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Residential
Transportation Energy
Consumption Survey:

Energy Information Administration
Washington, D.C.

Featuring Comparisons of
Energy Used in Household
Vehicles with Energy Used in the
Home

Consumption Patterns of Household Vehicles 1983



Published:
January 1985



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Office of Energy Markets
and End Use
Energy End Use Division
Washington, D.C. 20585

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Summary of Findings

Introduction

This report presents data collected in the 1983 Residential Transportation Energy Consumption Survey (RTECS). The survey was designed by the Energy Information Administration (EIA) to provide information on how energy is used by households for personal transportation. It is an integral part of a series of surveys designed by the EIA to collect data on energy used by households. Data from the surveys are available to the public through published reports such as this one and through public use data tapes. The RTECS collects data on the number and type of vehicles per household and, for each vehicle, annual miles traveled, gallons of fuel consumed, type of fuel used, price paid for fuel, and vehicle miles-per-gallon.

The transportation sample, which consists of 3,776 households, was drawn from a larger sample selected for participation in the 1982 Residential Energy Consumption Survey (RECS). Households were interviewed for the RECS survey in fall 1982. The RECS collected data on energy use within the home including heating fuels, appliances, and conservation practices. Actual energy bills were obtained from fuel suppliers for these households for April 1982 to March 1983. These data are presented in a series of residential energy consumption reports.¹ For those households which participated in both surveys, data are available on energy use within the home as well as energy used in personal vehicles. This report presents this combined household energy use. The time periods of consumption, however, for these two types of energy use vary somewhat. The transportation data represent energy consumed in personal vehicles during calendar year 1983; household data represent energy consumed in the home from April 1982 to March 1983.

There are small differences between the home energy use data presented in the RECS reports and the home energy use data presented here as part of the transportation report. These differences exist because the transportation sample is a subsample of the households which participated in the RECS survey. Additionally, the transportation sample has been weighted to represent the number of U.S. households² as of July 1, 1983; the RECS sample was weighted to represent the number of U.S. households as of November 1982.

¹ Reports are available from the National Energy Information Center or U.S. Government Printing Office (see inside front cover). Public-use data tapes are available from the National Technical Information Service, Computer Products Division, 5285 Port Royal Road, Springfield, Virginia 22161 (Telephone: 703-487-4808).

² A household is a family or group of unrelated persons occupying the same housing unit. The household corresponds to the U.S. Bureau of the Census definition of a household. (See Glossary.)



Summary of Findings (Continued)

Total Consumption

As of July 1, 1983, 72.2 (± 1.3)³ million or 86 percent of all U.S. households, owned, or had the regular use of, a vehicle for personal transportation.⁴ There were 30.6 (± 1.8) million one-vehicle households, 29.6 (± 1.8) million two-vehicle households, and 12.1 (± 1.1) million households with three or more vehicles. These households consumed 80.3 (± 3.9) billion gallons of motor fuel. Motor gasoline accounted for 78.4 (± 3.4) billion or 98 percent of the 80.3 (± 3.5) billion gallons of motor fuel consumed. The remaining 2 billion gallons were made up of 1.1 (± 0.2) billion gallons of diesel fuel, 0.7 (± 0.3) billion gallons of gasohol, and 0.1 (± 0.1) billion gallons of propane.

In 1983, U.S. energy consumption of all fuels was 70.5 quadrillion Btu.⁵ Of this total, household vehicles used 10 quadrillion Btu or 14 percent.⁶ Household vehicles consumed one-third of 1983 petroleum consumption and about one-half of the U.S. transportation sector's 19 quadrillion Btu consumption.

Household Consumption

In 1983, U.S. households drove an average of 16,830 (± 606) miles, consumed 1,112 (± 42) gallons of motor fuel, and spent \$1,317 (± 50) for motor fuel. The amount of fuel consumed per household approximately doubled over the range of family income levels as shown in Table 5. Households with an income of \$5,000 or less consumed an average of 724 (± 101) gallons of fuel during 1983, while households with income of \$35,000 or more consumed nearly twice that amount (1,380 (± 80) gallons). Table 3 reveals a relatively proportional relationship between gallons consumed per household and the number of vehicles per household. For example, households with one vehicle consumed an average of 664 (± 31) gallons of fuel in 1983; households with 2 vehicles consumed 1,217 (± 41) gallons of fuel, almost twice as much. The number of gallons consumed per household increased as the size of the household increased (Table 3). Excluding

³The \pm value in parentheses after a statistic quoted in the text represents two standard errors of the statistic. The standard error is a measure of the variability of an estimate that is based on a sample survey. Standard errors should be used in making inferences about the total population. A 95 percent confidence interval can be approximated by taking twice the standard error and subtracting this value from the statistic to obtain the lower end of the interval. Adding twice the standard error to the statistic will give the upper end of the interval. (A 95 percent confidence interval means that if we repeated the survey using all possible samples, 95 percent of all intervals calculated in this way should contain the true value of the statistic.) Nonsampling error and bias due to nonresponse is an additional concern regarding the statistics in this report. In addition to using standard errors in evaluating the data, the analyst should read Appendix B, "Limitations of the Data."

⁴Household vehicles include company owned cars if regularly available to household members for personal transportation and cars rented or leased for 1 month or more. (See Glossary.)

⁵Energy Information Administration, Annual Energy Review 1983, DOE/EIA-0384(83) (Washington, D.C., April 1984), page 1.

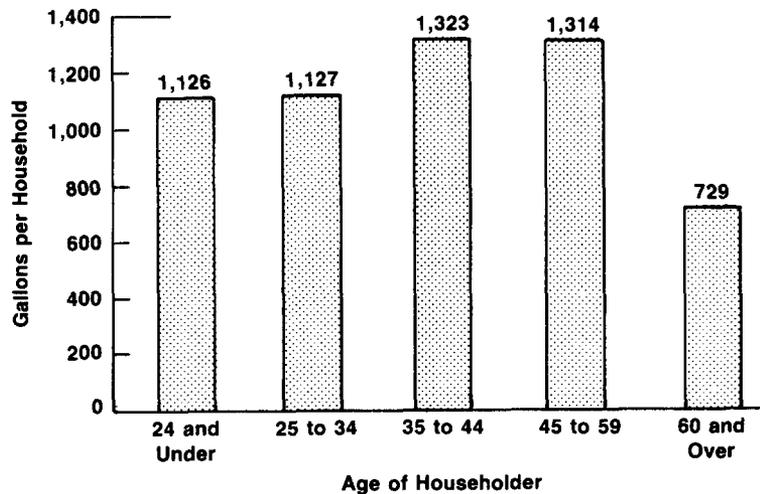
⁶Btu conversion factors used for motor fuel consumption are shown in the Glossary. The following sources were used--Annual Energy Review 1983, and the U.S. Department of Energy, Conservation and Renewable Energy, Energy and Precious Fuels Requirements of Fuel Alcohol Production, DOE/NASA/0292-1 (December 1982), Vol. III, p. VIII.



Summary of Findings (Continued)

households in which the householder⁷ is 60 years old or older, the range of gallons consumed per household by age of householder was 1,126 (± 110) to 1,323 (± 90) gallons per year (Figure 1). In households where the age of the householder was 60 years or older, consumption was much lower (729 (± 36) gallons per year). When total consumption is displayed for households grouped by the age of the householder (Figure 2), the range of total consumption is relatively small for the three middle age groups (25 to 59 years of age, ranging from a low of 17.8 (± 1.9) billion gallons for householders 35 to 44 years old to 23.6 (± 2.4) billion gallons for householders 45 to 59 years old).

Figure 1. Household Motor Fuel Consumption per Household, by Age of Householder, 1983



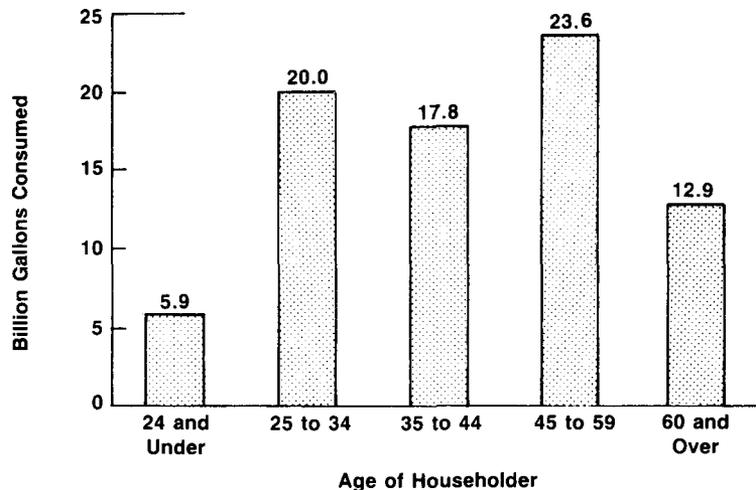
Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, "Residential Energy Consumption Survey, 1982"; Transportation data: Forms EIA-141 and EIA-429, "Residential Transportation Energy Consumption Survey, 1983."

⁷The householder is the person (or one of the persons) who lives in the housing unit and either owns, rents, or is generally in charge of the housing unit.



Summary of Findings (Continued)

Figure 2. Household Motor Fuel Consumption by Age of Householder, 1983



Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, "Residential Energy Consumption Survey, 1982"; Transportation data: Forms EIA-141 and EIA-429, "Residential Transportation Energy Consumption Survey, 1983."

Vehicle Consumption and Efficiency

During 1983, there were 129.3 (± 4.1) million vehicles owned or in regular use by households. Household vehicles consumed an average of 621 (± 16) gallons of fuel, and were driven an average of 9,399 (± 244) miles. The price paid for fuel averaged \$1.18 (± 0.00) per gallon. In 1983, household vehicles averaged 15.1 (± 0.2) miles-per-gallon compared with 14.7 (± 0.3) miles-per-gallon in 1980. In 1983, vehicles of model year 1979 or later achieved 18.6 (± 0.4) miles-per-gallon, while vehicles 10 years or older (model years 1973 or older) averaged 12.7 (± 0.3) miles-per-gallon.

Household Total Energy Expenditures

For households that had the regular use of a vehicle, energy expenditures averaged \$2,380 (± 76) for the study period.⁸ Of that amount, 55 percent was spent for fuel used in household vehicles (\$1,317 (± 50)) and \$1,063 (± 36) was spent for fuels used in the home (Table 14). Households in the West had the lowest total energy expenditures compared with households in the Northeast, North Central, and South; households in the Northeast had the highest expenditures (Figure 3). (See Appendix D, "U.S. Census Regions and Divisions".) The difference in total energy expenditures between the West and the Northeast is due primarily to differences in home energy use. Households in all regions had relatively similar energy

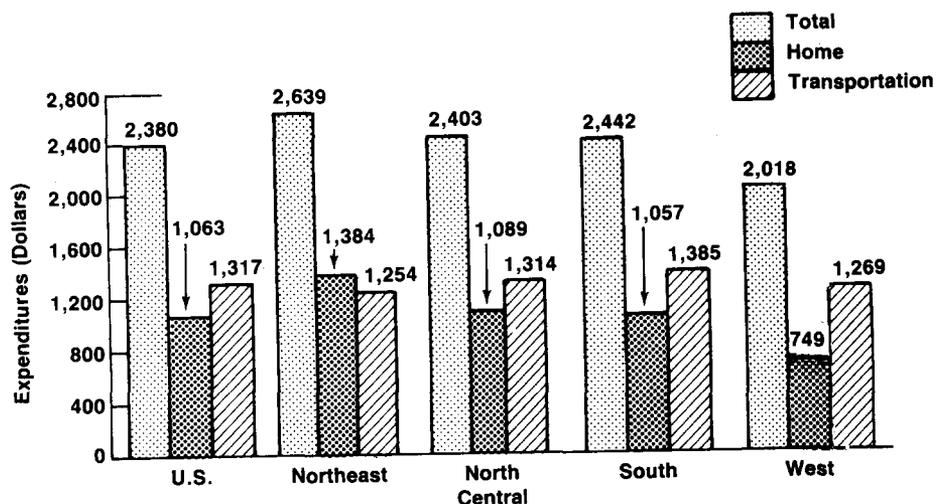
⁸The study period was calendar year 1983 for motor fuel expenditures and April 1982 through March 1983 for fuel expenditures for the home.



Summary of Findings (Continued)

expenditures for energy used in vehicles. Since 14 percent (12.2 (± 1.3) million) of U.S. households had no vehicle as of July 1, 1983, the average total energy expenditure across all U.S. households is somewhat lower, \$2,174 (± 78), than the average for households with vehicles (\$2,380).

Figure 3. Household Energy Expenditures for Fuel Used in the Home and Fuel Used in Motor Vehicles per Household by Region



Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, "Residential Energy Consumption Survey, 1982"; Transportation data: Forms EIA-141 and EIA-429, "Residential Transportation Energy Consumption Survey, 1983."

Historical Data

Prior transportation surveys collected monthly data. Data were collected from June 1979 through September 1981. Table S1 presents historical data for 1980 along with data for 1983. For purposes of comparison with the 1983 data, monthly data for 1980 have been converted to 12-month annual data. The largest difference between the 2 years is in miles traveled per vehicle, 8,617 (± 241) for 1980 compared with 9,399 (± 244) for 1983.



Summary of Findings (Continued)

Table S1. Historical Consumption Patterns of Household Vehicles

Consumption Indicators	Calendar Year 1980	Calendar Year 1983
Number of Households with Vehicles (millions)....	70.6 (±1.8)	72.2 (±1.3)
Number of Vehicles (millions).....	127 (±0.0)	129.3 (±4.1)
Gallons Consumed (billions).....	74.7 (±1.8)	80.3 (±3.5)
Miles Traveled (billions).....	1,094 (±31)	1,215 (±53)
Miles Traveled per Vehicle.....	8,617 (±241)	9,399 (±244)
Miles per Gallon.....	14.7 (±0.3)	15.1 (±0.2)
Gallons Consumed per Vehicle.....	588 (±14)	621 (±16)
Price (dollars per gallon).....	1.20 (±0.00)	1.18 (±0.00)

Sources: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-141 and Form EIA-429, Residential Energy Consumption Survey: Consumption Patterns of Household Vehicles, June 1979 to December 1980, April 1982, DOE/EIA-0319; 1983 Residential Transportation Energy Consumption Survey.



