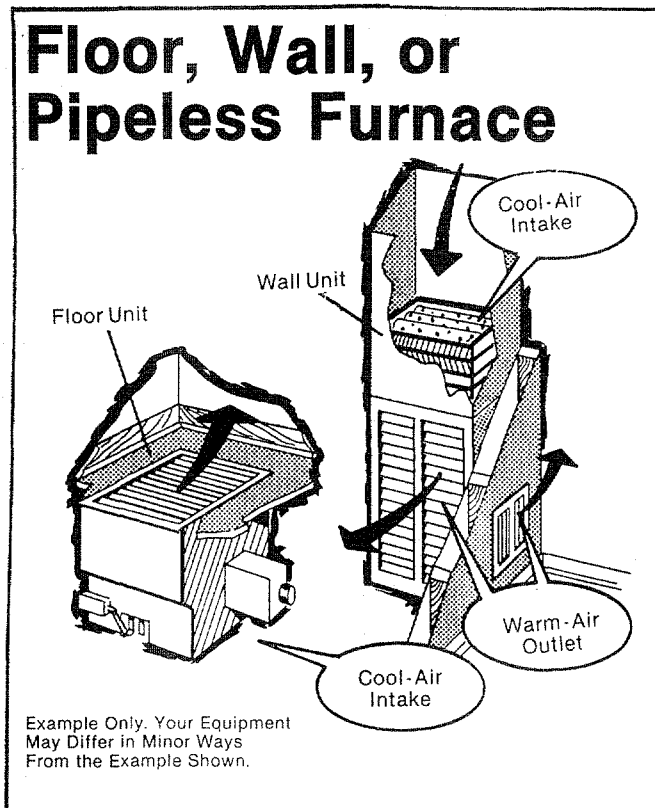
Expenditures as a Percentage of Income: The household energy expenditures divided by the family's income. The median percentage is the percentage of income spent on energy for the middle household, when the households are ranked by the percentage they spend on energy. That is, 50 percent of the weighted households in the cell spend a lower percentage on energy than the median value. See **Median**.

Family Income: The total combined income (before taxes and deductions) of all members of the family from all sources, for the 12 months before the interview. It includes wages, salaries, tips, commissions, and income from Social Security, pensions, interest, dividends, rent, public assistance, and unemployment insurance. This definition includes the total income of all family members who lived in the household during the 12 months before the interview, regardless of whether they were living there at the time of the interview. Income of nonfamily members of the household is not included. "Family" includes the following types of relationships: mother, father, sister, brother, son, daughter, father-in-law, uncle, aunt, niece, grandchild, foster child (and similar relationships).

Fireplace: Usually a masonry unit which burns wood, that is built into the wall of a house. Fireplaces in mobile homes are included. A fireplace must have a permanent chimney. Fireplaces may have glass doors or metal shields to cover the opening into the room. Accessories such as convective grates or radiant grates may be present to increase the efficiency of the fireplace. A free-standing fireplace that can be detached from its chimney is a heating stove. See **Heating Stove**.



Floor, Wall, or Pipeless Furnace: One of three types of space-heating equipment designed to warm the rooms of a housing unit. A floor furnace is located below the floor and delivers heated air to the room immediately above, or (if under a partition) to the room on each side. A wall furnace is installed in a partition or in an outside wall and delivers heated air to the rooms on one or both sides. A pipeless furnace is installed in a basement and delivers heated air through a large register in the floor of the room or hallway immediately above. See **Main Heating Equipment**.



Fossil Fuels: Sources of energy extracted from the earth. In this report, fossil fuels are natural gas, fuel oil, kerosene, and liquefied petroleum gas. See *Natural Gas, Fuel Oil, Kerosene, and Liquefied Petroleum Gas*.

Fuel: The primary fuel delivered to a residential site. It may be converted to some other form of energy at the site. In this report, electricity is included as a fuel. Other primary fuels are coal, fuel oil, kerosene, liquefied petroleum gas (LPG), natural gas, and solar collectors. Consumption and expenditure data were not collected for coal or solar applications.

Fuel Oil: A liquid petroleum product less volatile than gasoline, used as an energy source. In this report, fuel oil includes No. 1, No. 2, or No. 4 grade fuel oil or residual oil that is burned for space-heating or water-heating purposes. No. 1 distillate fuel oil is a form of heating oil used mostly as a blending stock to assure that heavier grades of fuel flow under severe cold weather conditions. No. 2 distillate collectively refers to No. 2 heating oil and No. 2 diesel fuel. Although these products are not precisely identical, they are essentially interchangeable in most applications. No. 2 fuel oil is the most common form of heating oil. No. 4 distillate is a blend of No. 2 and No. 5 or No. 6 residual fuel oil, used in large stationary diesel engines and boilers equipped with fuel-preheating equipment. Residual fuel oil refers to the heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations. See *Fuel*.

Fuel Oil Paid by Household: The household paid the supplier directly for all household uses of fuel oil or kerosene (such as space heating or water heating). Bills paid by a third party are not counted as paid by the household. See *Fuel*.

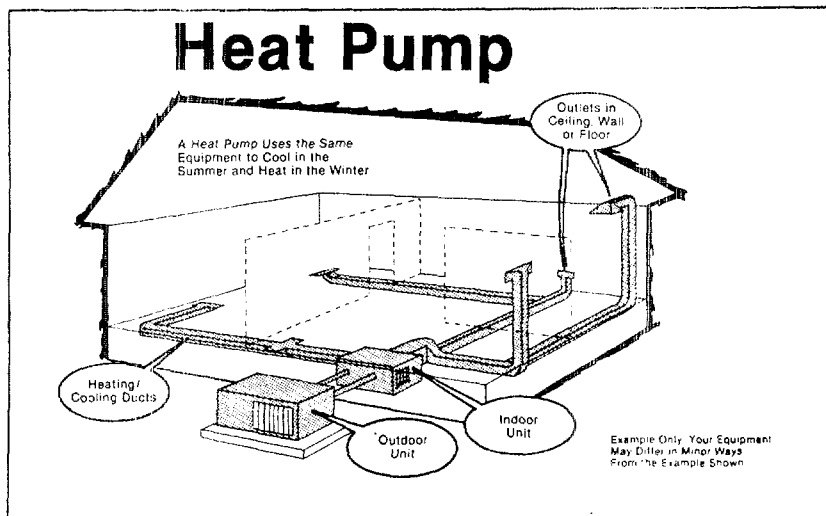
Fuel Oil Supplier: See *Energy Supplier*.