Motor Fuel Consumption and Expenditures

Table 1. Household Motor Fuel Consumption and Expenditures, 1983

Household Characteristics	Number of Households (millions)	Miles Driven (billions)	Gallons Consumed (billions)	Expenditures (billion dollars)
Total	72.2	1,215	80.3	95.1
Census Region and Division				
Northeast.....	13.9	227	14.5	17.5
New England.....	3.8	64	3.9	4.7
Middle Atlantic.....	10.1	164	10.7	12.8
North Central.....	18.3	298	20.2	24.0
East North Central.....	12.3	198	13.3	16.0
West North Central.....	6.0	99	6.8	8.0
South.....	24.7	436	29.1	34.2
South Atlantic.....	12.2	223	14.4	17.1
East South Central.....	4.9	86	5.7	6.8
West South Central.....	7.6	127	9.0	10.3
West.....	15.3	254	16.5	19.5
Mountain.....	4.0	65	4.3	5.0
Pacific.....	11.3	188	12.2	14.5
Area Type				
Metropolitan.....	54.2	909	59.5	70.4
Central City.....	22.8	331	22.6	26.6
Outside Central City.....	31.4	578	36.9	43.8
Nonmetropolitan.....	18.0	306	20.8	24.7
Average Number of Vehicles 1983 (vehicle years)				
1 or Fewer.....	30.6	305	20.3	24.1
2.....	29.6	547	36.0	42.6
3 or More.....	12.1	363	24.0	28.3
Number of Drivers (Fall 1982)				
1.....	20.9	219	14.6	17.4
2.....	39.7	690	45.5	53.8
3 or More.....	11.0	301	19.9	23.5
None/No Answer.....	.5	5	.3	.4
Origin of Householder				
White.....	63.8	1,078	70.4	83.4
Black.....	6.8	107	8.0	9.5
Other.....	1.6	30	1.9	2.2
Hispanic Descent				
Yes.....	3.5	59	4.2	4.9
No.....	68.7	1,156	76.0	90.2
Age of Householder				
24 Years and Under.....	5.2	90	5.9	6.9
25 to 34 Years.....	17.8	316	20.0	23.7
35 to 44 Years.....	13.4	271	17.8	21.1
45 to 59 Years.....	18.0	346	23.6	28.0
60 Years and Over.....	17.8	192	12.9	15.4
Household Size				
1 Person.....	12.6	131	8.4	10.1
2 Persons.....	23.7	352	22.9	27.2
3 Persons.....	12.5	238	15.7	18.5
4 Persons.....	13.7	288	18.7	22.2
5 or More Persons.....	9.6	206	14.6	17.2
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)				
--Long-term Average				
<2,000 CDD and >7,000 HDD.....	7.8	127	8.4	10.1
<2,000 CDD and 5,500 to 7,000 HDD.....	17.4	292	19.2	22.9
<2,000 CDD and 4,000 to 5,499 HDD.....	18.1	303	19.5	23.1
<2,000 CDD and <4,000 HDD.....	17.8	302	20.1	23.7
>2,000 CDD and <4,000 HDD.....	11.2	192	13.1	15.3

See footnotes at end of table



Motor Fuel Consumption and Expenditures

Table 1. (Continued)

Household Characteristics	Number of Households (millions)	Miles Driven (billions)	Gallons Consumed (billions)	Expenditures (billion dollars)
Heating Degree-Days (HDD)				
April 1982 Through March 1983				
> 5,499 HDD.....	23.7	389	25.7	30.8
4,000 to 5,499 HDD.....	20.5	346	22.4	26.5
< 4,000 HDD.....	28.0	479	32.2	37.8
Measured Heated Square Footage of Residence				
Less than 600 Square Feet.....	4.8	65	4.3	5.1
600 to 999 Square Feet.....	18.4	263	17.4	20.6
1,000 to 1,599 Square Feet....	22.2	377	25.4	29.9
1,600 to 1,999 Square Feet....	9.5	171	11.0	13.1
2,000 to 2,399 Square Feet....	7.0	128	8.4	10.0
2,400 to 2,999 Square Feet....	5.9	119	7.9	9.5
3,000 or More Square Feet.....	4.4	92	5.8	7.0
Energy Used in The Home--				
April 1982 through March 1983 (million Btu per household)				
50 or Less.....	12.2	189	11.9	14.1
51 to 75.....	13.6	218	14.1	16.6
76 to 100.....	12.5	211	14.0	16.5
101 to 125.....	11.4	187	12.3	14.6
126 to 150.....	9.4	164	11.0	13.0
151 or Over.....	13.1	246	17.1	20.4
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)				
600 or Less.....	12.7	180	11.6	13.7
601 to 800.....	11.8	177	11.5	13.5
801 to 1,000.....	12.9	216	14.0	16.5
1,001 to 1,200.....	11.4	192	12.8	15.2
1,201 to 1,600.....	13.6	249	16.7	19.8
1,601 or Over.....	9.7	202	13.6	16.4
Main Heating Fuel				
Natural Gas.....	40.8	654	44.3	52.3
Electricity.....	12.0	210	13.2	15.6
Fuel Oil or Kerosene.....	9.2	149	9.6	11.5
Wood.....	5.4	115	7.5	8.8
Liquefied Petroleum Gas.....	3.4	64	4.4	5.2
Other/None.....	1.3	23	1.4	1.7
Family Income 1983				
Less than \$ 5,000.....	3.2	33	2.3	2.7
\$ 5,000 - \$ 9,999.....	9.8	118	8.5	10.0
\$10,000 - \$14,999.....	10.5	144	9.8	11.6
\$15,000 - \$19,999.....	9.7	147	10.5	12.4
\$20,000 - \$24,999.....	8.7	144	9.4	11.2
\$25,000 - \$34,999.....	14.7	282	18.1	21.4
\$35,000 or More.....	15.6	347	21.6	25.8

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Gasoline Consumption and Miles per Gallon by Fuel Type

Table 2. Household Motor Gasoline Consumption and Miles per Gallon by Type of Fuel, 1983

Household Characteristics	Motor Gasoline			
	Leaded		Unleaded	
	Gallons Consumed (billions)	Miles per Gallon	Gallons Consumed (billions)	Miles per Gallon
Total	32.2	13.1	46.1	16.4
Census Region and Division				
Northeast.....	5.1	13.5	9.1	16.6
New England.....	1.3	14.6	2.5	17.4
Middle Atlantic.....	3.8	13.0	6.6	16.3
North Central.....	8.1	12.3	11.4	16.4
East North Central.....	5.3	12.3	7.8	16.4
West North Central.....	2.9	12.4	3.6	16.2
South.....	11.5	13.2	16.8	16.1
South Atlantic.....	5.6	13.8	8.4	16.5
East South Central.....	2.4	13.5	3.2	16.2
West South Central.....	3.5	12.1	5.2	15.3
West.....	7.4	13.4	8.7	16.7
Mountain.....	1.8	13.6	2.4	16.0
Pacific.....	5.7	13.3	6.3	17.0
Area Type				
Metropolitan.....	23.3	13.0	35.0	16.5
Central City.....	9.3	12.7	12.8	15.8
Outside Central City.....	14.0	13.2	22.2	16.9
Nonmetropolitan.....	9.0	13.1	11.1	15.9
Average Number of Vehicles 1983 (vehicle years)				
1 or Fewer.....	7.3	13.2	12.7	16.0
2.....	14.3	13.1	20.7	16.4
3 or More.....	10.6	13.0	12.7	16.7
Number of Drivers (Fall 1982)				
1.....	6.1	13.0	8.3	16.3
2.....	18.0	13.1	26.4	16.4
3 or More.....	8.0	13.1	11.3	16.5
None/No Answer.....	Q	Q	.2	16.6
Origin of Householder				
White.....	28.6	13.2	40.1	16.6
Black.....	3.1	11.8	4.8	14.2
Other.....	.6	15.2	1.2	16.3
Hispanic Descent				
Yes.....	1.9	12.4	2.3	15.0
No.....	30.4	13.1	43.9	16.4
Age of Householder				
24 Years and Under.....	2.5	12.9	3.3	17.0
25 to 34 Years.....	8.5	13.8	11.1	17.1
35 to 44 Years.....	7.5	13.0	9.8	16.6
45 to 59 Years.....	8.8	12.7	14.1	15.7
60 Years and Over.....	5.0	12.7	7.8	16.0
Household Size				
1 Person.....	3.2	13.5	5.0	16.9
2 Persons.....	8.5	13.1	13.8	16.5
3 Persons.....	6.6	13.2	8.7	16.5
4 Persons.....	7.2	13.4	11.1	16.5
5 or More Persons.....	6.7	12.3	7.5	15.4

See footnotes at end of table



Gasoline Consumption and Miles per Gallon by Fuel Type

Table 2. (Continued)

Household Characteristics	Motor Gasoline			
	Leaded		Unleaded	
	Gallons Consumed (billions)	Miles per Gallon	Gallons Consumed (billions)	Miles per Gallon
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)				
--Long-term Average				
<2,000 CDD and >7,000 HDD.....	3.6	12.6	4.7	16.7
<2,000 CDD and 5,500 to 7,000 HDD.....	7.1	12.9	11.4	16.5
<2,000 CDD and 4,000 to 5,499 HDD.....	7.6	13.6	11.5	16.6
<2,000 CDD and <4,000 HDD.....	8.8	13.3	10.8	16.2
>2,000 CDD and <4,000 HDD.....	5.0	12.4	7.8	15.8
Heating Degree-Days (HDD)				
April 1982 Through March 1983				
> 5,499 HDD.....	10.1	12.9	14.9	16.5
4,000 to 5,499 HDD.....	8.7	13.4	13.2	16.6
< 4,000 HDD.....	13.5	13.0	18.0	16.1
Measured Heated Square Footage of Residence				
Less than 600 Square Feet.....	2.2	13.4	2.0	16.8
600 to 999 Square Feet.....	7.8	12.9	9.3	16.7
1,000 to 1,599 Square Feet....	10.8	13.0	14.0	16.1
1,600 to 1,999 Square Feet....	3.8	13.3	6.9	16.5
2,000 to 2,399 Square Feet....	2.9	13.4	5.3	15.9
2,400 to 2,999 Square Feet....	2.9	12.4	4.8	16.2
3,000 or More Square Feet.....	1.7	13.8	3.8	16.7
Energy Used in The Home--				
April 1982 through March 1983 (million Btu per household)				
50 or Less.....	5.2	14.1	6.4	17.0
51 to 75.....	5.9	13.2	7.9	16.9
76 to 100.....	6.0	12.7	7.7	16.8
101 to 125.....	4.5	13.3	7.5	16.2
126 to 150.....	4.4	12.8	6.3	16.4
151 or Over.....	6.3	12.6	10.2	15.3
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)				
600 or Less.....	5.3	13.8	6.2	16.9
601 to 800.....	5.1	13.2	6.2	16.7
801 to 1,000.....	5.5	13.3	8.1	16.6
1,001 to 1,200.....	5.2	12.5	7.4	16.5
1,201 to 1,600.....	6.7	12.8	9.5	16.1
1,601 or Over.....	4.5	12.8	8.8	15.7
Main Heating Fuel				
Natural Gas.....	17.3	12.8	25.8	15.9
Electricity.....	4.7	13.3	8.2	17.2
Fuel Oil or Kerosene.....	3.9	13.3	5.5	17.0
Wood.....	3.8	13.4	3.5	17.2
Liquefied Petroleum Gas.....	2.0	13.2	2.2	15.7
Other/None.....	.5	14.3	.8	17.1

See footnotes at end of table



Gasoline Consumption and Miles per Gallon by Fuel Type

Table 2. (Continued)

Household Characteristics	Motor Gasoline			
	Leaded		Unleaded	
	Gallons Consumed (billions)	Miles per Gallon	Gallons Consumed (billions)	Miles per Gallon
Family Income 1983				
Less than \$ 5,000.....	1.2	13.1	1.0	15.2
\$ 5,000 - \$ 9,999.....	4.2	12.5	4.2	14.9
\$10,000 - \$14,999.....	4.7	13.0	5.0	16.1
\$15,000 - \$19,999.....	5.2	12.3	5.1	15.6
\$20,000 - \$24,999.....	3.8	13.4	5.4	16.4
\$25,000 - \$34,999.....	6.4	13.6	11.3	16.6
\$35,000 or More.....	6.7	13.4	14.0	17.1

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Average Motor Fuel Consumption and Expenditures

Table 3. Household Motor Fuel Consumption and Expenditures per Household, 1983

Household Characteristics	Number of Households (millions)	Number of Vehicles per Household	Averages per Household		
			Gallons Consumed	Miles Driven	Expenditures (dollars)
Total	72.2	1.8	1,112	16,830	1,317
Census Region and Division					
Northeast.....	13.9	1.7	1,044	16,324	1,254
New England.....	3.8	1.8	1,019	16,830	1,236
Middle Atlantic.....	10.1	1.7	1,054	16,135	1,261
North Central.....	18.3	1.8	1,104	16,299	1,314
East North Central.....	12.3	1.7	1,082	16,099	1,296
West North Central.....	6.0	1.9	1,149	16,711	1,352
South.....	24.7	1.8	1,178	17,689	1,385
South Atlantic.....	12.2	1.8	1,177	18,297	1,403
East South Central.....	4.9	1.9	1,160	17,430	1,379
West South Central.....	7.6	1.8	1,192	16,873	1,360
West.....	15.3	1.8	1,076	16,541	1,269
Mountain.....	4.0	1.8	1,074	16,255	1,245
Pacific.....	11.3	1.8	1,077	16,642	1,277
Area Type					
Metropolitan.....	54.2	1.8	1,098	16,768	1,299
Central City.....	22.8	1.7	989	14,520	1,167
Outside Central City.....	31.4	1.9	1,177	18,400	1,394
Nonmetropolitan.....	18.0	1.8	1,153	17,018	1,374
Average Number of Vehicles 1983 (vehicle years)					
1 or Fewer.....	30.6	1.0	664	9,975	790
2.....	29.6	2.0	1,217	18,490	1,440
3 or More.....	12.1	3.2	1,988	30,129	2,352
Number of Drivers (Fall 1982)					
1.....	20.9	1.2	699	10,459	831
2.....	39.7	1.9	1,145	17,369	1,355
3 or More.....	11.0	2.7	1,798	27,285	2,128
None/No Answer.....	.5	1.3	635	9,989	757
Origin of Householder					
White.....	63.8	1.8	1,103	16,897	1,307
Black.....	6.8	1.6	1,180	15,753	1,398
Other.....	1.6	1.9	1,176	18,758	1,394
Hispanic Descent					
Yes.....	3.5	1.7	1,211	16,860	1,418
No.....	68.7	1.8	1,107	16,828	1,312
Age of Householder					
24 Years and Under.....	5.2	1.6	1,126	17,315	1,327
25 to 34 Years.....	17.8	1.7	1,127	17,759	1,331
35 to 44 Years.....	13.4	1.9	1,323	20,167	1,567
45 to 59 Years.....	18.0	2.0	1,314	19,259	1,559
60 Years and Over.....	17.8	1.6	729	10,777	867
Household Size					
1 Person.....	12.6	1.2	669	10,446	799
2 Persons.....	23.7	1.7	964	14,822	1,144
3 Persons.....	12.5	2.0	1,249	18,930	1,472
4 Persons.....	13.7	2.0	1,364	21,031	1,621
5 or More Persons.....	9.6	2.1	1,520	21,421	1,790

See footnotes at end of table



Average Motor Fuel Consumption and Expenditures

Table 3. (Continued)

Household Characteristics	Number of Households (millions)	Number of Vehicles per Household	Averages per Household		
			Gallons Consumed	Miles Driven	Expenditures (dollars)
Annual Heating Degree-days (HDD) and Cooling Degree-days (CDD)					
--Long-term Average					
<2,000 CDD and >7,000 HDD.....	7.8	1.7	1,087	16,306	1,303
<2,000 CDD and 5,500 to 7,000 HDD.....	17.4	1.8	1,103	16,809	1,318
<2,000 CDD and 4,000 to 5,499 HDD.....	18.1	1.7	1,076	16,720	1,276
<2,000 CDD and <4,000 HDD.....	17.8	1.8	1,129	17,001	1,335
>2,000 CDD and <4,000 HDD.....	11.2	1.8	1,174	17,131	1,365
Heating Degree-days (HDD)					
April 1982 Through March 1983					
> 5,499 HDD.....	23.7	1.8	1,084	16,405	1,296
4,000 to 5,499 HDD.....	20.5	1.8	1,094	16,929	1,296
< 4,000 HDD.....	28.0	1.8	1,149	17,117	1,351
Measured Heated Square Footage of Residence					
Less than 600 Square Feet.....	4.8	1.4	910	13,692	1,075
600 to 999 Square Feet.....	18.4	1.5	948	14,316	1,117
1,000 to 1,599 Square Feet....	22.2	1.8	1,146	17,007	1,350
1,600 to 1,999 Square Feet....	9.5	2.0	1,156	17,983	1,377
2,000 to 2,399 Square Feet....	7.0	2.0	1,193	18,173	1,420
2,400 to 2,999 Square Feet....	5.9	2.1	1,341	20,084	1,604
3,000 or More Square Feet.....	4.4	2.2	1,312	20,834	1,578
Energy Used in The Home--					
April 1982 through March 1983 (million Btu per household)					
50 or Less.....	12.2	1.6	977	15,505	1,155
51 to 75.....	13.6	1.7	1,036	16,024	1,222
76 to 100.....	12.5	1.8	1,119	16,897	1,317
101 to 125.....	11.4	1.8	1,077	16,406	1,280
126 to 150.....	9.4	1.9	1,170	17,554	1,387
151 or Over.....	13.1	2.0	1,297	18,679	1,549
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)					
600 or Less.....	12.7	1.5	915	14,222	1,079
601 to 800.....	11.8	1.6	977	14,963	1,146
801 to 1,000.....	12.9	1.8	1,079	16,660	1,275
1,001 to 1,200.....	11.4	1.8	1,123	16,768	1,329
1,201 to 1,600.....	13.6	2.0	1,227	18,304	1,453
1,601 or Over.....	9.7	2.1	1,402	20,729	1,687
Main Heating Fuel					
Natural Gas.....	40.8	1.8	1,085	16,038	1,282
Electricity.....	12.0	1.7	1,098	17,466	1,299
Fuel Oil or Kerosene.....	9.2	1.7	1,037	16,113	1,246
Wood.....	5.4	2.2	1,379	21,276	1,629
Liquefied Petroleum Gas.....	3.4	1.9	1,270	18,651	1,503
Other/None.....	1.3	1.8	1,081	17,590	1,321
Family Income 1983					
Less than \$ 5,000.....	3.2	1.3	724	10,280	852
\$ 5,000 - \$ 9,999.....	9.8	1.5	864	11,975	1,020
\$10,000 - \$14,999.....	10.5	1.5	933	13,682	1,104
\$15,000 - \$19,999.....	9.7	1.7	1,087	15,226	1,277
\$20,000 - \$24,999.....	8.7	1.8	1,087	16,645	1,287
\$25,000 - \$34,999.....	14.7	1.9	1,236	19,252	1,461
\$35,000 or More.....	15.6	2.2	1,380	22,167	1,650

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

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Motor Fuel Consumption by Region

Table 4. Household Motor Fuel Consumption by Region, 1983 (Gallons per Household)

Household Characteristics	Northeast	North Central	South	West
Total	1,044	1,104	1,178	1,076
Area Type				
Metropolitan.....	1,034	1,089	1,175	1,067
Central City.....	806	980	1,157	920
Outside Central City.....	1,136	1,173	1,189	1,215
Nonmetropolitan.....	1,104	1,133	1,184	1,145
Average Number of Vehicles 1983 (vehicle years)				
1 or Fewer.....	610	661	713	649
2.....	1,221	1,186	1,282	1,146
3 or More.....	2,002	2,060	1,974	1,921
Number of Drivers (Fall 1982)				
1.....	665	684	725	706
2.....	1,036	1,106	1,233	1,144
3 or More.....	1,762	1,881	1,758	1,802
None/No Answer.....	Q	Q	Q	Q
Origin of Householder				
White.....	1,057	1,109	1,152	1,063
Black.....	943	979	1,293	1,202
Other.....	Q	Q	Q	1,158
Hispanic Percent				
Yes.....	921	1,118	1,088	1,443
No.....	1,049	1,103	1,182	1,040
Age of Householder				
24 Years and Under.....	1,030	1,087	1,134	1,192
25 to 34 Years.....	1,115	1,083	1,169	1,121
35 to 44 Years.....	1,154	1,336	1,417	1,300
45 to 59 Years.....	1,292	1,346	1,359	1,217
60 Years and Over.....	668	689	807	717
Household Size				
1 Person.....	640	684	697	645
2 Persons.....	894	933	1,012	979
3 Persons.....	1,095	1,301	1,290	1,257
4 Persons.....	1,262	1,303	1,464	1,376
5 or More Persons.....	1,449	1,505	1,570	1,529
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)				
--Long-term Average				
<2,000 CDD and >7,000 HDD.....	1,093	1,067	-	1,159
<2,000 CDD and 5,500 to 7,000 HDD.....	1,080	1,104	-	1,207
<2,000 CDD and 4,000 to 5,499 HDD.....	992	1,149	1,138	1,023
<2,000 CDD and <4,000 HDD.....	-	-	1,176	1,079
>2,000 CDD and <4,000 HDD.....	-	-	1,203	949
Heating Degree-Days (HDD) April 1982 Through March 1983				
> 5,499 HDD.....	1,079	1,066	-	1,191
4,000 to 5,499 HDD.....	1,003	1,211	1,130	1,025
< 4,000 HDD.....	-	-	1,194	1,062

See footnotes at end of table



Motor Fuel Consumption by Region

Table 4. (Continued)

Household Characteristics	Northeast	North Central	South	West
Measured Heated Square Footage of Residence				
Less than 600 Square Feet.....	692	943	1,057	861
600 to 999 Square Feet.....	968	926	977	919
1,000 to 1,599 Square Feet....	1,061	1,141	1,193	1,123
1,600 to 1,999 Square Feet....	1,110	1,089	1,191	1,250
2,000 to 2,399 Square Feet....	1,043	1,122	1,415	1,215
2,400 to 2,999 Square Feet....	1,233	1,248	1,638	1,264
3,000 or More Square Feet.....	1,070	1,392	1,425	1,541
Energy Used in The Home-- April 1982 through March 1983 (million Btu per household)				
50 or Less.....	1,084	1,013	1,046	813
51 to 75.....	1,015	949	1,104	1,000
76 to 100.....	922	1,027	1,203	1,219
101 to 125.....	992	999	1,137	1,188
126 to 150.....	1,015	1,102	1,370	1,199
151 or Over.....	1,153	1,315	1,423	1,420
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)				
600 or Less.....	981	899	936	900
601 to 800.....	902	964	998	991
801 to 1,000.....	824	982	1,107	1,353
1,001 to 1,200.....	1,009	983	1,259	1,201
1,201 to 1,600.....	1,078	1,302	1,248	1,317
1,601 or Over.....	1,191	1,515	1,635	1,430
Main Heating Fuel				
Natural Gas.....	993	1,078	1,150	1,075
Electricity.....	1,089	1,034	1,169	998
Fuel Oil or Kerosene.....	1,040	1,076	1,012	971
Wood.....	1,367	1,449	1,376	1,313
Liquefied Petroleum Gas.....	Q	1,304	1,292	1,239
Other/None.....	1,049	Q	1,162	1,116
Family Income 1983				
Less than \$ 5,000.....	647	698	771	727
\$ 5,000 - \$ 9,999.....	616	881	994	808
\$10,000 - \$14,999.....	853	897	958	1,018
\$15,000 - \$19,999.....	949	1,094	1,234	953
\$20,000 - \$24,999.....	957	992	1,271	1,059
\$25,000 - \$34,999.....	1,220	1,243	1,315	1,109
\$35,000 or More.....	1,358	1,424	1,356	1,385

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

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Motor Fuel Consumption by Income

**Table 5. Household Motor Fuel Consumption by Income, 1983
(Gallons per Household)**

Household Characteristics	Less Than \$5,000	\$5,000 - \$9,999	\$10,000 - \$14,999	\$15,000 - \$19,999	\$20,000 - \$24,999	\$25,000 - \$34,999	\$35,000 or More
Total	724	864	933	1,087	1,087	1,236	1,380
Census Region and Division							
Northeast	647	616	853	949	957	1,220	1,358
New England	Q	617	741	1,088	916	1,022	1,354
Middle Atlantic	735	616	887	902	973	1,306	1,360
North Central	698	881	897	1,094	992	1,243	1,424
East North Central	730	858	873	1,141	956	1,179	1,448
West North Central	653	958	953	1,000	1,081	1,360	1,385
South	771	994	958	1,234	1,271	1,315	1,356
South Atlantic	806	1,093	968	1,236	1,256	1,302	1,258
East South Central	652	961	983	1,257	1,062	1,392	1,458
West South Central	816	862	931	1,210	1,446	1,288	1,441
West	727	808	1,018	953	1,059	1,109	1,335
Mountain	Q	731	935	931	932	1,313	1,487
Pacific	767	837	1,041	961	1,110	1,025	1,357
Area Type							
Metropolitan	660	853	909	1,037	1,021	1,216	1,357
Central City	778	815	850	960	954	1,042	1,235
Outside Central City	552	890	954	1,104	1,074	1,332	1,424
Nonmetropolitan	830	891	975	1,213	1,307	1,313	1,508
Average Number of Vehicles 1983 (vehicle years)							
1 or Fewer	612	586	613	714	712	724	763
2	963	1,115	1,165	1,235	1,169	1,294	1,224
3 or More	Q	2,102	1,995	1,946	1,920	1,904	2,064
Number of Drivers (Fall 1982)							
1	599	609	615	732	696	865	978
2	987	1,004	1,045	1,148	1,162	1,190	1,210
3 or More	Q	1,728	1,608	1,631	1,611	1,829	1,988
None/No Answer	Q	Q	Q	Q	Q	Q	Q
Origin of Householder							
White	654	823	947	1,056	1,077	1,236	1,361
Black	873	1,083	910	1,415	1,211	1,202	1,578
Other	Q	Q	550	Q	1,060	Q	1,568
Hispanic Descent							
Yes	Q	1,060	1,263	918	1,431	1,218	1,539
No	704	853	912	1,101	1,077	1,237	1,373
Age of Householder							
24 Years and Under	1,376	1,074	1,183	1,044	1,064	1,130	1,144
25 to 34 Years	705	984	1,007	1,157	1,032	1,231	1,220
35 to 44 Years	1,060	998	1,075	1,357	1,232	1,385	1,464
45 to 59 Years	781	1,277	1,062	1,122	1,242	1,341	1,590
60 Years and Over	506	598	621	833	859	840	1,009
Household Size							
1 Person	634	549	546	694	684	793	977
2 Persons	734	755	827	930	1,031	1,064	1,153
3 Persons	927	1,191	1,101	1,115	1,254	1,298	1,438
4 Persons	Q	1,338	1,297	1,291	1,334	1,414	1,424
5 or More Persons	Q	1,227	1,220	1,609	1,280	1,523	1,885
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)							
--Long-term Average							
<2,000 CDD and >7,000 HDD	794	697	894	1,148	954	1,214	1,582
<2,000 CDD and 5,500 to 7,000 HDD	533	765	876	1,148	990	1,242	1,376
<2,000 CDD and 4,000 to 5,499 HDD	695	890	980	880	1,136	1,264	1,241
<2,000 CDD and <4,000 HDD	851	1,035	984	1,094	1,096	1,165	1,353
>2,000 CDD and <4,000 HDD	704	791	892	1,334	1,286	1,304	1,498

See footnotes at end of table



Motor Fuel Consumption by Income

Table 5. (Continued)

Household Characteristics	Less Than \$5,000	\$5,000 - \$9,999	\$10,000 - \$14,999	\$15,000 - \$19,999	\$20,000 - \$24,999	\$25,000 - \$34,999	\$35,000 or More
Heating Degree-Days (HDD)							
April 1982 Through March 1983							
> 5,499 HDD.....	652	704	891	1,162	990	1,229	1,399
4,000 to 5,499 HDD.....	698	926	985	895	1,110	1,257	1,298
< 4,000 HDD.....	800	939	930	1,176	1,164	1,225	1,422
Measured Heated Square Footage of Residence							
Less than 600 Square Feet....	643	753	774	946	992	1,068	1,375
600 to 999 Square Feet.....	707	736	944	1,018	923	1,087	1,183
1,000 to 1,599 Square Feet....	823	928	845	1,294	1,126	1,250	1,427
1,600 to 1,999 Square Feet....	668	866	1,042	962	1,147	1,271	1,393
2,000 to 2,399 Square Feet....	Q	794	1,092	1,170	1,019	1,286	1,341
2,400 to 2,999 Square Feet....	Q	1,503	1,112	980	1,124	1,467	1,505
3,000 or More Square Feet.....	Q	Q	Q	911	1,658	1,292	1,381
Energy Used in The Home--							
April 1982 through March 1983 (million Btu per household)							
50 or Less.....	769	698	882	1,109	1,061	1,110	1,308
51 to 75.....	649	916	879	1,274	932	1,123	1,156
76 to 100.....	721	769	1,042	1,025	1,081	1,387	1,400
101 to 125.....	621	921	883	1,026	1,011	1,199	1,284
126 to 150.....	Q	958	936	1,010	1,386	1,251	1,344
151 or Over.....	751	1,075	1,017	1,018	1,184	1,338	1,579
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)							
600 or Less.....	718	689	885	1,045	1,009	1,002	1,122
601 to 800.....	664	800	911	980	926	1,127	1,255
801 to 1,000.....	723	933	915	1,071	1,037	1,215	1,316
1,001 to 1,200.....	666	857	921	1,244	989	1,265	1,276
1,201 to 1,600.....	956	1,032	1,089	1,086	1,230	1,196	1,452
1,601 or Over.....	Q	1,122	889	1,136	1,455	1,585	1,562
Main Heating Fuel							
Natural Gas.....	651	883	915	982	1,064	1,182	1,361
Electricity.....	474	759	886	1,207	1,037	1,256	1,325
Fuel Oil or Kerosene.....	761	792	791	947	1,038	1,257	1,321
Wood.....	947	1,189	1,256	1,587	1,225	1,487	1,681
Liquefied Petroleum Gas.....	1,123	858	1,025	1,564	Q	1,500	1,667
Other/None.....	Q	Q	Q	Q	Q	Q	1,525

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Number of Households by Gallons of Motor Fuel Consumed

Table 6. Number of Households by Gallons of Motor Fuel Consumed per Household, 1983 (Million Households)

Household Characteristics	Total Households	250 or Less Gallons	251 to 500 Gallons	501 to 1,000 Gallons	1,001 to 1,500 Gallons	1,501 to 2,000 Gallons	2,001 and Over Gallons
Total	72.2	3.9	9.9	24.4	16.6	9.8	7.5
Census Region and Division							
Northeast	13.9	1.0	2.0	4.9	3.2	1.5	1.3
New England	3.8	.3	.7	1.3	.8	.3	.4
Middle Atlantic	10.1	.7	1.4	3.6	2.4	1.2	.9
North Central	18.3	.9	2.7	6.2	4.2	2.5	1.9
East North Central	12.3	.5	1.8	4.4	2.9	1.6	1.1
West North Central	6.0	.3	.9	1.8	1.3	.9	.8
South	24.7	1.2	3.0	8.0	5.9	3.6	2.9
South Atlantic	12.2	.4	1.6	4.1	2.8	1.8	1.4
East South Central	4.9	.5	.6	1.4	1.2	.7	.6
West South Central	7.6	.3	.8	2.5	1.9	1.1	.9
West	15.3	.9	2.2	5.4	3.3	2.1	1.4
Mountain	4.0	Q	.6	1.4	.7	.7	.4
Pacific	11.3	.7	1.6	4.0	2.6	1.4	1.1
Area Type							
Metropolitan	54.2	2.9	7.9	18.5	12.4	7.1	5.4
Central City	22.8	1.4	3.8	8.7	4.7	2.7	1.5
Outside Central City	31.4	1.5	4.1	9.8	7.7	4.4	3.9
Nonmetropolitan	18.0	1.0	2.0	5.9	4.2	2.7	2.1
Average Number of Vehicles 1983 (vehicle years)							
1 or Fewer	30.6	3.6	8.6	13.5	3.5	.9	.4
2	29.6	.3	1.3	10.1	10.5	4.8	2.5
3 or More	12.1	Q	Q	.8	2.6	4.1	4.6
Number of Drivers (Fall 1982)							
1	20.9	2.8	5.8	8.4	2.6	.8	.5
2	39.7	.9	3.8	14.1	11.5	6.0	3.4
3 or More	11.0	Q	Q	1.8	2.5	2.9	3.6
None/No Answer	.5	Q	Q	Q	Q	Q	Q
Origin of Householder							
White	63.8	3.5	8.8	21.3	15.1	8.5	6.6
Black	6.8	.4	.9	2.5	1.3	1.0	.7
Other	1.6	Q	Q	.6	.3	.3	Q
Hispanic Descent							
Yes	3.5	Q	.4	1.4	.7	.5	.5
No	68.7	3.8	9.6	23.0	15.9	9.3	7.0
Age of Householder							
24 Years and Under	5.2	Q	0.4	2.0	1.5	0.7	0.5
25 to 34 Years	17.8	0.4	1.9	6.6	5.0	2.3	1.7
35 to 44 Years	13.4	Q	1.1	4.1	3.6	2.4	2.1
45 to 59 Years	18.0	.4	1.6	5.8	4.2	3.1	2.8
60 Years and Over	17.8	2.7	4.9	6.0	2.3	1.3	.4
Household Size							
1 Person	12.6	2.1	3.5	4.8	1.5	.5	.3
2 Persons	23.7	1.3	4.0	9.6	5.0	2.5	1.4
3 Persons	12.5	Q	1.1	4.1	3.5	2.1	1.6
4 Persons	13.7	.3	1.1	3.5	4.0	2.7	2.2
5 or More Persons	9.6	Q	.4	2.4	2.6	2.1	2.0
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)							
--Long-term Average							
<2,000 CDD and >7,000 HDD	7.8	.4	1.1	2.8	1.7	1.0	.8
<2,000 CDD and 5,500 to 7,000 HDD	17.4	.9	2.3	6.0	4.4	1.9	1.8
<2,000 CDD and 4,000 to 5,499 HDD	18.1	1.1	2.7	6.1	4.1	2.5	1.6
<2,000 CDD and <4,000 HDD	17.8	.9	2.2	6.4	3.8	2.6	2.0
>2,000 CDD and <4,000 HDD	11.2	.7	1.6	3.1	2.7	1.8	1.3

See footnotes at end of table



Number of Households by Gallons of Motor Fuel Consumed

Table 6. (Continued)