Gas Paid by Household: The household paid the utility company directly for all household uses of natural gas (such as water heating, space heating, air conditioning, cooking, and operating appliances including outdoor gas lights). Bills paid by a third party are not counted as paid by the householder. See *Fuel*.

HDD: See *Heating Degree-Days*.

Heat Pump (Reverse Cycle System): A year-round heating/air-conditioning system in which refrigeration equipment supplies both heating and cooling through ducts leading to individual rooms. A heat pump generally consists of a compressor, both indoor and outdoor coils, and a thermostat. In the RECS, all heat pumps are considered to be electrically powered.

The heat pump, when attached to a central furnace, is either the main or secondary heating equipment (depending on how often the heat pump operates). If it operates for a short time and then the furnace comes on, the heat pump is secondary (or additional) heating equipment. If the heat pump is sufficient to provide the desired warmth, the heat pump is cited as the main heating equipment.



Heated Area of Residence: This area is the portion of the measured square feet of a housing unit that is heated during most of the winter season. Rooms that are shut off during the heating season to save fuel are not counted as heated square footage. Attached garages that are unheated, and unheated areas in basements and attics, are not counted as heated square feet. See **Square Feet**.

Heating Degree-Days (HDD): A measure of how cold a location was over a period of time, relative to a base temperature. In this report, the base temperature used is 65 degrees Fahrenheit, and the period of time is one year. The heating degree-days for a single day is the difference between the base temperature and the day's average temperature, if the daily average is less than the base; and zero, if the daily average temperature is greater than or equal to the base temperature. The average daily temperature is the mean of the maximum and minimum temperature for a 24-hour period. Heating degree-days are determined by subtracting the average daily temperature below 65 degrees F from the base 65. For example, a day with an average temperature of 50 degrees F has 15 heating degree-days (65 - 50 = 15), while one with an average temperature of 65 degrees F or higher has zero.

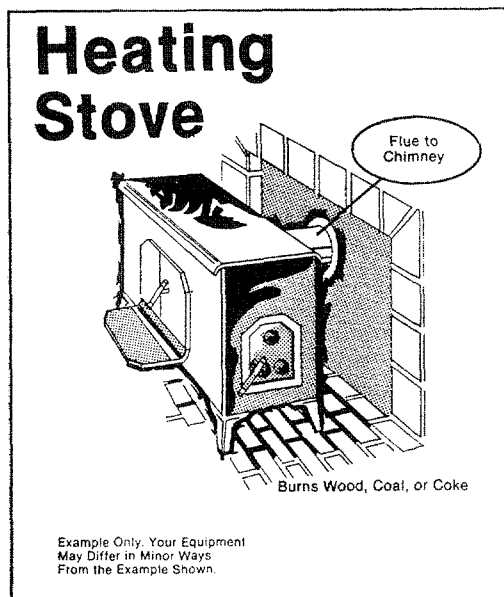
In 1987, for the first time in the RECS, heating degree-days for households were taken from records of an appropriate nearby weather station. In previous surveys, weather data were assigned to households according to the NOAA division in which the household was located. See **NOAA Division** and **Climate Zone**.

Heating Intensity: The ratio of space-heating consumption or expenditures to square footage of heated floorspace and heating degree-days (base 65 degrees F). This ratio provides a way of comparing different types of housing units and households by controlling for differences in housing unit size and weather conditions. The square footage of heated floorspace is based upon the measurements of the floorspace that is heated. The ratio is calculated on a weighted, aggregate basis according to the following formula:

$$\text{Heating Intensity} = \frac{\text{Btu for space heating}}{(\text{Heated Square Feet} \times \text{Heating Degree-Days})}$$

See **Main Heating Equipment**, **Heated Area of Residence**, and **Heating Degree-Days**.

Heating Stove Burning Wood, Coal, and Coke: Any free-standing box or controlled-draft stove; or a stove installed in a fireplace opening, using the chimney of the fireplace. Stoves are made of cast iron, sheet metal, or plate steel. Free-standing fireplaces that can be detached from their chimneys are considered heating stoves. "Airtight" stoves allow the user to control the amount of air in the stove to regulate the rate of combustion. The doors fit tightly so that the air flow can be controlled. Many airtight stoves have a gasket around the door of the stove. "Nonairtight" stoves are those lacking gaskets around their door openings.



Hispanic Descent: This, as the question on race, was self-determined by the respondent. The respondent was asked, "Is the householder of Spanish or Hispanic descent?" The respondent's answer was recorded. See **Race**.

Hot-Deck Imputation: A statistical procedure for deriving a probable response to a questionnaire item concerning a household or vehicle, where no response was given during the survey. To perform this procedure, an analyst sorts the households or vehicles by variables related to the missing item. Thus, a series of sort categories are formed, which are internally homogeneous with respect to the sort variables. Within each category, households or vehicles for which the questionnaire item is not missing are randomly selected to serve as "donors" to supply values for the missing item of "recipient" households or vehicles. See **Imputation** and **Appendix A**, "How the Survey Was Conducted."

Household: A family, an individual, or a group of up to nine unrelated persons occupying the same housing unit. "Occupy" means the housing unit was the person's usual or permanent place of residence at the time of the first field contact. The household includes babies, lodgers, boarders, employed persons who live in the housing unit, and persons who usually live in the household but are away traveling or in a hospital. The household does not include persons (normally members of the household) who were away from home as college students or as members of the armed forces at the time of the contact. The household does not include the following: (1) persons temporarily visiting with the household if they have a place of residence elsewhere; (2) persons who take their meals with the household, but usually lodge or sleep elsewhere; (3) domestic employees or other persons employed by the household who do not sleep in the same housing unit; or (4) persons who are former members of the household, but have since become inmates of correctional or penal institutions, mental institutions, homes for the aged or needy, homes for hospitals for the chronically ill or handicapped, nursing homes, convents or monasteries, or other places in which residents may remain for long periods of time. By definition, the number of households is the same as the number of occupied housing units.