Household Characteristics	Total Households	250 or Less Gallons	251 to 500 Gallons	501 to 1,000 Gallons	1,001 to 1,500 Gallons	1,501 to 2,000 Gallons	2,001 and Over Gallons
Heating Degree-Days (HDD)							
April 1982 Through March 1983							
> 5,499 HDD.....	23.7	1.3	3.4	8.3	5.6	2.8	2.4
4,000 to 5,499 HDD.....	20.5	1.1	2.9	7.0	4.7	2.8	1.9
< 4,000 HDD.....	28.0	1.5	3.6	9.2	6.3	4.2	3.2
Measured Heated Square Footage of Residence							
Less than 600 Square Feet.....	4.8	.6	.6	1.9	1.0	.4	.3
600 to 999 Square Feet.....	18.4	1.3	3.4	7.3	3.4	1.7	1.4
1,000 to 1,599 Square Feet....	22.2	1.3	3.0	7.0	5.2	3.3	2.4
1,600 to 1,999 Square Feet....	9.5	.3	1.5	2.9	2.2	1.5	1.1
2,000 to 2,399 Square Feet....	7.0	Q	.6	2.4	2.1	1.1	.8
2,400 to 2,999 Square Feet....	5.9	Q	.5	1.9	1.5	.9	1.1
3,000 or More Square Feet.....	4.4	Q	.4	1.0	1.4	1.0	.5
Energy Used in The Home--							
April 1982 through March 1983							
(million Btu per household)							
50 or Less.....	12.2	1.2	1.7	4.5	2.6	1.4	0.7
51 to 75.....	13.6	.6	2.2	5.3	2.9	1.5	1.0
76 to 100.....	12.5	.6	2.2	3.8	2.9	1.6	1.4
101 to 125.....	11.4	.7	1.5	4.2	2.5	1.5	1.0
126 to 150.....	9.4	.3	1.0	3.1	2.6	1.3	1.1
151 or Over.....	13.1	.6	1.3	3.5	3.1	2.5	2.2
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)							
600 or Less.....	12.7	1.1	2.4	4.7	2.6	1.1	.7
601 to 800.....	11.8	1.0	1.8	4.5	2.3	1.4	.8
801 to 1,000.....	12.9	.5	2.0	4.4	3.3	1.7	1.0
1,001 to 1,200.....	11.4	.5	1.5	4.0	3.0	1.3	1.1
1,201 to 1,600.....	13.6	.4	1.4	4.3	3.3	2.4	1.8
1,601 or Over.....	9.7	.4	.9	2.5	2.1	1.8	2.0
Main Heating Fuel							
Natural Gas.....	40.8	2.2	5.7	14.1	9.1	5.7	3.9
Electricity.....	12.0	.8	1.4	4.5	2.8	1.4	1.1
Fuel Oil or Kerosene.....	9.2	.5	1.7	3.2	2.0	.9	.9
Wood.....	5.4	Q	.4	1.4	1.5	1.1	.8
Liquefied Petroleum Gas.....	3.4	Q	.5	.8	.8	.5	.7
Other/None.....	1.3	Q	Q	.4	.3	Q	Q
Family Income 1983							
Less than \$ 5,000.....	3.2	.6	.9	.9	.4	.3	Q
\$ 5,000 - \$ 9,999.....	9.8	1.4	2.2	3.0	1.6	1.0	.5
\$10,000 - \$14,999.....	10.5	.6	2.3	4.0	1.7	1.1	.8
\$15,000 - \$19,999.....	9.7	.5	1.4	3.7	2.1	1.0	1.0
\$20,000 - \$24,999.....	8.7	Q	.9	3.8	2.0	1.0	.7
\$25,000 - \$34,999.....	14.7	.4	1.2	4.5	4.5	2.4	1.8
\$35,000 or More.....	15.6	.3	1.0	4.4	4.4	3.0	2.6

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Average Fuel Consumption and Expenditures per Vehicle and Average Miles and Price per Gallon

Table 7. Household Motor Fuel Consumption and Expenditures per Vehicle, Miles per Gallon, and Price per Gallon, 1983

Household Characteristics	Number of Vehicles (millions)	Averages per Vehicle			Averages per Gallon	
		Gallons Consumed	Miles Driven	Expenditures (dollars)	Miles per Gallon	Price (dollars)
Total	129.3	621	9,399	736	15.1	1.18
Census Region and Division						
Northeast.....	23.9	609	9,511	731	15.6	1.20
New England.....	6.6	582	9,612	706	16.5	1.21
Middle Atlantic.....	17.3	619	9,472	740	15.3	1.20
North Central.....	32.5	620	9,153	738	14.8	1.19
East North Central.....	21.3	627	9,329	751	14.9	1.20
West North Central.....	11.3	607	8,823	714	14.5	1.18
South.....	45.1	644	9,674	758	15.0	1.18
South Atlantic.....	22.2	647	10,064	772	15.6	1.19
East South Central.....	9.2	616	9,258	733	15.0	1.19
West South Central.....	13.7	659	9,323	751	14.2	1.14
West.....	27.7	595	9,144	701	15.4	1.18
Mountain.....	7.4	585	8,849	678	15.1	1.16
Pacific.....	20.4	599	9,250	710	15.4	1.19
Area Type						
Metropolitan.....	96.3	618	9,430	730	15.3	1.18
Central City.....	37.6	600	8,799	707	14.7	1.18
Outside Central City.....	58.7	629	9,835	745	15.6	1.18
Nonmetropolitan.....	32.9	631	9,308	751	14.8	1.19
Average Number of Vehicles 1983 (vehicle years)						
1 or Fewer.....	31.3	648	9,734	771	15.0	1.19
2.....	58.9	611	9,285	723	15.2	1.18
3 or More.....	39.0	614	9,303	726	15.2	1.18
Number of Drivers (Fall 1982)						
1.....	25.1	582	8,708	692	15.0	1.19
2.....	73.9	615	9,334	728	15.2	1.18
3 or More.....	29.6	672	10,196	795	15.2	1.18
None/No Answer.....	.7	477	7,510	569	15.7	1.19
Origin of Householder						
White.....	115.3	610	9,347	723	15.3	1.18
Black.....	11.0	734	9,793	869	13.3	1.18
Other.....	3.0	625	9,973	741	16.0	1.19
Hispanic Descent						
Yes.....	5.8	732	10,188	857	13.9	1.17
No.....	123.5	616	9,362	730	15.2	1.19
Age of Householder						
24 Years and Under.....	8.3	710	10,908	836	15.4	1.18
25 to 34 Years.....	30.4	658	10,370	777	15.8	1.18
35 to 44 Years.....	26.1	683	10,405	809	15.2	1.18
45 to 59 Years.....	36.8	641	9,404	761	14.7	1.19
60 Years and Over.....	27.7	468	6,926	557	14.8	1.19
Household Size						
1 Person.....	15.2	555	8,664	663	15.6	1.19
2 Persons.....	41.1	557	8,570	661	15.4	1.19
3 Persons.....	25.0	628	9,516	740	15.2	1.18
4 Persons.....	28.0	667	10,288	793	15.4	1.19
5 or More Persons.....	20.0	729	10,268	858	14.1	1.18
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)						
--Long-Term Averages						
<2,000 CDD and >7,000 HDD.....	13.6	622	9,333	746	15.0	1.20
<2,000 CDD and 5,500 to 7,000 HDD.....	31.3	613	9,335	732	15.2	1.19
<2,000 CDD and 4,000 to 5,499 HDD.....	31.4	619	9,627	735	15.5	1.19
<2,000 CDD and <4,000 HDD.....	32.8	612	9,217	724	15.1	1.18
>2,000 CDD and <4,000 HDD.....	20.2	650	9,485	756	14.6	1.16



Average Fuel Consumption and Expenditures per Vehicle and Average Miles and Price per Gallon

Table 7. (Continued)

Household Characteristics	Number of Vehicles (millions)	Averages per Vehicle			Averages per Gallon	
		Gallons Consumed	Miles Driven	Expenditures (dollars)	Miles per Gallon	Price (dollars)
Heating Degree-Days (HDD)						
April 1982 Through March 1983						
> 5,499 HDD.....	41.9	614	9,298	734	15.1	1.20
4,000 to 5,499 HDD.....	36.1	619	9,585	734	15.5	1.19
< 4,000 HDD.....	51.3	628	9,351	738	14.9	1.18
Measured Heated Square Footage of Residence						
Less than 600 Square Feet.....	6.6	656	9,862	774	15.0	1.18
600 to 999 Square Feet.....	27.3	639	9,650	753	15.1	1.18
1,000 to 1,599 Square Feet....	40.6	625	9,277	736	14.8	1.18
1,600 to 1,999 Square Feet....	18.8	584	9,091	696	15.6	1.19
2,000 to 2,399 Square Feet....	13.8	608	9,261	723	15.2	1.19
2,400 to 2,999 Square Feet....	12.4	642	9,610	767	15.0	1.20
3,000 or More Square Feet.....	9.7	593	9,418	713	15.9	1.20
Energy Used in The Home--						
April 1982 through March 1983						
(million Btu per household)						
50 or Less.....	19.4	614	9,743	726	15.9	1.18
51 to 75.....	22.8	616	9,530	727	15.5	1.18
76 to 100.....	22.2	630	9,517	742	15.1	1.18
101 to 125.....	20.6	596	9,079	708	15.2	1.19
126 to 150.....	17.6	623	9,344	738	15.0	1.19
151 or Over.....	26.6	641	9,222	765	14.4	1.19
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)						
600 or Less.....	18.6	621	9,653	733	15.5	1.18
601 to 800.....	19.4	595	9,121	699	15.3	1.17
801 to 1,000.....	23.1	604	9,329	714	15.4	1.18
1,001 to 1,200.....	20.9	615	9,185	728	14.9	1.18
1,201 to 1,600.....	26.6	627	9,349	742	14.9	1.18
1,601 or Over.....	20.6	662	9,793	797	14.8	1.20
Main Heating Fuel						
Natural Gas.....	71.9	615	9,094	727	14.8	1.18
Electricity.....	20.5	644	10,247	762	15.9	1.18
Fuel Oil or Kerosene.....	16.0	598	9,293	719	15.5	1.20
Wood.....	11.8	633	9,762	748	15.4	1.18
Liquefied Petroleum Gas.....	6.7	654	9,604	774	14.7	1.18
Other/None.....	2.4	595	9,683	727	16.3	1.22
Family Income 1983						
Less than \$ 5,000.....	4.1	564	8,016	664	14.2	1.18
\$ 5,000 - \$ 9,999.....	14.4	592	8,208	699	13.9	1.18
\$10,000 - \$14,999.....	16.1	608	8,919	719	14.7	1.18
\$15,000 - \$19,999.....	16.4	642	8,993	754	14.0	1.17
\$20,000 - \$24,999.....	15.4	613	9,386	726	15.3	1.18
\$25,000 - \$34,999.....	28.3	641	9,981	757	15.6	1.18
\$35,000 or More.....	34.6	623	10,004	745	16.1	1.20

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

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Miles Driven per Vehicle

Table 8. Household Motor Vehicle Miles Driven per Vehicle for Most Used Vehicle and Number Two Vehicle by Number of Vehicles per Household, 1983

Household Characteristics	1-Vehicle-Household		2-Vehicle-Household			3-or-More-Vehicle-Household		
	Number of Households (millions)	# 1 Vehicle (Most Used Vehicle)	Number of Households (millions)	# 1 Vehicle (Most Used Vehicle)	# 2 Vehicle	Number of Households (millions)	# 1 Vehicle (Most Used Vehicle)	# 2 Vehicle
Total	30.6	9,209	29.6	11,432	6,158	12.1	13,635	8,670
Census Region and Division								
Northeast.....	6.5	8,452	5.4	11,706	6,437	2.0	14,019	9,308
New England.....	1.7	8,148	1.5	11,742	6,619	.6	15,277	9,898
Middle Atlantic.....	4.8	8,560	3.9	11,692	6,366	1.4	13,519	9,073
North Central.....	7.8	9,388	7.6	10,945	5,683	2.9	13,538	8,719
East North Central.....	5.6	9,626	4.9	10,914	5,718	1.8	13,864	8,827
West North Central.....	2.1	8,762	2.6	11,002	5,617	1.2	13,052	8,558
South.....	9.9	9,565	10.3	11,786	6,488	4.4	13,532	8,764
South Atlantic.....	5.0	9,947	5.0	12,705	6,818	2.2	13,406	8,763
East South Central.....	1.7	8,263	2.3	11,024	6,107	.8	14,527	9,677
West South Central.....	3.2	9,683	3.0	10,852	6,237	1.4	13,129	8,206
West.....	6.3	9,215	6.3	11,200	5,945	2.7	13,632	7,996
Mountain.....	1.6	8,802	1.7	10,517	5,724	.7	14,273	8,187
Pacific.....	4.7	9,356	4.6	11,447	6,024	2.0	13,395	7,925
Area Type								
Metropolitan.....	23.2	9,135	22.1	11,509	6,278	8.9	13,637	8,645
Central City.....	11.4	8,870	8.6	10,494	5,701	2.8	11,978	8,187
Outside Central City.....	11.9	9,390	13.5	12,159	6,648	6.1	14,406	8,857
Nonmetropolitan.....	7.3	9,443	7.5	11,205	5,802	3.2	13,631	8,742
Number of Drivers (Fall 1982)								
1.....	17.3	8,403	3.0	11,023	4,586	.6	13,151	6,849
2.....	11.6	10,330	22.8	11,192	6,191	5.2	12,737	7,742
3 or More.....	1.3	10,532	3.5	13,393	7,383	6.2	14,444	9,636
None/No Answer.....	.3	6,532	q	q	q	q	q	q
Origin of Householder								
White.....	26.0	9,125	27.1	11,453	6,137	10.7	13,472	8,587
Black.....	3.9	9,518	1.9	11,405	6,539	1.0	15,542	9,165
Other.....	.6	10,761	.6	10,590	5,920	.3	13,204	9,858
Hispanic Descent								
Yes.....	1.6	10,146	1.5	12,315	6,364	.4	16,924	8,835
No.....	29.0	9,158	28.1	11,384	6,146	11.7	13,531	8,665
Age of Householder								
24 Years and Under.....	2.7	10,619	2.0	12,160	6,771	0.5	14,654	11,224
25 to 34 Years.....	7.5	11,025	8.1	12,231	6,753	2.2	13,783	8,239
35 to 44 Years.....	4.6	10,901	5.9	13,189	6,933	2.9	13,509	9,057
45 to 59 Years.....	5.9	9,339	7.4	11,286	6,121	4.7	14,416	9,065
60 Years and Over.....	9.9	6,594	6.1	8,611	4,460	1.7	11,259	6,778
Household Size								
1 Person.....	10.4	8,163	1.8	11,623	4,418	.4	14,577	6,903
2 Persons.....	9.8	8,943	11.3	10,101	5,560	2.7	12,942	7,792
3 Persons.....	3.7	10,183	5.7	11,421	6,277	3.2	13,325	8,498
4 Persons.....	3.7	10,515	7.0	13,114	7,019	3.0	13,786	9,241
5 or More Persons.....	3.0	10,877	3.8	12,216	6,976	2.7	14,365	9,379

See footnotes at end of table



Miles Driven per Vehicle

Table 8. (Continued)

Household Characteristics	1-Vehicle-Household		2-Vehicle-Household			3-or-More-Vehicle-Household		
	Number of Households (millions)	# 1 Vehicle (Most Used Vehicle)	Number of Households (millions)	# 1 Vehicle (Most Used Vehicle)	# 2 Vehicle	Number of Households (millions)	# 1 Vehicle (Most Used Vehicle)	# 2 Vehicle
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)								
--Long-term Average								
<2,000 CDD and >7,000 HDD.....	3.7	9,315	2.7	11,487	5,706	1.3	14,432	8,961
<2,000 CDD and 5,500 to 7,000 HDD.....	7.2	9,287	7.4	11,224	6,039	2.7	13,305	8,800
<2,000 CDD and 4,000 to 5,499 HDD.....	8.2	8,896	7.1	12,102	6,410	2.9	13,822	8,820
<2,000 CDD and <4,000 HDD.....	6.8	9,689	7.7	10,889	5,936	3.3	13,371	8,282
>2,000 CDD and <4,000 HDD.....	4.7	8,853	4.6	11,614	6,597	1.9	13,734	8,721
Heating Degree-Days (HDD)								
April 1982 Through March 1983								
> 5,499 HDD.....	10.7	9,317	9.3	11,287	5,833	3.7	13,743	8,711
4,000 to 5,499 HDD.....	8.9	8,962	8.2	11,958	6,444	3.4	13,470	8,881
< 4,000 HDD.....	11.0	9,303	12.1	11,186	6,214	4.9	13,668	8,494
Measured Heated Square Footage of Residence								
Less than 600 Square Feet.....	3.3	9,555	1.1	11,583	5,898	.3	12,313	9,038
600 to 999 Square Feet.....	11.1	9,395	6.0	11,777	6,281	1.3	13,263	7,711
1,000 to 1,599 Square Feet.....	8.6	8,794	9.5	11,393	5,971	4.1	13,796	8,732
1,600 to 1,999 Square Feet.....	3.0	8,436	4.3	11,035	6,178	2.2	13,678	8,669
2,000 to 2,399 Square Feet.....	2.0	10,140	3.7	11,464	6,010	1.3	12,930	8,445
2,400 to 2,999 Square Feet.....	1.6	10,071	2.7	11,701	6,300	1.6	14,116	8,974
3,000 or More Square Feet.....	.8	8,485	2.2	10,965	6,793	1.4	13,850	9,156
Energy Used in The Home--								
April 1982 through March 1983 (million Btu per household)								
50 or Less.....	6.5	9,548	4.4	12,384	6,128	1.3	13,126	8,286
51 to 75.....	6.7	9,481	5.0	11,654	6,062	2.0	12,754	8,774
76 to 100.....	5.3	8,742	5.2	11,578	6,220	2.0	14,575	8,879
101 to 125.....	4.4	8,551	5.3	11,298	5,859	1.7	14,024	8,328
126 to 150.....	3.4	9,682	4.1	10,709	6,261	1.9	14,333	8,312
151 or Over.....	4.2	9,150	5.7	11,009	6,409	3.2	13,183	9,018
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)								
600 or Less.....	7.8	9,417	3.7	11,676	5,860	1.1	13,717	7,876
601 to 800.....	6.1	9,158	4.3	11,655	5,872	1.4	11,914	8,080
801 to 1,000.....	5.2	9,471	5.6	11,309	6,052	2.1	13,705	8,167
1,001 to 1,200.....	4.2	8,745	5.3	11,365	5,887	1.9	13,409	8,391
1,201 to 1,600.....	4.4	9,099	6.3	11,088	6,387	2.9	13,917	9,048
1,601 or Over.....	2.7	9,123	4.3	11,749	6,844	2.7	14,285	9,479
Main Heating Fuel								
Natural Gas.....	18.1	9,194	16.0	10,775	5,954	6.6	13,376	8,359
Electricity.....	5.3	9,636	5.3	12,667	6,686	1.4	14,668	9,253
Fuel Oil or Kerosene.....	4.1	8,613	4.0	11,319	6,031	1.2	14,435	9,457
Wood.....	1.2	9,382	2.5	12,744	6,185	1.7	13,473	8,910
Liquefied Petroleum Gas.....	1.3	9,239	1.3	12,346	6,728	.9	13,333	8,738
Other/None.....	.5	9,567	.5	11,282	6,517	.3	13,155	8,156
Family Income 1983								
Less than \$ 5,000.....	2.5	7,632	.4	9,504	4,925	Q	Q	Q
\$ 5,000 - \$ 9,999.....	6.4	7,581	2.6	9,861	5,148	.9	13,701	8,050
\$10,000 - \$14,999.....	6.2	8,704	3.0	10,581	5,256	1.2	13,467	8,232
\$15,000 - \$19,999.....	4.3	9,582	4.2	10,388	5,546	1.1	12,545	7,602
\$20,000 - \$24,999.....	3.6	10,267	3.8	10,867	5,978	1.3	13,259	8,541
\$25,000 - \$34,999.....	4.4	10,882	7.6	12,559	6,480	2.7	13,115	8,772
\$35,000 or More.....	3.1	10,761	8.0	12,109	6,993	4.6	14,513	9,215

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Miles per Gallon by Number of Household Vehicles

Table 9. Household Motor Vehicle Miles per Gallon for Most Used Vehicle and Number Two Vehicle by Number of Vehicles per Household, 1983 (Miles per Gallon)

Household Characteristics	1-Vehicle-Household	2-Vehicle-Household		3-or-More-Vehicle-Household	
	# 1 Vehicle (Most Used Vehicle)	# 2 Vehicle	# 1 Vehicle (Most Used Vehicle)	# 2 Vehicle	
Total	15.0	15.7	14.4	15.7	15.0
Census Region and Division					
Northeast.....	15.0	16.3	14.5	17.5	15.8
New England.....	16.0	17.8	14.8	18.1	16.1
Middle Atlantic.....	14.6	15.9	14.4	17.2	15.6
North Central.....	15.5	15.2	13.8	14.7	14.2
East North Central.....	15.7	15.3	13.7	14.2	14.3
West North Central.....	14.7	15.0	13.9	15.6	14.1
South.....	14.5	15.4	14.5	16.0	15.5
South Atlantic.....	15.3	15.7	15.2	17.0	15.3
East South Central.....	15.3	15.5	13.9	14.8	14.5
West South Central.....	13.1	14.7	13.8	15.5	15.1
West.....	15.3	16.4	14.8	15.2	14.8
Mountain.....	14.8	15.7	14.7	16.4	14.9
Pacific.....	15.5	16.6	14.8	14.8	14.8
Area Type					
Metropolitan.....	15.1	15.8	14.7	15.7	15.1
Central City.....	14.5	15.0	14.4	14.7	14.8
Outside Central City.....	15.6	16.2	14.9	16.2	15.3
Nonmetropolitan.....	14.8	15.5	13.4	15.7	14.8
Number of Drivers (Fall 1982)					
1.....	14.9	15.5	13.9	16.2	14.9
2.....	15.3	15.6	14.5	15.8	14.6
3 or More.....	13.5	16.6	14.1	15.6	15.3
None/No Answer.....	16.4	Q	Q	Q	Q
Origin of Householder					
White.....	15.3	16.0	14.4	15.9	15.1
Black.....	13.4	12.3	13.4	14.0	14.7
Other.....	15.0	17.5	16.0	17.2	13.8
Hispanic Descent					
Yes.....	14.4	13.6	14.3	12.8	15.1
No.....	15.0	15.9	14.4	15.9	15.0
Age of Householder					
24 Years and Under.....	14.6	15.5	15.9	16.9	15.4
25 to 34 Years.....	15.6	16.5	15.0	16.6	15.3
35 to 44 Years.....	15.5	15.8	14.3	16.0	15.0
45 to 59 Years.....	14.4	15.0	13.6	15.3	14.9
60 Years and Over.....	14.6	15.4	14.1	14.9	15.1
Household Size					
1 Person.....	15.5	16.6	14.1	16.7	16.0
2 Persons.....	15.3	16.0	14.8	16.3	14.0
3 Persons.....	14.3	16.1	14.2	15.9	15.3
4 Persons.....	15.6	16.0	14.8	15.3	15.7
5 or More Persons.....	13.3	13.7	13.2	15.3	14.9

See footnotes at end of table



Miles per Gallon by Number of Household Vehicles

Table 9. (Continued)

Household Characteristics	1-Vehicle-Household		2-Vehicle-Household		3-or-More-Vehicle-Household	
	# 1 Vehicle (Most Used Vehicle)		# 2 Vehicle		# 1 Vehicle (Most Used Vehicle)	# 2 Vehicle
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)						
--Long-term Average						
<2,000 CDD and >7,000 HDD....	15.4	16.1	13.7	15.4	13.9	
<2,000 CDD and 5,500 to 7,000 HDD.....	15.7	15.7	13.9	15.9	15.0	
<2,000 CDD and 4,000 to 5,499 HDD.....	15.1	16.1	14.9	16.8	15.0	
<2,000 CDD and <4,000 HDD....	14.8	16.1	14.4	14.7	15.2	
>2,000 CDD and <4,000 HDD....	13.7	14.4	14.8	16.0	15.6	
Heating Degree-Days (HDD)						
April 1982 Through March 1983						
> 5,499 HDD.....	15.4	15.8	13.9	15.8	14.5	
4,000 to 5,499 HDD.....	15.3	16.0	14.7	16.6	14.8	
< 4,000 HDD.....	14.3	15.4	14.6	15.1	15.7	
Measured Heated Square Footage of Residence						
Less than 600 Square Feet....	14.2	16.5	15.1	17.0	14.7	
600 to 999 Square Feet.....	15.5	15.4	14.1	15.1	14.0	
1,000 to 1,599 Square Feet....	14.5	15.3	14.2	15.0	15.2	
1,600 to 1,999 Square Feet....	16.0	16.2	15.1	16.6	14.9	
2,000 to 2,399 Square Feet....	14.4	16.1	14.6	16.4	14.5	
2,400 to 2,999 Square Feet....	15.7	15.7	13.4	15.5	14.9	
3,000 or More Square Feet....	13.7	16.1	15.3	16.6	16.5	
Energy Used in The Home--						
April 1982 through March 1983 (million Btu per household)						
50 or Less.....	15.5	17.4	14.9	16.4	14.6	
51 to 75.....	15.5	15.5	14.8	16.6	15.4	
76 to 100.....	15.2	15.1	14.3	16.4	15.3	
101 to 125.....	15.1	15.5	14.6	16.7	15.0	
126 to 150.....	14.4	16.0	14.7	15.3	14.6	
151 or Over.....	13.6	15.2	13.5	14.3	15.1	
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)						
600 or Less.....	15.1	16.4	15.4	16.5	14.2	
601 to 800.....	15.4	15.6	14.4	16.1	15.2	
801 to 1,000.....	15.2	16.5	14.6	15.7	14.6	
1,001 to 1,200.....	14.7	15.3	13.9	16.4	14.8	
1,201 to 1,600.....	14.4	15.5	14.5	15.5	15.5	
1,601 or Over.....	14.6	15.1	13.7	15.1	15.3	
Main Heating Fuel						
Natural Gas.....	14.5	15.4	14.2	15.1	14.8	
Electricity.....	16.3	16.0	15.3	17.1	14.9	
Fuel Oil or Kerosene.....	15.4	16.0	13.8	16.9	16.8	
Wood.....	16.5	16.4	14.4	15.6	15.1	
Liquefied Petroleum Gas.....	14.1	15.4	14.4	15.5	14.6	
Other/None.....	16.3	14.8	16.9	20.5	15.8	
Family Income 1983						
Less than \$ 5,000.....	13.4	16.4	13.1	Q	Q	
\$ 5,000 - \$ 9,999.....	13.8	14.4	13.2	13.2	14.8	
\$10,000 - \$14,999.....	15.1	14.5	14.2	15.6	13.6	
\$15,000 - \$19,999.....	14.8	13.5	13.4	14.7	13.6	
\$20,000 - \$24,999.....	15.7	15.8	14.6	15.3	14.7	
\$25,000 - \$34,999.....	16.4	16.1	14.3	16.1	15.6	
\$35,000 or More.....	15.5	17.4	15.3	16.5	15.4	

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Miles per Gallon by Model Year

Table 10. Household Motor Fuel Consumption per Vehicle and Miles per Gallon by Vehicle Model Year, 1983

Household Characteristics	1979 or Later			1974 to 1978			1973 or Earlier			No Answer
	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)
Total	44.8	619	18.6	48.4	663	13.7	35.2	567	12.7	0.8
Census Region and Division										
Northeast.....	9.3	596	19.1	9.1	658	13.7	5.3	550	12.9	Q
New England.....	2.7	555	19.6	2.5	624	15.1	1.4	564	13.3	Q
Middle Atlantic.....	6.6	612	19.0	6.6	671	13.2	3.9	545	12.8	Q
North Central.....	11.6	603	18.4	13.1	662	13.3	7.8	573	12.1	Q
East North Central.....	7.5	600	18.6	9.1	675	13.4	4.6	577	12.0	Q
West North Central.....	4.1	608	18.0	4.0	632	13.0	3.2	568	12.2	Q
South.....	15.5	652	18.2	17.1	687	13.7	12.1	578	12.7	.4
South Atlantic.....	7.7	652	18.8	8.2	679	14.5	6.1	606	12.8	.3
East South Central.....	2.7	660	18.1	3.6	656	13.7	2.9	531	13.3	Q
West South Central.....	5.2	647	17.3	5.4	722	12.5	3.1	567	11.8	Q
West.....	8.5	606	19.0	9.1	623	14.5	10.0	559	12.9	Q
Mountain.....	2.3	652	17.8	2.8	593	13.8	2.2	506	13.4	Q
Pacific.....	6.2	589	19.4	6.3	636	14.8	7.7	574	12.8	Q
Area Type										
Metropolitan.....	34.2	616	18.7	35.9	651	13.9	25.7	575	12.5	.5
Central City.....	11.9	581	18.1	14.7	629	13.7	10.8	584	12.3	.2
Outside Central City.....	22.4	634	19.0	21.2	667	14.1	14.9	568	12.6	.3
Nonmetropolitan.....	10.6	630	18.2	12.5	695	13.1	9.5	547	13.1	.3
Average Number of Vehicles 1983 (vehicle years)										
1 or Fewer.....	10.8	614	18.8	12.2	686	13.6	8.1	636	12.5	.2
2.....	21.7	613	18.5	21.8	636	13.8	15.1	574	12.3	.4
3 or More.....	12.3	634	18.6	14.4	683	13.7	12.0	513	13.2	Q
Number of Drivers (Fall 1982)										
1.....	7.7	590	19.1	9.1	628	13.5	8.0	527	12.4	.3
2.....	26.4	616	18.5	27.5	649	13.8	19.7	566	12.5	.3
3 or More.....	10.5	651	18.4	11.6	723	13.5	7.3	624	13.3	Q
None/No answer.....	.3	455	19.6	.2	669	14.6	Q	Q	Q	Q
Origin of Householder										
White.....	40.5	615	18.8	43.2	655	13.7	31.0	542	12.9	.6
Black.....	3.2	653	16.7	4.2	752	13.0	3.4	803	11.1	Q
Other.....	1.2	668	17.2	1.0	626	15.4	.8	561	14.4	Q
Hispanic Descent										
Yes.....	1.8	690	16.6	2.3	722	13.1	1.6	804	12.3	Q
No.....	43.1	616	18.7	46.1	660	13.7	33.6	556	12.7	0.7
Age of Householder										
24 Years and Under.....	2.6	629	20.0	3.0	756	14.2	2.6	739	12.6	Q
25 to 34 Years.....	10.8	664	18.9	11.7	686	14.4	7.8	610	13.2	.2
35 to 44 Years.....	9.2	672	19.1	9.9	713	13.8	6.8	645	12.3	Q
45 to 59 Years.....	13.1	626	17.9	13.9	704	13.0	9.6	575	12.7	Q
60 Years and Over.....	9.1	497	18.0	9.9	499	13.6	8.4	403	12.3	Q
Household Size										
1 Person.....	5.5	587	19.2	4.9	596	13.9	4.7	480	12.7	Q
2 Persons.....	14.9	573	18.6	14.8	594	14.0	11.0	485	12.5	.3
3 Persons.....	8.5	622	18.7	9.9	650	13.8	6.5	603	12.7	Q
4 Persons.....	10.1	644	18.7	10.8	717	13.8	6.9	623	13.2	.2
5 or More Persons.....	5.8	720	17.6	8.1	772	12.9	6.0	682	12.3	Q

See footnotes at end of table



Miles per Gallon by Model Year

Table 10. (Continued)