Householder: The person (or one of the people) in whose name the home is owned or rented. If there is no lease or similar agreement, or if the person who owns the home or pays the rent does not live in the housing unit, the householder is the person responsible for paying the household bills, or whoever is generally in charge.

Housing Structure: One of four structural types used to categorize the building in which the housing unit was located. The types of structure are as follows:

Single-family housing unit--a structure that provides living space for one household or family. The structure may be detached, attached on one side (semidetached), or attached on two sides. Attached houses are considered single-family houses as long as the house itself is not divided into more than one housing unit and has an independent outside entrance. A single-family house is contained within walls that go from the basement (or the ground floor, if there is no basement) to the roof. (A mobile home with one or more rooms added is classified as a single-family home.)

House or building with two to four housing units--a structure that is divided into living quarters for two, three, or four families or households. This category also includes houses originally intended for occupancy by one family (or for some other use) that have since been converted to separate dwellings for two to four families. Typical arrangements in these types of living quarters are separate apartments downstairs and upstairs, or one apartment on each of three or four floors.

Building with five or more housing units--a structure that contains living quarters for five or more households or families.

Mobile home or trailer--a structure that has all the facilities of a dwelling unit but is built on a movable chassis. It may be placed on a permanent or temporary foundation and may contain one room or more. If rooms are added to the structure, it is considered a single-family housing unit.

Housing Unit: A structure or part of a structure where a household lives. It has direct access from the outside of the building either directly or through a common hall. Housing units do not include group quarters such as prisons or nursing homes where 10 or more unrelated persons live. Hotel and motel rooms are considered housing units if occupied as the usual or permanent place of residence.

Imputation: A statistical method used to fill in values for missing items, designed to minimize the bias of estimates based on the filled-in data set. See **Hot-Deck Imputation** and **Appendix A**, "How the Survey Was Conducted."

Indicator Variable: A variable that is equal to either zero or one. The variable equals one when a set of conditions is met and equals zero when the set of conditions is not met. In particular, the variable "indicates" that the conditions have been met when the variable equals one.

Kerosene: A distilled product of oil or coal with the generic name kerosene, having properties similar to those of No. 1 fuel oil. Kerosene is primarily used in cooking stoves, space heaters, water heaters, or for lighting equipment that uses wicks. It is sometimes sold under the names "range oil," "stove oil," or "coal oil." See **Fuel** and **Fuel Oil**.

kWh (kilowatthour): A measure of electricity defined as a unit of work or energy, measured as 1 kilowatt (1,000 watts) of power expended for 1 hour. One kWh is equivalent to 3,412 Btu. See **Btu** and **Btu Conversion Factors**.

LIHEAP or Low-Income Home Energy Assistance Program: See **Assistance for Heating in Winter**.

Liquefied Petroleum Gas (LPG): Any fuel gas supplied to a residence in liquid form, such as propane or butane. It may also be called "bottled gas". It is usually delivered by tank truck and stored near the residence in a tank or cylinder until used. Propane was the most common liquefied petroleum gas supplied to RECS households. Household use of LPG solely for outdoor gas grills or in recreational vehicles is not considered sufficient use to mark the household as a user of LPG. See **Fuel**.

LPG: See **Liquefied Petroleum Gas**.

LPG Paid by Household: The household paid the fuel supplier directly for all household uses of LPG such as water heating, space heating, air conditioning, cooking, (other than cooking on an outdoor grill, which is excluded) and operating appliances. Bills paid by a third party are not counted as paid by the household. See **Fuel**.

Main Heating Equipment: The equipment primarily used for heating ambient air in the housing unit. The main heating equipment is reported as such even if it is temporarily out of order. If two types of heating equipment are used, the main heating equipment is the one that is used more. If both are used equally, the main heating equipment is the one that appears first on the list in the question. A "cooking stove" may be used as the main heating equipment even though it was built for preparing food. See also description of specific types of heating equipment, such as **Central Warm-Air Furnace, Heat Pump, Built-In Electric Units, Steam or Hot-Water System, Floor, Wall or Pipeless Furnace, Heating Stove, Room Heater, and Secondary Heating Equipment**.

Main Heating Fuel: The fuel named by the respondent in response to the question "What is the main fuel used for heating your home?" If two or more heating fuels are used, the main heating fuel is the one that provides most of the heat for the home. See **Secondary Heating Fuel**.

Master-Metering: Measurement of electricity or natural gas consumption of several tenants or housing units using a single meter. That is, one meter measures the energy usage for several households collectively.

Mean: The simple arithmetic average for a population; that is, the sum of all the values in a population divided by the size of the population. For this report, population means are estimated by computing the weighted sum of the sample values, then dividing by the sum of the sample weights. Thus, the mean is an aggregate ratio with the total number of households the denominator. See **Aggregate Ratio** and **Weight**.

Median: A measure of central tendency, intended to express a "typical" value for an attribute. The median is different from the arithmetic average (mean) in that its value is not influenced much by extremes. For example, the mean number of cords of wood consumed per household would be affected by the inclusion of a few heavy users of wood, and would not express wood consumption for a "typical" wood-using household. However, the median number of cords of wood consumed per household would not be so affected. Medians are computed by listing all values in ascending order. The value that divides the list in half is the median.

Metered Data: End-use data obtained through the direct measurement of the total energy consumed for specific uses within the individual household. Individual appliances can be submetered by connecting the recording meters directly to individual appliances. See **End Use** and **Submetered Data**.

Metropolitan: A group of households located within Metropolitan Statistical Areas (MSA's) as defined by the U.S. Office of Management and Budget. Except in New England, an MSA is (1) a county or group of contiguous counties that contain at least one city of 50,000 inhabitants or more, or (2) an urbanized area of at least 50,000 inhabitants and a total MSA population of at least 100,000 (75,000 in New England). The contiguous counties are included in an MSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, MSA's consist of towns and cities, rather than counties. See **Nonmetropolitan** and **Central City**.