Household Characteristics	1979 or Later			1974 to 1978			1973 or Earlier			No Answer
	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)										
--Long-term Average										
<2,000 CDD and >7,000 HDD.....	5.1	571	19.0	5.0	706	13.1	3.4	578	12.5	Q
<2,000 CDD and 5,500 to 7,000 HDD.....	11.2	618	18.6	12.7	642	13.7	7.2	555	12.6	Q
<2,000 CDD and 4,000 to 5,499 HDD.....	11.2	618	19.0	12.1	669	13.8	7.9	548	13.1	Q
<2,000 CDD and <4,000 HDD.....	9.7	617	18.7	11.1	653	14.2	11.7	569	12.8	.3
>2,000 CDD and <4,000 HDD.....	7.6	657	17.4	7.6	673	13.4	4.9	605	11.9	Q
Heating Degree-Days (HDD)										
April 1982 Through March 1983										
> 5,499 HDD.....	15.3	599	18.7	16.4	659	13.4	10.0	561	12.7	Q
4,000 to 5,499 HDD.....	12.8	621	18.9	13.9	669	14.0	9.3	548	12.8	.2
< 4,000 HDD.....	16.8	636	18.1	18.1	661	13.8	15.9	582	12.5	.4
Measured Heated Square Footage of Residence										
Less than 600 Square Feet.....	1.8	666	19.2	2.4	694	13.8	2.4	615	12.8	Q
600 to 999 Square Feet.....	8.5	615	19.6	9.3	672	13.8	9.2	632	12.4	0.2
1,000 to 1,599 Square Feet....	12.8	608	18.5	16.4	685	13.7	11.4	556	12.5	Q
1,600 to 1,999 Square Feet....	7.3	627	18.1	6.8	609	14.0	4.6	481	13.1	Q
2,000 to 2,399 Square Feet....	5.2	650	17.8	5.0	655	13.7	3.6	481	13.3	Q
2,400 to 2,999 Square Feet....	4.8	611	18.2	4.7	668	13.4	2.6	647	12.5	Q
3,000 or More Square Feet.....	4.5	599	18.7	3.7	625	13.6	1.5	506	12.7	Q
Energy Used in The Home--										
April 1982 through March 1983 (million Btu per household)										
50 or Less.....	6.0	646	19.7	6.9	670	14.4	6.4	527	13.4	Q
51 to 75.....	7.2	608	19.6	9.1	641	14.4	6.3	595	12.2	Q
76 to 100.....	7.7	610	18.7	8.3	666	13.7	6.2	607	12.6	Q
101 to 125.....	7.6	611	18.3	7.4	640	13.7	5.5	519	12.8	Q
126 to 150.....	6.3	604	18.4	6.7	660	13.6	4.5	592	12.6	Q
151 or Over.....	10.1	633	17.3	10.1	694	12.8	6.3	565	12.4	.3
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)										
600 or Less.....	5.3	613	20.1	6.8	661	14.5	6.4	588	12.8	Q
601 to 800.....	6.5	595	18.8	6.7	636	14.1	6.1	552	12.7	Q
801 to 1,000.....	7.8	597	19.4	8.2	658	13.9	6.9	548	12.8	Q
1,001 to 1,200.....	6.9	613	18.6	8.4	654	13.5	5.5	562	12.2	Q
1,201 to 1,600.....	10.0	610	18.1	10.5	658	13.3	6.1	595	12.6	Q
1,601 or Over.....	8.4	677	17.2	7.8	709	13.2	4.2	554	12.8	Q
Main Heating Fuel										
Natural Gas.....	25.0	605	18.2	27.1	655	13.3	19.5	572	12.5	.3
Electricity.....	8.1	667	18.8	7.6	667	14.5	4.6	579	12.6	Q
Fuel Oil or Kerosene.....	5.6	573	19.6	6.1	670	13.7	4.3	530	13.0	Q
Wood.....	3.3	649	19.9	4.3	704	14.1	4.2	545	13.1	Q
Liquefied Petroleum Gas.....	2.0	686	17.0	2.5	674	14.3	2.0	610	12.5	Q
Other/None.....	.8	598	20.6	.9	597	14.0	.6	582	14.2	Q
Family Income 1983										
Less than \$ 5,000.....	0.8	579	18.6	1.3	520	14.7	2.0	592	12.1	Q
\$ 5,000 - \$ 9,999.....	3.1	567	17.4	5.6	671	13.5	5.5	533	12.2	Q
\$10,000 - \$14,999.....	4.3	556	18.9	6.2	639	13.8	5.5	614	12.6	Q
\$15,000 - \$19,999.....	4.4	574	18.4	6.8	692	13.0	5.1	640	11.9	Q
\$20,000 - \$24,999.....	5.7	603	18.5	5.7	667	13.7	4.0	553	13.1	Q
\$25,000 - \$34,999.....	10.7	666	18.6	10.9	685	13.8	6.6	525	13.1	Q
\$35,000 or More.....	15.9	634	18.7	12.0	648	14.0	6.5	543	13.2	0.2

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Miles per Gallon by Body Type

Table 11. Household Motor Fuel Consumption per Vehicle and Miles per Gallon by Vehicle Body Type, 1983

Household Characteristics	Automobile			Pickup Truck			Other/No Answer
	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)
Total	101.7	595	16.0	19.8	671	13.3	7.8
Census Region and Division							
Northeast	20.8	589	16.2	1.8	666	14.0	1.3
New England	6.0	568	17.0	.4	649	14.2	.2
Middle Atlantic	14.8	597	15.9	1.4	671	13.9	1.1
North Central	25.6	584	15.8	4.6	684	12.3	2.3
East North Central	16.9	594	15.9	2.8	641	12.8	1.6
West North Central	8.8	565	15.7	1.9	747	11.6	.7
South	34.1	623	15.8	8.6	669	13.5	2.5
South Atlantic	17.4	622	16.4	3.4	659	14.5	1.4
East South Central	6.8	594	16.0	2.0	681	13.0	.5
West South Central	9.9	645	14.8	3.2	672	12.8	.6
West	21.2	570	16.3	4.8	664	13.6	1.7
Mountain	5.2	537	16.4	1.6	719	13.1	.5
Pacific	16.0	581	16.3	3.2	636	13.8	1.1
Area Type							
Metropolitan	78.3	592	16.1	12.1	668	13.4	6.0
Central City	31.4	578	15.3	4.0	618	13.5	2.2
Outside Central City	46.9	602	16.6	8.1	693	13.3	3.7
Nonmetropolitan	23.4	605	15.7	7.7	675	13.1	1.8
Average Number of Vehicles 1983 (vehicle years)							
1 or Fewer	27.9	623	15.4	2.6	801	13.6	.8
2	44.9	581	16.2	10.2	654	13.4	3.8
3 or More	28.9	590	16.4	7.0	648	12.9	3.2
Number of Drivers (Fall 1982)							
1	21.0	554	15.5	3.0	668	13.9	1.2
2	57.0	594	16.1	12.1	642	13.3	4.8
3 or More	23.1	641	16.1	4.7	743	13.0	1.8
None/No Answer	.7	445	15.9	Q	Q	Q	Q
Origin of Householder							
White	89.8	585	16.2	18.4	662	13.3	7.1
Black	9.4	693	14.0	1.0	778	13.2	.5
Other	2.5	591	16.6	.3	813	14.4	Q
Hispanic Descent							
Yes	4.2	680	14.7	1.2	851	13.0	0.3
No	97.5	592	16.1	18.6	659	13.3	7.5
Age of Householder							
24 Years and Under	6.8	686	15.8	1.1	828	14.3	.3
25 to 34 Years	23.4	631	16.8	5.0	718	13.5	2.0
35 to 44 Years	19.6	646	16.6	4.3	712	13.1	2.2
45 to 59 Years	28.9	618	15.5	5.6	708	12.7	2.3
60 Years and Over	23.0	461	15.1	3.7	457	13.9	.9
Household Size							
1 Person	13.0	530	16.0	1.5	640	15.4	.7
2 Persons	32.3	542	16.2	6.7	594	13.1	2.1
3 Persons	19.4	596	16.1	4.2	703	13.4	1.4
4 Persons	21.8	646	16.4	4.3	701	13.1	1.9
5 or More Persons	15.1	693	15.0	3.2	765	12.8	1.7

See footnotes at end of table



Miles per Gallon by Body Type

Table 11. (Continued)

Household Characteristics	Automobile			Pickup Truck			Other/No Answer
	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)							
--Long-term Average							
<2,000 CDD and >7,000 HDD.....	10.3	603	16.0	2.4	643	13.1	.9
<2,000 CDD and 5,500 to 7,000 HDD.....	25.6	583	16.2	3.7	704	12.5	2.0
<2,000 CDD and 4,000 to 5,499 HDD.....	25.0	588	16.4	4.5	693	13.6	1.9
<2,000 CDD and <4,000 HDD.....	25.6	604	15.7	5.3	617	13.8	1.9
>2,000 CDD and <4,000 HDD.....	15.1	608	15.6	3.9	705	13.2	1.1
Heating Degree-Days (HDD)							
April 1982 Through March 1983							
> 5,499 HDD.....	33.6	588	16.0	5.7	674	12.9	2.6
4,000 to 5,499 HDD.....	28.7	591	16.4	5.2	682	13.3	2.2
< 4,000 HDD.....	39.4	605	15.7	9.0	663	13.5	2.9
Measured Heated Square Footage of Residence							
Less than 600 Square Feet.....	5.5	632	15.6	0.8	699	13.8	0.3
600 to 999 Square Feet.....	21.7	610	15.8	4.5	732	13.7	1.1
1,000 to 1,599 Square Feet....	31.2	599	15.8	6.8	638	13.1	2.6
1,600 to 1,999 Square Feet....	14.6	553	16.7	2.9	673	13.4	1.3
2,000 to 2,399 Square Feet....	10.9	603	16.0	1.9	584	13.6	1.0
2,400 to 2,999 Square Feet....	9.8	609	16.1	1.7	725	12.0	.9
3,000 or More Square Feet.....	8.1	568	16.7	1.0	671	13.3	.6
Energy Used in The Home--							
April 1982 through March 1983 (million Btu per household)							
50 or Less.....	14.5	599	16.8	3.8	635	14.0	1.1
51 to 75.....	17.7	590	16.5	3.9	647	13.7	1.3
76 to 100.....	16.9	591	16.2	3.9	711	13.0	1.4
101 to 125.....	16.5	579	16.0	3.0	665	13.1	1.1
126 to 150.....	14.2	590	15.9	2.2	696	12.7	1.2
151 or Over.....	21.9	616	15.1	3.0	684	12.8	1.7
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)							
600 or Less.....	14.7	611	16.1	3.1	665	14.2	.8
601 to 800.....	14.9	556	16.5	3.4	685	12.8	1.2
801 to 1,000.....	18.1	596	16.3	3.7	627	13.0	1.2
1,001 to 1,200.....	16.0	580	16.0	3.6	640	13.4	1.3
1,201 to 1,600.....	21.1	596	15.8	3.7	706	13.2	1.8
1,601 or Over.....	16.9	629	15.6	2.3	724	13.0	1.5
Main Heating Fuel							
Natural Gas.....	58.7	592	15.5	9.1	684	12.8	4.1
Electricity.....	16.3	598	17.0	3.0	738	14.5	1.2
Fuel Oil or Kerosene.....	13.3	579	16.3	1.9	620	13.6	.9
Wood.....	7.2	625	17.1	3.8	636	13.2	.8
Liquefied Petroleum Gas.....	4.6	642	15.5	1.6	597	13.4	.5
Other/None.....	1.7	553	17.9	.4	734	13.5	.3
Family Income 1983							
Less than \$ 5,000.....	3.3	559	14.1	0.6	568	15.6	Q
\$ 5,000 - \$ 9,999.....	11.4	565	14.5	2.3	630	12.4	0.7
\$10,000 - \$14,999.....	12.8	587	15.3	2.6	684	13.3	.8
\$15,000 - \$19,999.....	12.6	611	15.0	2.6	635	12.7	1.1
\$20,000 - \$24,999.....	12.1	592	16.2	2.3	698	13.0	1.0
\$25,000 - \$34,999.....	21.4	614	16.6	5.0	684	13.6	1.8
\$35,000 or More.....	28.1	596	17.1	4.3	691	13.5	2.3

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Miles per Gallon by Number of Cylinders

Table 12. Household Motor Fuel Consumption per Vehicle and Miles per Gallon by Number of Cylinders, 1983

Household Characteristics	4-Cylinders			6-Cylinders			8-Cylinders			Other/No Answer
	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)
Total	28.3	478	22.7	31.4	618	15.4	57.0	687	12.4	12.6
Census Region and Division										
Northeast	6.1	462	23.6	7.1	625	15.4	9.1	699	12.3	1.6
New England	1.9	471	23.4	2.2	556	15.8	2.1	716	12.6	.5
Middle Atlantic	4.2	458	23.7	4.9	655	15.3	7.1	695	12.2	1.1
North Central	6.0	494	22.5	7.8	604	15.7	15.9	656	12.3	2.9
East North Central	3.9	490	22.6	5.7	630	15.5	9.8	650	12.5	1.9
West North Central	2.1	502	22.3	2.0	530	16.2	6.2	666	12.0	1.0
South	8.7	493	22.8	10.8	646	15.0	20.4	699	12.6	5.1
South Atlantic	5.2	491	23.5	5.5	685	15.1	9.2	704	12.6	2.3
East South Central	1.8	503	21.9	2.3	609	15.1	3.9	698	12.5	1.2
West South Central	1.7	490	21.6	3.1	605	14.7	7.3	694	12.8	1.7
West	7.6	459	22.0	5.7	576	16.0	11.5	697	12.1	3.0
Mountain	1.6	457	22.0	1.6	552	17.0	3.5	666	12.3	.7
Pacific	6.0	460	22.0	4.1	585	15.6	8.0	711	12.0	2.3
Area Type										
Metropolitan	22.4	478	22.6	23.8	624	15.5	41.0	679	12.3	9.1
Central City	8.0	446	21.9	9.1	617	14.8	16.6	647	12.2	3.9
Outside Central City	14.4	496	23.0	14.7	628	15.9	24.4	700	12.4	5.2
Nonmetropolitan	5.9	477	22.9	7.6	599	15.2	15.9	708	12.5	3.5
Average Number of Vehicles 1983 (vehicle years)										
1 or Fewer	6.2	528	22.2	8.9	629	15.2	13.6	720	12.4	2.6
2	13.7	453	22.8	14.6	624	15.3	25.3	679	12.3	5.4
3 or More	8.4	481	23.0	7.9	594	15.9	18.1	673	12.4	4.6
Number of Drivers (Fall 1982)										
1	5.0	459	22.3	6.6	585	15.2	11.3	633	12.2	2.3
2	16.5	471	22.9	18.0	611	15.4	32.5	684	12.4	6.8
3 or More	6.6	517	22.6	6.6	668	15.7	12.9	745	12.5	3.4
None/No Answer	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Origin of Householder										
White	25.9	473	22.9	28.5	606	15.7	50.0	678	12.4	10.9
Black	1.4	537	21.0	2.4	777	12.7	5.9	754	12.3	1.2
Other	1.0	513	20.3	.5	501	16.0	1.0	746	13.3	.4
Hispanic Descent										
Yes	1.1	490	20.9	1.7	707	14.2	2.5	847	12.1	0.5
No	27.3	477	22.8	29.7	613	15.5	54.5	679	12.4	12.1
Age of Householder										
24 Years and Under	2.4	558	21.7	2.0	749	14.7	3.0	829	12.3	.9
25 to 34 Years	8.4	506	22.5	7.2	638	16.0	11.8	763	12.3	3.0
35 to 44 Years	6.0	505	23.7	6.1	725	15.0	11.3	743	12.3	2.7
45 to 59 Years	7.2	459	22.9	8.3	635	15.5	17.6	707	12.4	3.8
60 Years and Over	4.4	374	21.8	7.9	465	15.4	13.2	510	12.6	2.2
Household Size										
1 Person	3.2	479	22.2	4.2	558	15.3	6.2	596	12.4	1.5
2 Persons	8.9	432	23.1	10.5	553	16.0	18.5	621	12.4	3.2
3 Persons	5.7	506	22.6	5.6	602	15.2	11.2	702	12.5	2.5
4 Persons	6.8	495	23.0	6.2	675	15.7	12.1	758	12.4	2.9
5 or More Persons	3.7	510	21.9	4.9	755	14.3	8.9	771	12.1	2.5



Miles per Gallon by Number of Cylinders

Table 12. (Continued)

Household Characteristics	4-Cylinders			6-Cylinders			8-Cylinders			Other/No Answer
	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)										
--Long-term Average										
<2,000 CDD and >7,000 HDD.....	2.9	481	23.0	3.1	621	15.7	6.3	657	12.6	1.3
<2,000 CDD and 5,500 to 7,000 HDD.....	6.4	491	23.3	8.8	609	15.5	13.6	662	12.3	2.5
<2,000 CDD and 4,000 to 5,499 HDD.....	7.7	479	23.4	7.1	580	16.1	13.7	717	12.3	2.9
<2,000 CDD and <4,000 HDD.....	7.9	475	21.8	7.4	619	15.3	14.3	695	12.2	3.2
>2,000 CDD and <4,000 HDD.....	3.4	453	21.7	5.0	683	14.5	9.1	686	12.7	2.7
Heating Degree-Days (HDD)										
April 1982 Through March 1983										
> 5,499 HDD.....	8.6	485	23.2	11.0	606	15.5	18.7	658	12.5	3.5
4,000 to 5,499 HDD.....	8.7	478	23.3	8.2	594	16.0	15.9	707	12.3	3.3
< 4,000 HDD.....	11.0	472	21.8	12.2	645	14.9	22.3	696	12.4	5.8
Measured Heated Square Footage of Residence										
Less than 600 Square Feet.....	1.6	437	21.6	1.8	644	14.7	2.5	779	11.9	0.8
600 to 999 Square Feet.....	6.2	513	22.5	7.1	613	15.4	11.9	718	12.0	2.1
1,000 to 1,599 Square Feet.....	8.4	456	23.2	10.0	651	14.8	18.1	680	12.5	4.1
1,600 to 1,999 Square Feet.....	4.3	473	22.6	4.5	568	16.1	8.2	639	12.8	1.8
2,000 to 2,999 Square Feet.....	3.1	503	21.8	3.0	618	16.3	6.3	658	12.4	1.5
2,400 to 2,999 Square Feet.....	2.6	495	23.4	2.9	610	16.0	5.7	719	11.9	1.1
3,000 or More Square Feet.....	2.2	447	23.1	2.1	573	15.7	4.2	664	13.2	1.2
Energy Used in The Home--										
April 1982 through March 1983 (million Btu per household)										
50 or Less.....	4.6	496	23.3	4.8	607	15.8	8.0	699	12.7	2.0
51 to 75.....	5.9	485	22.6	5.5	673	14.7	9.3	660	12.4	2.1
76 to 100.....	5.1	463	23.2	5.5	605	15.6	9.6	737	12.2	1.9
101 to 125.....	4.4	464	22.6	4.9	584	15.9	9.5	655	12.4	1.7
126 to 150.....	3.7	483	22.8	4.2	687	15.0	8.2	648	12.4	1.6
151 or Over.....	4.6	476	21.8	6.5	573	15.6	12.3	710	12.3	3.2
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)										
600 or Less.....	4.7	503	22.4	4.6	614	15.1	7.7	713	12.4	1.7
601 to 800.....	4.7	477	22.7	5.1	556	15.9	7.9	687	12.1	1.7
801 to 1,000.....	5.3	465	23.4	5.4	618	15.5	10.3	661	12.4	2.1
1,001 to 1,200.....	4.8	471	22.4	4.5	654	15.0	9.8	670	12.3	1.9
1,201 to 1,600.....	5.0	449	23.3	7.2	616	15.6	12.1	683	12.5	2.3
1,601 or Over.....	3.8	512	21.8	4.7	658	15.4	9.2	718	12.4	2.9
Main Heating Fuel										
Natural Gas.....	14.5	476	22.0	18.3	596	15.5	32.5	678	12.2	6.7
Electricity.....	5.4	486	23.0	4.9	691	15.5	8.2	722	13.0	2.0
Fuel Oil or Kerosene.....	3.8	470	24.1	4.1	629	15.2	7.0	640	12.6	1.2
Wood.....	2.8	499	23.7	2.4	577	15.7	4.9	727	12.3	1.7
Liquefied Petroleum Gas.....	1.2	468	22.2	1.2	666	15.1	3.6	718	12.4	.7
Other/None.....	.8	417	24.9	.6	681	15.1	.8	680	12.1	0
Family Income 1983										
Less than \$ 5,000.....	0.6	521	20.3	1.0	453	14.3	2.2	621	12.4	0.4
\$ 5,000 - \$ 9,999.....	2.1	457	20.8	3.8	560	14.6	7.3	661	12.1	1.2
\$10,000 - \$14,999.....	3.2	498	22.1	3.8	572	14.8	7.7	672	12.3	1.5
\$15,000 - \$19,999.....	3.1	460	22.2	4.0	680	13.8	7.8	687	11.9	1.5
\$20,000 - \$24,999.....	3.5	477	22.9	4.0	590	15.8	6.2	705	12.2	1.6
\$25,000 - \$34,999.....	7.0	491	22.9	6.4	681	15.8	12.4	690	12.5	2.5
\$35,000 or More.....	9.0	469	23.4	8.3	619	16.5	13.5	707	12.8	3.8

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Miles per Gallon for Vehicles with Air Conditioning

Table 13. Household Motor Fuel Consumption per Vehicle and Miles per Gallon by Presence of Air Conditioning, 1983

Household Characteristics	Yes			No			No Answer
	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)
Total	74.5	657	14.7	47.7	563	16.0	7.0
Census Region and Division							
Northeast.....	11.4	632	14.9	10.9	585	16.5	1.5
New England.....	2.7	588	16.1	3.5	573	16.8	.4
Middle Atlantic.....	8.7	645	14.6	7.4	590	16.3	1.1
North Central.....	18.9	645	14.5	12.6	580	15.3	1.0
East North Central.....	11.5	663	14.6	9.2	579	15.2	.5
West North Central.....	7.4	617	14.2	3.4	582	15.4	.4
South.....	30.2	681	14.7	12.4	565	15.7	2.5
South Atlantic.....	14.0	700	15.0	7.2	562	16.9	1.1
East South Central.....	6.0	647	14.9	2.6	541	15.2	.7
West South Central.....	10.2	674	14.3	2.7	595	13.3	.8
West.....	14.0	644	14.6	11.8	525	16.8	2.0
Mountain.....	4.0	618	14.7	2.8	530	15.8	.5
Pacific.....	10.0	654	14.5	8.9	523	17.1	1.4
Area Type							
Metropolitan.....	57.2	654	14.8	33.9	555	16.3	5.3
Central City.....	23.3	630	14.1	12.2	532	15.9	2.2
Outside Central City.....	33.9	671	15.2	21.7	568	16.6	3.1
Nonmetropolitan.....	17.3	667	14.4	13.9	584	15.2	1.7
Average Number of Vehicles 1983 (vehicle years)							
1 or Fewer.....	19.0	663	14.4	10.9	622	16.2	1.4
2.....	34.6	650	14.8	21.5	549	15.9	2.8
3 or More.....	20.9	665	14.7	15.3	542	16.0	2.8
Number of Drivers (Fall 1982)							
1.....	14.4	620	14.3	9.3	525	16.2	1.4
2.....	43.7	656	14.7	26.6	547	16.0	3.6
3 or More.....	16.1	698	14.8	11.5	636	15.8	1.9
None/No Answer.....	.4	520	13.9	.3	372	18.7	Q
Origin of Householder							
White.....	65.5	643	14.9	43.5	559	16.2	6.3
Black.....	7.4	790	13.1	3.1	627	13.9	.5
Other.....	1.7	630	16.1	1.1	576	16.4	Q
Hispanic Descent							
Yes.....	3.2	733	13.8	2.2	689	14.5	0.4
No.....	71.4	654	14.7	45.5	557	16.1	6.6
Age of Householder							
24 Years and Under.....	4.2	750	14.8	3.8	634	16.7	.3
25 to 34 Years.....	15.9	719	15.4	12.9	575	16.5	1.6
35 to 44 Years.....	15.1	730	14.7	9.7	613	16.1	1.3
45 to 59 Years.....	21.9	669	14.3	12.7	605	15.3	2.2
60 Years and Over.....	17.4	500	14.3	8.7	400	16.0	1.6
Household Size							
1 Person.....	8.9	596	14.7	5.4	487	17.5	.9
2 Persons.....	25.2	590	14.9	13.7	495	16.4	2.2
3 Persons.....	14.1	665	14.9	9.8	576	15.6	1.1
4 Persons.....	15.7	714	14.9	10.7	596	16.3	1.7
5 or More Persons.....	10.7	774	13.5	8.2	669	14.9	1.1

See footnotes at end of table



Miles per Gallon for Vehicles with Air Conditioning

Table 13. (Continued)

Household Characteristics	Yes			No			No Answer
	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)							
--Long-Term Average							
<2,000 CDD and >7,000 HDD.....	5.4	658	14.9	7.5	586	15.2	.6
<2,000 CDD and 5,500 to 7,000 HDD.....	16.4	644	14.5	13.6	578	16.1	1.2
<2,000 CDD and 4,000 to 5,499 HDD.....	18.3	655	14.9	11.3	566	16.7	1.8
<2,000 CDD and <4,000 HDD.....	19.7	654	14.6	10.7	520	16.5	2.4
>2,000 CDD and <4,000 HDD.....	14.7	678	14.6	4.6	576	14.3	1.0
Heating Degree-Days (HDD)							
April 1982 Through March 1983							
> 5,499 HDD.....	20.1	644	14.5	20.0	583	15.8	1.8
4,000 to 5,499 HDD.....	21.4	657	14.9	12.7	560	16.6	2.0
< 4,000 HDD.....	33.1	665	14.6	14.9	541	15.8	3.2
Measured Heated Square Footage of Residence							
Less than 600 Square Feet.....	3.3	724	14.8	2.8	593	15.2	0.5
600 to 999 Square Feet.....	14.0	657	14.6	11.9	605	15.9	1.5
1,000 to 1,999 Square Feet....	23.9	666	14.3	14.4	559	15.9	2.3
1,600 to 1,999 Square Feet....	10.9	608	15.1	6.9	544	16.3	1.0
2,000 to 2,999 Square Feet....	8.0	664	14.7	5.1	530	16.3	.7
2,400 to 2,999 Square Feet....	7.7	701	14.3	4.3	538	16.4	.3
3,000 or More Square Feet.....	6.7	617	16.0	2.3	520	15.9	.7
Energy Used in The Home--							
April 1982 through March 1983 (million Btu per household)							
50 or Less.....	9.6	664	15.4	8.9	560	16.5	1.0
51 to 75.....	12.8	657	14.6	8.7	560	16.7	1.4
76 to 100.....	12.6	658	14.8	8.1	574	15.9	1.6
101 to 125.....	12.0	636	14.8	7.6	536	16.1	.9
126 to 150.....	11.0	649	14.7	5.8	576	15.8	.8
151 or Over.....	16.6	675	14.1	8.7	576	15.0	1.3
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)							
600 or Less.....	8.8	657	14.6	9.0	577	16.8	.9
601 to 800.....	10.2	637	14.8	7.6	535	16.2	1.6
801 to 1,000.....	13.2	642	15.0	8.7	547	16.1	1.2
1,001 to 1,200.....	12.6	658	14.3	7.2	544	16.2	1.1
1,201 to 1,600.....	16.6	643	14.8	8.7	590	15.2	1.3
1,601 or Over.....	13.1	705	14.5	6.5	585	15.6	.9
Main Heating Fuel							
Natural Gas.....	44.2	644	14.3	23.9	558	15.9	3.8
Electricity.....	12.6	700	15.5	6.9	546	16.7	1.0
Fuel Oil or Kerosene.....	8.0	632	15.0	7.2	572	16.0	.9
Wood.....	4.9	683	15.0	6.1	583	16.0	.8
Liquefied Petroleum Gas.....	3.7	702	14.5	2.5	591	15.2	.5
Other/None.....	1.2	635	16.1	1.2	566	16.4	Q
Family Income 1983							
Less than \$ 5,000.....	2.2	603	13.6	1.4	467	16.0	0.5
\$ 5,000 - \$ 9,999.....	8.1	616	13.6	5.4	555	14.2	.8
\$10,000 - \$14,999.....	8.5	619	14.1	6.6	584	15.6	.9
\$15,000 - \$19,999.....	9.2	690	13.2	6.3	579	15.3	.9
\$20,000 - \$24,999.....	8.4	663	14.8	5.9	551	16.0	1.1
\$25,000 - \$34,999.....	16.3	685	15.0	10.8	578	16.5	1.2
\$35,000 or More.....	21.8	656	15.7	11.3	551	17.1	1.6

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Household and Motor Vehicle Expenditures

Table 14. Household Energy Expenditures for Fuel Used in the Home and Fuel Used in Motor Vehicles per Household

Household Characteristics	Total Households		Households Without Vehicles		Households With Vehicles			
	Total Households (millions)	Total Energy Expenditures (dollars)	Total Households (millions)	Expenditures for Energy Used in the Home (dollars)	Total Households (millions)	Total Energy Expenditures (dollars)	Expenditures for Energy Used in the Home (dollars)	Transportation Energy Expenditures (dollars)
Total	84.4	2,174	12.2	929	72.2	2,380	1,063	1,317
Census Region and Division								
Northeast	18.0	2,328	4.1	1,253	13.9	2,639	1,384	1,254
New England	4.3	2,482	.5	1,177	3.8	2,648	1,412	1,236
Middle Atlantic	13.7	2,280	3.6	1,264	10.1	2,635	1,374	1,261
North Central	21.4	2,188	3.1	879	18.3	2,403	1,089	1,314
East North Central	15.0	2,126	2.7	896	12.3	2,382	1,086	1,296
West North Central	6.4	2,332	.4	778	6.0	2,447	1,095	1,352
South	28.4	2,225	3.7	748	24.7	2,442	1,057	1,385
South Atlantic	14.0	2,231	1.8	764	12.2	2,446	1,043	1,403
East South Central	5.8	2,079	.9	693	4.9	2,313	934	1,379
West South Central	8.6	2,315	1.0	765	7.6	2,519	1,159	1,360
West	16.7	1,901	1.3	554	15.3	2,018	749	1,269
Mountain	4.3	2,065	.3	663	4.0	2,172	927	1,245
Pacific	12.3	1,843	1.0	521	11.3	1,963	686	1,277
Area Type								
Metropolitan	63.8	2,182	9.6	983	54.2	2,390	1,091	1,299
Central City	29.7	1,921	6.9	1,017	22.8	2,190	1,023	1,167
Outside Central City	34.1	2,409	2.7	898	31.4	2,535	1,141	1,394
Nonmetropolitan	20.6	2,148	2.6	733	18.0	2,350	977	1,374
Average Number of Vehicles 1983 (vehicle years)								
None	11.0	914	11.0	914	-	-	-	-
1 or Fewer	30.6	1,727	-	-	30.6	1,727	937	790
2	29.6	2,558	-	-	29.6	2,558	1,117	1,440
3 or More	12.1	3,600	-	-	12.1	3,600	1,248	2,352
Not Applicable (Household did not own a vehicle as of July 1, 1983)	1.2	1,323	1.2	1,064	-	-	-	-
Number of Drivers (Fall 1982)								
1	24.8	1,560	3.9	920	20.9	1,673	842	831
2	41.0	2,414	1.3	1,058	39.7	2,457	1,101	1,355
3 or More	11.2	3,444	0	0	11.0	3,476	1,348	2,128
None/No Answer	7.3	962	6.8	901	.5	1,692	935	757
Origin of Householder								
White	72.0	2,206	8.2	919	63.8	2,368	1,061	1,307
Black	10.5	1,977	3.7	957	6.8	2,526	1,128	1,398
Other	1.8	2,045	.3	842	1.6	2,241	847	1,394
Hispanic Descent								
Yes	4.2	2,214	.7	1,186	3.5	2,423	1,005	1,418
No	80.2	2,171	11.5	913	68.7	2,378	1,066	1,312
Age of Householder								
24 Years and Under	6.7	1,806	1.5	782	5.2	2,089	762	1,327
25 to 34 Years	19.3	2,213	1.5	949	17.8	2,317	986	1,331
35 to 44 Years	14.7	2,632	1.2	1,063	13.4	2,774	1,207	1,567
45 to 59 Years	19.8	2,563	1.8	988	18.0	2,719	1,161	1,559
60 Years and Over	23.9	1,640	6.1	915	17.8	1,887	1,019	867

See footnotes at end of table



Household and Motor Vehicle Expenditures

Table 14. (Continued)

Household Characteristics	Total Households		Households Without Vehicles		Households With Vehicles			
	Total Households (millions)	Total Energy Expenditures (dollars)	Total Households (millions)	Expenditures for Energy Used in the Home (dollars)	Total Households (millions)	Total Energy Expenditures (dollars)	Expenditures for Energy Used in the Home (dollars)	Transportation Energy Expenditures (dollars)
Household Size								
1 Person.....	19.4	1,305	6.8	823	12.6	1,556	757	799
2 Persons.....	26.5	2,007	2.8	949	23.7	2,128	984	1,144
3 Persons.....	13.6	2,460	1.1	1,108	12.5	2,575	1,103	1,472
4 Persons.....	14.3	2,783	.6	1,143	13.7	2,848	1,227	1,621
5 or More Persons.....	10.6	2,990	1.0	1,274	9.6	3,159	1,369	1,790
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)								
--Long-term Average								
<2,000 CDD and >7,000 HDD.....	8.6	2,193	.9	915	7.8	2,330	1,027	1,303
<2,000 CDD and 5,500 to 7,000 HDD.....	21.0	2,236	3.7	934	17.4	2,504	1,186	1,318
<2,000 CDD and 4,000 to 5,499 HDD.....	22.2	2,196	4.1	1,149	18.1	2,427	1,152	1,276
<2,000 CDD and <4,000 HDD.....	19.8	2,023	2.1	646	17.8	2,181	846	1,335
>2,000 CDD and <4,000 HDD.....	12.7	2,252	1.5	716	11.2	2,461	1,096	1,365
Heating Degree-Days (HDD)								
April 1982 Through March 1983								
> 5,499 HDD.....	28.1	2,199	4.4	935	23.7	2,423	1,127	1,296
4,000 to 5,499 HDD.....	24.8	2,220	4.3	1,130	20.5	2,446	1,150	1,296
< 4,000 HDD.....	31.5	2,115	3.5	676	28.0	2,295	945	1,351
Measured Heated Square Footage of Residence								
Less than 600 Square Feet.....	7.6	1,374	2.8	745	4.8	1,748	673	1,075
600 to 999 Square Feet.....	22.9	1,718	4.5	886	18.4	1,917	800	1,117
1,000 to 1,599 Square Feet.....	25.4	2,217	3.2	1,027	22.2	2,384	1,034	1,350
1,600 to 1,999 Square Feet.....	10.5	2,401	1.0	1,061	9.5	2,537	1,160	1,377
2,000 to 2,399 Square Feet.....	7.4	2,651	.4	1,240	7.0	2,721	1,301	1,420
2,400 to 2,999 Square Feet.....	6.1	2,971	Q	Q	5.9	3,028	1,424	1,604
3,000 or More Square Feet.....	4.5	3,195	Q	Q	4.4	3,225	1,647	1,578
Energy Used in The Home--								
April 1982 through March 1983 (million Btu per household)								
50 or Less.....	14.7	1,504	2.5	454	12.2	1,716	560	1,155
51 to 75.....	15.9	1,832	2.3	702	13.6	2,022	800	1,222
76 to 100.....	14.8	2,053	2.3	813	12.5	2,275	957	1,317
101 to 125.....	13.8	2,160	2.4	1,033	11.4	2,390	1,111	1,280
126 to 150.....	10.5	2,526	1.1	1,301	9.4	2,672	1,285	1,387
151 or Over.....	14.7	3,091	1.6	1,747	13.1	3,249	1,700	1,549
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)								
600 or Less.....	16.2	1,289	3.5	440	12.7	1,522	443	1,079
601 to 800.....	14.3	1,656	2.5	703	11.8	1,851	705	1,146
801 to 1,000.....	14.8	2,026	1.8	900	12.9	2,180	905	1,275
1,001 to 1,200.....	12.7	2,297	1.3	1,089	11.4	2,426	1,098	1,329
1,201 to 1,600.....	15.4	2,669	1.8	1,402	13.6	2,838	1,384	1,453
1,601 or Over.....	11.0	3,518	1.2	1,983	9.7	3,708	2,022	1,687