Metropolitan Status: Refers to geographic location of the households in relationship to Metropolitan Statistical Areas (MSA's). See **Metropolitan**, **Nonmetropolitan**, and **Central City**.

Mobile Home: See **Housing Structure**.

MSA: See **Metropolitan**.

Multistage Area Probability Sample: A sample design executed in stages with geographic "clusters" of sampling units selected at each stage. This procedure reduces survey expense while maintaining national coverage. See Appendix A, "How the Survey Was Conducted."

Natural Gas: Hydrocarbon gas (mostly methane) supplied as an energy source to individual housing units by underground pipelines from a central utility company. It does not refer to privately-owned gas wells operated by the household, nor to liquefied petroleum gas. See **Fuel**.

NOAA Division: One of the 345 weather divisions designated by the National Oceanic and Atmospheric Administration (NOAA) encompassing the 48 contiguous States. These divisions usually follow county borders to encompass counties with similar weather conditions. The NOAA division does not follow county borders when weather conditions vary considerably within a county such as is likely to happen when the county borders the ocean or contains high mountains. A State contains an average of seven NOAA divisions; a NOAA division contains an average of nine counties.

Nonelderly: See **Elderly**.

Nonmetropolitan: Households not located within Metropolitan Statistical Areas as defined by the U.S. Office of Management and Budget. See **Metropolitan**.

Number of Rooms: Subdivisions of a housing unit. Rooms such as living rooms, dining rooms, bedrooms, kitchen, lodgers' rooms, finished basements or attic rooms, recreation rooms, and permanently enclosed sun porches that are used year-round are undivided. Rooms used for offices by a person living in the unit are also included in this survey. "Finished" means that the ceiling and walls are covered with finishing materials.

In the RECS, bathrooms, halls, foyers, or vestibules, balconies, closets, alcoves, pantries, strip or pullman kitchens, laundry or furnace rooms, unfinished attics or basements, open porches, and unfinished space used for storage are not considered rooms.

A partially divided room, such as a dinette next to a kitchen or a living room, is considered a separate room only if there is a partition from floor to ceiling--but not if the partition consists solely of shelves or cabinets. If a room is used by occupants of more than one unit, the room is included with the unit from which it is most easily reached.

Occupied Housing Unit: A unit someone was living in as his or her usual or permanent place of residence when the first field contact was made. The definition "Occupied Housing Units" is the same as that used by the U.S. Bureau of Census. See **Housing Unit**.

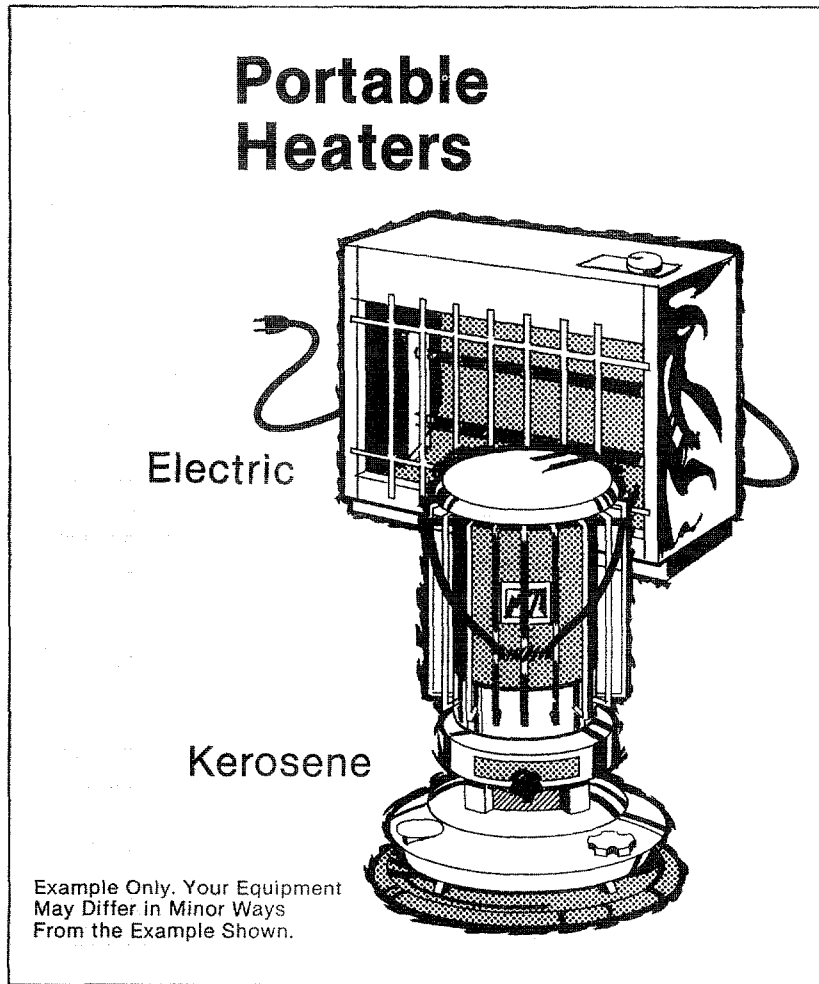
Outside Central City: See **Central City**.

Oven: An appliance that is an enclosed compartment supplied with heat and used for cooking food. Toaster ovens are not considered ovens for this survey. The range (stove-top burners) and oven are considered two separate appliances for the RECS, although they are often purchased as one appliance. See **Appliances Used**.

Owned/Rented: The relationship of the occupants of a structure to the structure itself, not to the land on which the structure is located. "Owned" means the owner or co-owner is a member of the household. The housing unit is considered owned if it is mortgaged and not fully paid for. A household is classified "rented" even if the rent is paid by someone not living in the unit. "Rent free" means the unit is not owned or being bought and no money is paid or contracted for rent. Such units are usually provided in exchange for services rendered or as an allowance or favor from a relative or friend not living in the unit. Unless shown separately, rent-free households are grouped with rented households.

Payment Method for Utilities: The method by which fuel suppliers or utility companies were paid for all electricity, natural gas, fuel oil, kerosene, or liquefied petroleum gas used by a household. Households that paid the utility company directly were classified in this survey as "all paid by household." Households that paid directly for at least one but not all of their fuels used and that has at least one fuel charge included in the rent were classified as "some paid, some included in rent." Households for which all fuels used were included in rent were classified as "all included in rent." If the household did not fall into one of these categories, it was classified as "other." Examples of households falling into the "other" category are: (1) households for which fuel bills were paid by a social service agency or a relative, and (2) households that paid for some of their fuels used but paid for other fuels through another arrangement.

Portable Electric Heater: A heater that uses electricity and that can be picked up and moved.



Portable Kerosene Heater: A heater that uses kerosene and that can be picked up and moved.

Poverty: Low-income classifications to which certain households are assigned using U.S. Bureau of the Census definitions. These definitions based on the number of family members in the household and the income of the entire family. "Below 100 percent of poverty line" encompasses a group of households with incomes below the poverty level as defined by the U.S. Bureau of the Census. "Below 125 percent of poverty line" includes a group of households with incomes below 125 percent of the poverty level. These groups of the poor and near-poor represent alternative levels for defining poverty. See Table C3 for the size and income criteria.

Primary Sampling Unit (PSU): A sampling unit selected at the first stage in multistage area probability sampling. A PSU typically consists of one to several contiguous counties--for example, a metropolitan area with surrounding suburban counties. The approximately 3,100 counties and independent cities of the contiguous United States were grouped into about 1,800 PSU's by a procedure similar to the one used by the Census Bureau for its Current Population Survey. PSU's can be composed of one or more MSA's or can be composed of rural counties. See Metropolitan and Appendix A, "How the Survey Was Conducted."

Propane: See **Liquefied Petroleum Gas or LPG.**

PSU: See **Primary Sampling Unit.**

Public Housing: Housing units owned by a local housing authority or other local public agency such as a housing and redevelopment authority or a housing development agency. These organizations receive subsidies from the Federal or State government, but the local agency owns the property. To live in such a project, one must apply to the local housing authority.

Quadrillion: The quantity 1,000,000,000,000,000 (10^{15}).

Race: The primary ethnic background of the person considered to be the householder as determined by the respondent. Each respondent was asked, "Which of the groups on this exhibit best describes the householder?" The groups included: white, black or Negro, American Indian, Alaskan native, Asian, and Pacific Islander. The word "race" was not used in either the questionnaire or the instructions. A separate question was asked Hispanic Descent. See **Hispanic Descent.**

Range: The stove-top burners used for cooking food. The range and oven are considered two separate appliances in RECS, although they are often purchased as one appliance. See **Appliances Used.**

Refrigeration Unit: A unit that lowers the temperature through a mechanical process. In a typical refrigeration unit, electricity powers a motor that runs a pump to compress the refrigerant into a liquid. (A "refrigerant" is a substance that changes between liquid and gaseous states under desirable temperature and pressure conditions.) Heat from the compressed liquid is removed and discharged from the unit and the refrigerant then evaporates when pressure is reduced. The refrigerant picks up heat as it evaporates and it returns to the compressor to repeat the cycle.

A few refrigeration units use gas (either natural gas or LPG) in an absorption process than does not use a compressor. The gas is burned to heat a chemical solution in which the refrigerant has been absorbed. Heating drives off the refrigerant which is later condensed. The condensed refrigerant evaporates by a release of pressure, and it picks up heat as it evaporates. The evaporated refrigerant is then absorbed back into the chemical solution, the heat is removed from the solution and discharged as waste heat, and the process repeats itself. By definition, refrigerators, freezers, and air-conditioning equipment all contain refrigeration units. See **Air-Conditioning Equipment.**

Refrigerator: A cabinet or box for keeping food cool, usually powered by electricity. Those few refrigerators with no freezer sections are included in the nonfrost-free category. "Frost-free" means that frost does not build up on the insides of the freezer section or the ice-cube section. All home refrigerators are assumed to have electric refrigeration units. Gas refrigeration units are not being manufactured in the United States for use in the home. Gas refrigeration (using LPG) are being manufactured for use in recreational vehicles, but LPG used in recreational vehicles is not included in the RECS. See **Appendix C, "Quality of the Data," Refrigeration Unit, and Appliances Used.**

Regression Imputation: A statistical technique for predicting the value of a numerical variable that is missing. The technique involves developing a regression equation that predicts the value of the missing variable based upon variables that are not missing or have already been imputed. A random error is usually added to the predicted value. The sum of the predicted value and the random error is used as the imputed value for the missing variable. See **Imputation.**

Relative Standard Error: See **RSE or Relative Standard Error.**

Rent: See **Owned/Rented.**

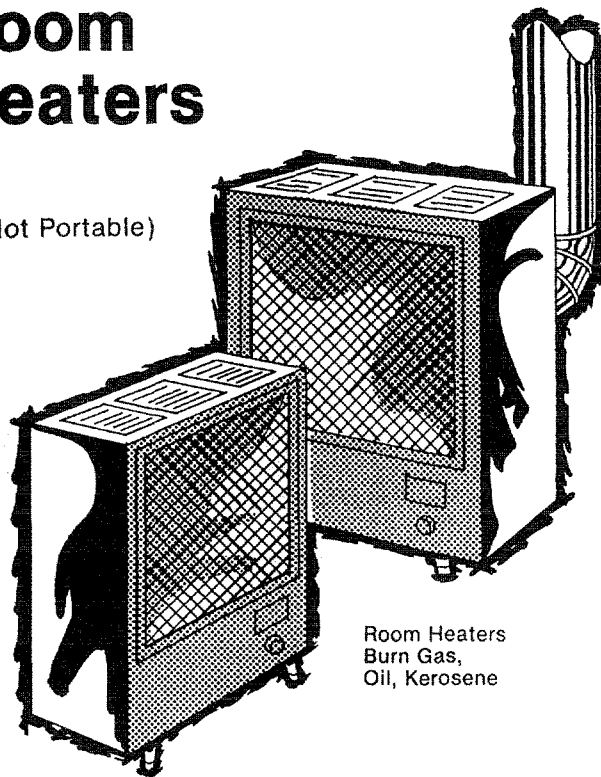
Rent Subsidy: Housing units that have a reduced rent because the Federal, State, or local Government is paying part of the cost of construction, building mortgage, or operating expenses.

Residential: Occupied housing units, including mobile homes, single-family housing units (attached and detached), and apartments. Residential does not include vacant housing units or second homes. See **Occupied Housing Units, Household, and Housing Unit.**

Room Heater Burning Gas, Oil, Kerosene: Any of the following equipment: circulating heaters, convectors, radiant gas heater, space heaters, or other nonportable room heaters that may or may not be connected to a flue, vent, or chimney. See **Main Heating Equipment.**

Room Heaters

(Not Portable)



Room Heaters
Burn Gas,
Oil, Kerosene

Example Only. Your Equipment
May Differ in Minor Ways
From the Example Shown.

Rooms: See **Number of Rooms**.

RSE or Relative Standard Error: A measure of the reliability or precision of a survey statistic. Variability occurs in survey statistics because the different samples that could be drawn would each produce different values for the survey statistics. Relative Standard Error, or RSE, is a measure of precision on a percentage scale. The RSE is defined as the standard error of a survey estimate, divided by the survey estimate and multiplied by 100. (Standard error is the square root of the variance.) For example, an RSE of 50 percent means that the standard error is half as large as the survey estimate. See **Appendix C**, "Quality of the Data," for a discussion of sampling errors.

RSE Column Factor: An adjustment factor that appears above each column of the tables and is used to compute RSE's. For a survey estimate in a particular row and column of a table (that is, a particular "cell"), the approximate RSE is obtained by multiplying the RSE row factor by the RSE column factor for that cell. See **RSE**, **RSE Row Factor**, and **Appendix C**, "Quality of the Data."

RSE Row Factor: A factor that appears to the right of each row of the tables, and is used to compute RSE's. For a survey estimate in a particular row and column of a table (that is, a particular "cell"), the approximate RSE is obtained by multiplying the RSE row factor by the RSE column factor for that particular cell. The row factor is equal to the geometric mean of the RSE's in a particular row of the tables. See **RSE**, **RSE Column Factor**, and **Appendix C**, "Quality of the Data."

Sampling: The procedure used to select housing units for interview from the population of residential housing units in the United States. See **Multistage Area Probability Sample** and **Appendix A**, "How the Survey Was Conducted."

Secondary Heating Equipment: Equipment used less often than the main heating equipment. See **Main Heating Equipment**.

Secondary Heating Fuel: Fuels used in secondary heating equipment. When no secondary heating equipment is used a secondary heating fuel that is used in the main heating equipment is not included in the tabulations. This occurs when, for example, wood and coal are both used in a furnace but wood is named the main heating fuel. Coal, in this case, is not tabulated. See **Main Heating Fuel**.

Single-Family: See **Housing Structure**.

Site Energy: The Btu value of energy at the point it enters the home, sometimes referred to as "delivered" energy. In this report, the site value of energy is used for all fuels, including electricity. See **Adjusted Electricity** and **Btu Conversion Factors**.

Solar Collector: Equipment that actively concentrates thermal energy from the sun. The energy is usually used for space heating, for water heating, or for heating swimming pools. Either air or liquid is the working medium. Data was not collected on passive solar. See **Fuel** and **Active Solar**.

Space Heating: Space heating is one of four main end-use categories in this report. It is defined as the use of energy to generate heat for warmth in housing units using space-heating equipment. The equipment could be the main space-heating equipment or secondary space-heating equipment. It does not include the use of energy to operate appliances (such as lights, televisions, and refrigerators) that give off heat as a byproduct. In addition, the use of electricity to operate fans in central forced-air heating equipment is not included in space heating--this use is included in the appliance end-use category. See **End Use**.

Space-Heating Equipment: See **Main Heating Equipment**.

Square Feet: The floor area of the housing unit that is enclosed from the weather. Basements are included, whether or not they contain finished space. Garages are included if they have a wall in common with the house. Attics that have finished space and attics that have some heated space are included. Crawlspace are not included, even if they are enclosed from the weather. Sheds and other buildings that are not attached to the house are not included.

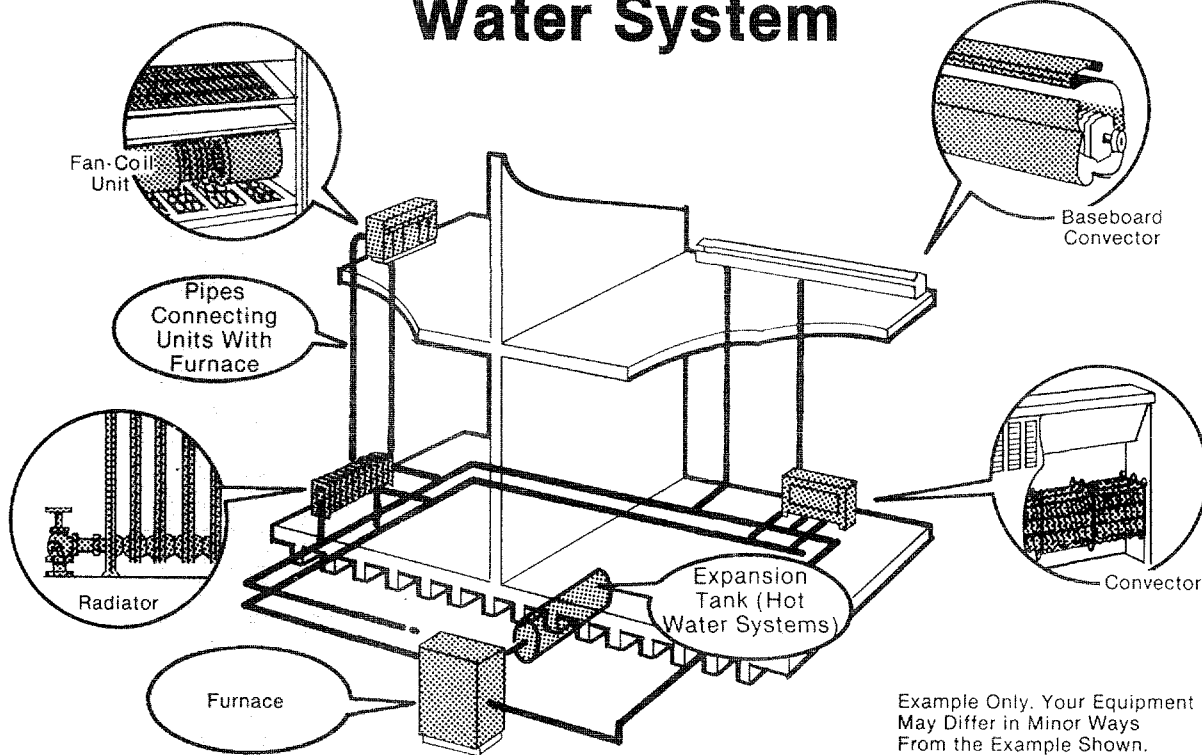
"Measured Square Feet" means that the measurement of the dimensions of the home did not rely on the respondent's reports but was an actual measurement made by the interviewer using a metallic, retractable, 50-foot tape measure. For details on how the measurement was made and how the data were treated, see **Appendix A**, "Estimates of Housing Unit Size."

Standard Price: The average residential rate for one kilowatthour (kWh). The local electric rate was computed from: *Typical Electric Bills* January 1, 1987 DOE/EIA-0040(87); the U.S. Department of Agriculture typical bill data; billing data rates; and telephone calls to local utilities when no other data were available. The standard price is independent of the household's level of electricity consumption. See **Appendix A**, "How the Survey Was Conducted."

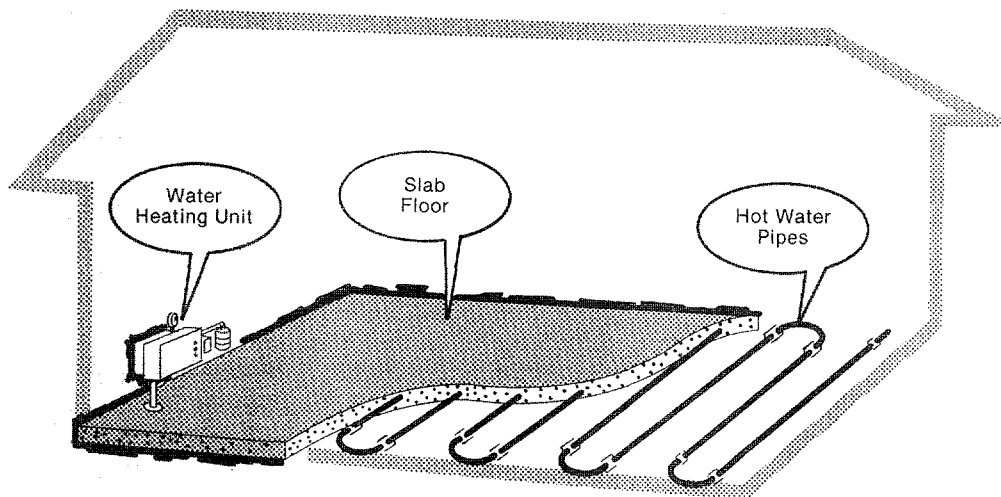
Status of Unit: See **Owned/Rented**.

Steam or Hot-Water System: Either of two types of central heating system that supplies steam or hot water to radiators, convectors, or pipes. The more common type supplies either steam or hot water to conventional radiators, baseboard radiators, convectors, heating pipes embedded in the walls or ceilings, or heating coils or equipment that are part of a combined heating/ventilating or heating/air-conditioning system. The other type supplies radiant heat through pipes that carry hot water and are inlaid in a concrete slab floor. See **Main Heating Equipment**.

Steam or Hot Water System



Hot Water Pipes Running Through Slab Floor



Example Only. Your Equipment May Differ in Minor Ways From the Example Shown.

Stove: See **Heating Stove** and **Cooking Stove**.

Submetered Data: End-use consumption data obtained for individual appliances when a recording device has been attached to the appliance to measure the amount of energy consumed by the appliance. See **Metered Data**.

Total Square Footage: Square footage of floorspace summed or aggregated over all households in a category (such as all households in the United States). In this survey, aggregate square footage was estimated by multiplying each household's square footage by its weight, then summing over all sample households in a category to represent nationwide totals. See **Square Feet** and **Weight**.

Vacant Housing Unit: A housing unit not occupied when the first field contact was made. An occupied seasonal or migratory housing unit is classified as vacant at the time of the first contact if all of its occupants had a usual place of residence elsewhere.

Vehicles: Motorized vehicles used by U.S. households for personal transportation. Excluded are: motorcycles, mopeds, large trucks, and buses. Included are: automobiles, station wagons, passenger vans, utility vans, motor homes, pickup trucks, and jeeps or other 4-wheel drive vehicles. In order to be included, vehicles must be: (1) owned by members of the household; (2) company cars not owned by household members but regularly available to household members for their personal use and ordinarily kept at home; or (3) rented or leased for 1 month or more. See **Vehicle Used on the Job**.

Vehicle Used on the Job: A vehicle used by anyone in the household for job-related activities, excluding commuting to and from work. See **Vehicles**.

Water Heating: Water heating is one of four main end-use categories in this report. It is defined as the use of energy to heat water for hot running water, as well as the use of energy to heat water on stoves and in auxiliary water-heating equipment for bathing, cleaning and other noncooking applications of hot water. The use of energy to heat water for cooking and hot drinks is not considered to be water heating--this use is included in the appliance end-use category. In addition, the use of energy to heat water for a swimming pool is not water heating--it also included in the appliance end-use category. See **End Use**.

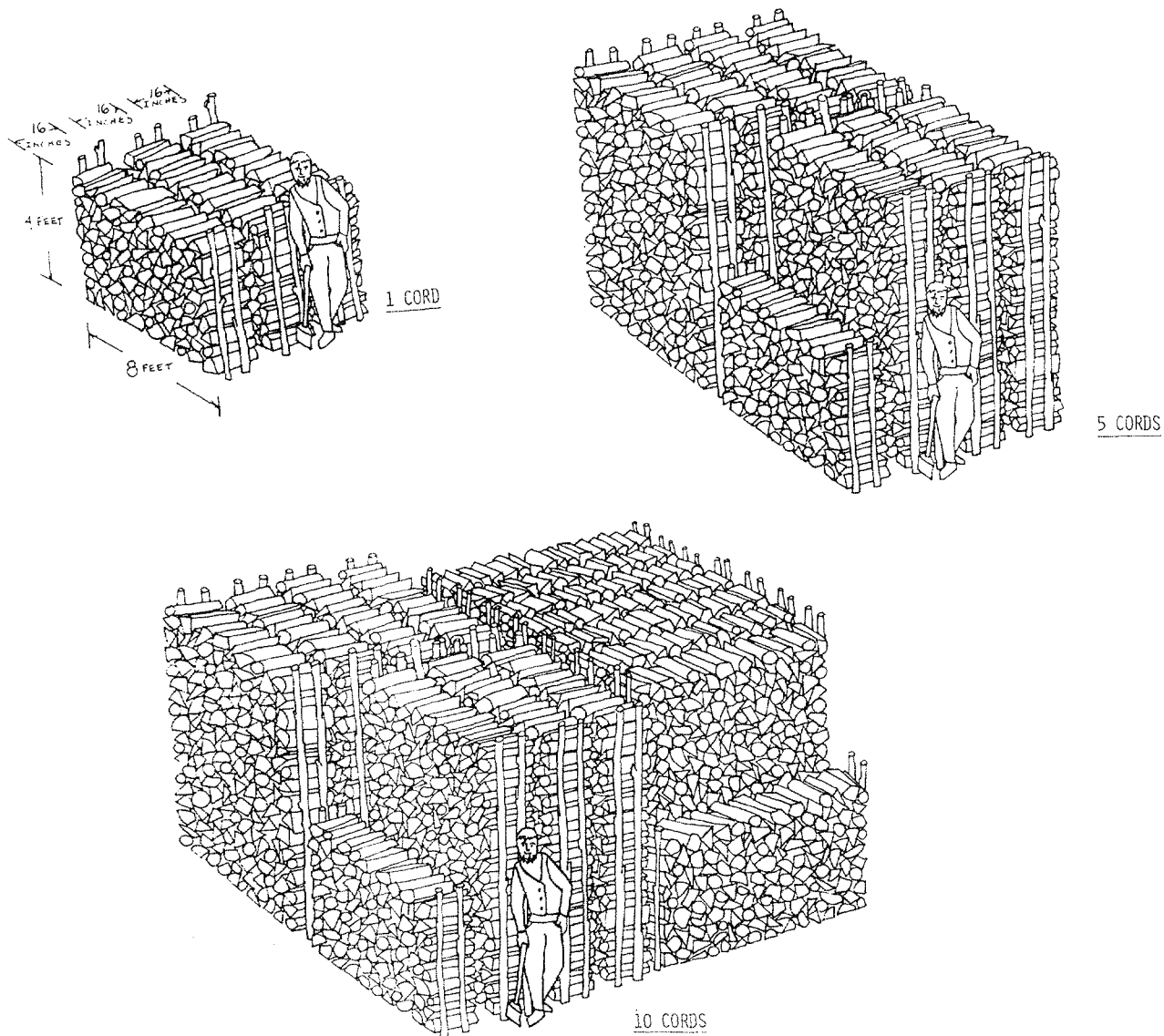
Weight: The number of households in the United States that a particular sample unit represents. To estimate the total value of an attribute (such as square footage) in the U.S. residential population as a whole, each sample household's value is multiplied by the household's weight. Summing the weighted sample values provides an estimate of the nationwide total. See **Multistage Area Probability Sample**, and **Appendix C**, "Quality of the Data."

Whole-House Cooling Fan: A large fan located in the attic or entrance to the attic and cools the whole house by drawing air through lower level windows. See **Appliances Used**.

Window or Ceiling Fan: Fans located in the window or installed on the ceiling. Portable or floor fans that are not used in a window are not counted. See **Appliances Used**.

Wood Consumption: The amount of wood burned in a fireplace, stove, or furnace, in the home at any time during the preceding 12 months as reported by the respondent at the time of the interview. The figures for wood burned cover the major part of the 1986-1987 heating season.

A cord of wood measures 4 feet by 4 feet by 8 feet and is approximately 128 cubic feet. A third of a cord measures 16 inches by 4 feet by 8 feet. In order to enable respondents to be more accurate in reporting the amount of wood they burned, especially those households that used more than 5 cords of wood, respondents were shown drawings which included a person holding an ax as a point of reference, and showed wood piles containing 5 and 10 cords. A smaller scale copy of the drawing shown to respondents for 1, 5, and 10 cords is reproduced below.



Wood Conversion to Btu: Converting cords of wood into a Btu equivalent is an imprecise procedure. The number of cords each household reports having burned is inexact, even with the more precise drawings provided, because the estimate requires the respondent to add up the use of wood over a 12-month period during which wood may have been added to the supply as well as removed. Besides errors of memory inherent in this task, the estimates are subject to problems in definition and perception of what a cord is. The nominal cord as delivered to a suburban residential buyer may differ from the dimensions of the standard cord. This difference is possible because wood is most often cut in lengths that are longer than what makes a third of a cord (16 inches) and shorter than what makes a half cord (24 inches).

In other cases, wood is bought or cut in unusual units (for example, pickup truck-load or trunk load). Finally, volume estimates are difficult to make when the wood is left in a pile instead of being stacked. Other factors that make it difficult to estimate the Btu value of the wood burned is that the amount of empty space between the stacked logs may vary from 12 to 40 percent of the volume. Moisture content may vary from 20 percent in dried wood to 50 percent in green wood. (Moisture reduces the useful Btu output because energy is used in driving off the moisture.) Finally, some tree species contain twice the Btu content of species with the lowest Btu value. Generally, hard woods

have greater Btu value than soft woods. Wood was converted to Btu at the rate of 20 million Btu per cord, which is a rough average that takes all these factors into account. See **Btu Conversion Factors**.

Year of Construction: The year the structure was originally completed or the year any part of the structure was first occupied. For mobile homes, year of construction is the model year.

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