See footnotes at end of table



Household and Motor Vehicle Expenditures

Table 14. (Continued)

Household Characteristics	Total Households		Households Without Vehicles		Households With Vehicles			
	Total Households (millions)	Total Energy Expenditures (dollars)	Total Households (millions)	Expenditures for Energy Used in the Home (dollars)	Total Households (millions)	Total Energy Expenditures (dollars)	Expenditures for Energy Used in the Home (dollars)	Transportation Energy Expenditures (dollars)
Main Heating Fuel								
Natural Gas.....	47.8	2,107	7.0	848	40.8	2,320	1,038	1,282
Electricity.....	13.3	2,137	1.3	769	12.0	2,285	986	1,299
Fuel Oil or Kerosene.....	12.0	2,405	2.8	1,373	9.2	2,705	1,458	1,246
Wood.....	6.0	2,230	.6	421	5.4	2,418	789	1,629
Liquefied Petroleum Gas.....	3.8	2,434	.4	765	3.4	2,619	1,116	1,503
Other/None.....	1.5	1,867	Q	Q	1.3	2,040	720	1,321
Family Income 1983								
Less than \$ 5,000.....	6.9	1,254	3.7	882	3.2	1,673	821	852
\$ 5,000 - \$ 9,999.....	13.7	1,652	3.9	878	9.8	1,947	927	1,020
\$10,000 - \$14,999.....	12.0	1,918	1.5	960	10.5	2,054	950	1,104
\$15,000 - \$19,999.....	11.1	2,131	1.4	995	9.7	2,289	1,012	1,277
\$20,000 - \$24,999.....	9.4	2,192	.7	1,033	8.7	2,286	998	1,287
\$25,000 - \$34,999.....	15.1	2,531	.5	947	14.7	2,578	1,117	1,461
\$35,000 or More.....	16.2	2,883	.5	1,215	15.6	2,939	1,288	1,650

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Household and Motor Vehicle Expenditures by Region

Table 15. Household Energy Expenditures for Fuel Used in the Home and Fuel Used in Motor Vehicles per Household by Region (Dollars per Household)

Household Characteristics	Total Households					Households With Vehicles				
	U.S.	Northeast	North Central	South	West	U.S.	Northeast	North Central	South	West
Total	2,174	2,328	2,188	2,225	1,901	2,380	2,639	2,403	2,442	2,018
Area Type										
Metropolitan.....	2,182	2,358	2,153	2,300	1,871	2,390	2,685	2,421	2,482	1,985
Central City.....	1,921	1,985	1,916	2,112	1,652	2,190	2,422	2,283	2,392	1,777
Outside Central City.....	2,409	2,613	2,381	2,457	2,102	2,535	2,803	2,528	2,547	2,196
Nonmetropolitan.....	2,148	2,140	2,266	2,077	2,108	2,350	2,377	2,366	2,357	2,245
Average Number of Vehicles 1983 (vehicle years)										
None.....	914	1,246	878	708	550	-	-	-	-	-
1 or Fewer.....	1,727	1,983	1,729	1,773	1,396	1,727	1,983	1,729	1,773	1,386
2.....	2,558	2,935	2,570	2,606	2,139	2,558	2,935	2,570	2,606	2,139
3 or More.....	3,600	3,999	3,749	3,551	3,224	3,600	3,999	3,749	3,551	3,224
Not Applicable (Household did not own a vehicle as of July 1, 1983).....	1,323	1,500	1,226	1,347	Q	-	-	-	-	-
Number of Drivers (Fall 1982)										
1.....	1,560	1,726	1,579	1,570	1,344	1,673	1,937	1,692	1,688	1,411
2.....	2,414	2,654	2,375	2,500	2,106	2,457	2,688	2,426	2,546	2,141
3 or More.....	3,444	3,732	3,592	3,322	3,125	3,476	3,753	3,641	3,367	3,125
None/No Answer.....	962	1,291	898	769	767	1,692	Q	Q	Q	Q
Origin of Householder										
White.....	2,206	2,362	2,249	2,248	1,912	2,368	2,643	2,398	2,410	2,008
Black.....	1,977	2,094	1,598	2,112	1,760	2,526	2,583	2,469	2,583	2,171
Other.....	2,045	Q	Q	Q	1,880	2,241	Q	Q	Q	2,035
Hispanic Descent										
Yes.....	2,214	2,117	2,206	2,147	2,337	2,423	2,765	2,337	2,282	2,447
No.....	2,171	2,339	2,187	2,229	1,859	2,378	2,634	2,405	2,449	1,975
Age of Householder										
24 Years and Under.....	1,806	1,604	1,875	1,892	1,763	2,089	2,364	2,138	2,073	1,955
25 to 34 Years.....	2,213	2,371	2,162	2,345	1,949	2,317	2,559	2,287	2,437	2,005
35 to 44 Years.....	2,632	2,693	2,661	2,709	2,340	2,774	2,904	2,796	2,858	2,418
45 to 59 Years.....	2,563	2,880	2,598	2,523	2,215	2,719	3,070	2,774	2,707	2,294
60 Years and Over.....	1,640	1,837	1,636	1,632	1,409	1,887	2,130	1,893	1,941	1,554
Household Size										
1 Person.....	1,305	1,418	1,352	1,286	1,155	1,556	1,723	1,611	1,632	1,305
2 Persons.....	2,007	2,195	1,957	2,076	1,794	2,128	2,377	2,117	2,182	1,865
3 Persons.....	2,460	2,533	2,619	2,464	2,137	2,575	2,767	2,722	2,561	2,196
4 Persons.....	2,783	2,968	2,723	2,851	2,506	2,848	3,066	2,763	2,925	2,563
5 or More Persons.....	2,990	3,212	2,961	3,009	2,720	3,159	3,470	3,159	3,153	2,822
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)										
--Long-term Average										
<2,000 CDD and >7,000 HDD.....	2,193	2,163	2,226	-	2,097	2,330	2,393	2,349	-	2,182
<2,000 CDD and 5,500 to 7,000 HDD.....	2,236	2,379	2,152	-	2,121	2,504	2,656	2,428	-	2,295
<2,000 CDD and 4,000 to 5,499 HDD.....	2,196	2,311	2,235	2,268	1,689	2,427	2,680	2,412	2,460	1,843
<2,000 CDD and <4,000 HDD.....	2,023	-	-	2,141	1,890	2,181	-	-	2,355	1,996
>2,000 CDD and <4,000 HDD.....	2,252	-	-	2,279	2,023	2,461	-	-	2,511	2,074

See footnotes at end of table



Household and Motor Vehicle Expenditures by Region

Table 15. (Continued)

Household Characteristics	Total Households					Households With Vehicles				
	U.S.	Northeast	North Central	South	West	U.S.	Northeast	North Central	South	West
Heating Degree-Days (HDD)										
April 1982 Through March 1983										
> 5,499 HDD.....	2,199	2,324	2,140	-	2,116	2,423	2,595	2,358	-	2,252
4,000 to 5,499 HDD.....	2,220	2,331	2,329	2,251	1,716	2,446	2,692	2,528	2,427	1,864
< 4,000 HDD.....	2,115	-	-	2,217	1,905	2,295	-	-	2,447	2,005
Measured Heated Square Footage of Residence										
Less than 600 Square Feet....	1,374	1,338	1,290	1,455	1,350	1,748	1,756	1,705	1,937	1,551
600 to 999 Square Feet.....	1,718	1,859	1,693	1,777	1,550	1,917	2,199	1,899	1,995	1,676
1,000 to 1,599 Square Feet....	2,217	2,369	2,226	2,266	1,980	2,384	2,608	2,486	2,416	2,066
1,600 to 1,999 Square Feet....	2,401	2,598	2,228	2,470	2,248	2,537	2,772	2,388	2,594	2,328
2,000 to 2,399 Square Feet....	2,651	2,652	2,471	3,053	2,410	2,721	2,785	2,561	3,070	2,410
2,400 to 2,999 Square Feet....	2,971	3,027	2,799	3,371	2,644	3,028	3,082	2,854	3,465	2,664
3,000 or More Square Feet....	3,195	3,160	3,117	3,382	3,168	3,225	3,229	3,136	3,382	3,168
Energy Used in The Home--										
April 1982 through March 1983 (million Btu per household)										
50 or Less.....	1,504	1,620	1,612	1,566	1,300	1,716	1,987	1,715	1,834	1,420
51 to 75.....	1,832	1,876	1,652	1,991	1,696	2,022	2,214	1,897	2,178	1,794
76 to 100.....	2,053	1,949	1,849	2,275	1,985	2,275	2,130	2,100	2,521	2,164
101 to 125.....	2,160	2,052	1,937	2,434	2,285	2,390	2,458	2,224	2,559	2,309
126 to 150.....	2,526	2,474	2,329	2,902	2,394	2,672	2,737	2,455	2,982	2,471
151 or Over.....	3,091	3,121	2,963	3,276	3,100	3,249	3,384	3,089	3,403	3,127
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)										
600 or Less.....	1,289	1,195	1,272	1,263	1,329	1,522	1,638	1,531	1,569	1,477
601 to 800.....	1,656	1,465	1,590	1,671	1,803	1,851	1,780	1,845	1,870	1,863
801 to 1,000.....	2,026	1,717	1,904	2,045	2,450	2,180	1,898	2,081	2,197	2,495
1,001 to 1,200.....	2,297	2,071	2,181	2,428	2,524	2,426	2,307	2,266	2,577	2,524
1,201 to 1,600.....	2,669	2,369	2,786	2,796	2,833	2,838	2,680	2,925	2,857	2,914
1,601 or Over.....	3,518	3,251	3,643	3,883	3,750	3,708	3,541	3,759	3,922	3,750
Main Heating Fuel										
Natural Gas.....	2,107	2,237	2,090	2,242	1,883	2,320	2,536	2,348	2,460	2,002
Electricity.....	2,137	2,127	2,208	2,262	1,827	2,285	2,492	2,303	2,427	1,918
Fuel Oil or Kerosene.....	2,405	2,469	2,519	2,201	1,885	2,705	2,830	2,685	2,461	2,067
Wood.....	2,230	2,464	2,497	2,113	2,019	2,418	2,549	2,516	2,399	2,195
Liquefied Petroleum Gas.....	2,434	q	2,953	2,264	2,578	2,619	q	2,953	2,510	2,578
Other/None.....	1,867	1,736	q	1,925	2,018	2,040	2,015	q	2,089	2,180
Family Income 1983										
Less than \$ 5,000.....	1,254	1,411	1,243	1,212	1,137	1,673	1,799	1,687	1,713	1,476
\$ 5,000 - \$ 9,999.....	1,652	1,634	1,617	1,791	1,480	1,947	1,950	2,003	2,086	1,657
\$10,000 - \$14,999.....	1,918	2,063	1,916	1,900	1,787	2,054	2,336	2,055	2,021	1,851
\$15,000 - \$19,999.....	2,131	2,112	2,241	2,253	1,745	2,289	2,388	2,375	2,434	1,801
\$20,000 - \$24,999.....	2,192	2,287	2,195	2,472	1,782	2,286	2,480	2,245	2,498	1,894
\$25,000 - \$34,999.....	2,531	2,810	2,602	2,618	2,008	2,578	2,876	2,638	2,674	2,041
\$35,000 or More.....	2,883	3,186	2,944	2,866	2,552	2,939	3,281	2,957	2,946	2,594

"-" = Data not applicable.

"q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.

Appendix A

How the Survey Was Conducted







Appendix A

Introduction

The Residential Transportation Energy Consumption Survey (RTECS) was designed by the Energy Information Administration to collect information on energy consumed in vehicles used in household transportation. The survey provides data on the number of vehicles used regularly by household members for personal transportation. For each vehicle, data were collected on annual miles driven, amount of fuel consumed, price paid for fuel, and miles per gallon. The survey forms a part of a series of surveys to collect information on energy consumed by households. The RTECS sample households were drawn from a larger sample of households selected for the Energy Information Administration Residential Energy Consumption Survey (RECS). The Residential Energy Consumption Survey collects data on energy used in the home.

Survey Operations

The RTECS is comprised of Forms EIA-141 and EIA-429, and is conducted with a sample of respondents from the Residential Energy Consumption Survey, Form EIA-457. Form EIA-429 includes the background questionnaire and forms for the recording of beginning and end of year mileage (odometer readings) for all household vehicles in use. The background questionnaire essentially updates information obtained during the RECS survey concerning vehicles in use by the household (number, body type, make, model, and estimated miles driven since acquired and during the previous 12 months). Form 141 is a fuel purchase log, which collects odometer readings for the beginning and end of the month and related fuel gauge readings and for each purchase of fuel, the purchase date, total vehicle mileage, number of gallons purchased, total cost of fuel, price per gallon, whether the tank was filled, a fuel tank reading, and the type of fuel used. (See Appendix C.)

The RTECS is a combination telephone and mail survey. Households were contacted by telephone for the background questionnaire and, at appropriate times, were mailed survey forms to record their odometer readings and fuel purchase information. These data were then collected by telephone. When households were called at the end of the year for their odometer readings, they were asked to report their family income for 1983. Where households could not be contacted by telephone, a personal visit was made. Forms were delivered at that time and respondents mailed in completed forms.

Odometer reading cards were mailed at the beginning and end of the year. Procedures were designed to obtain odometer readings for vehicles which were purchased or disposed of during the year. Groups of households were allocated to each of the months of the year and asked to keep a gasoline purchase log for each of their vehicles for a specific month during 1983. Fuel purchase logs were mailed to households just before the start of the month in which they were to record their fuel purchases.

Under optimal circumstances, the annual miles driven for a particular vehicle were obtained by subtracting the start of year odometer reading from the end of year odometer reading. The annual gallons consumed were obtained by dividing the annual miles driven by the miles-per-gallon estimate. The annual expenditures were obtained by multiplying the annual gallons consumed by the price per gallon. The miles-per-gallon and the price per gallon estimates were calculated using the log data and seasonality adjustments for the month the log was completed. For cars that were purchased during 1983, the start of year odometer reading was replaced by the time of purchase odometer reading. For cars that were



Appendix A (Continued)

sold or disposed of during 1983, the end of year odometer reading was replaced by the time of sale or disposal odometer reading. See Appendix B for a discussion of the adjustments that were used when there were less than optimal circumstances and the effect of these adjustments on the estimates of the standard errors of the statistics.

Sample Selection

The RECS sample design includes all housing units occupied as the primary residence in the 50 States and the District of Columbia. The fieldwork for the survey was conducted by a contractor, Response Analysis Corporation of Princeton, New Jersey. The original RECS sample consisted of 5,903 units, of which, some 95 housing units either were not used for dwelling purposes or were not habitable. Of the 5,808 habitable housing units, 536 were ineligible for this study due to a current vacancy or seasonal occupancy. Personal interviews were conducted at 4,475 of the 5,272 eligible units, for a response rate of 84.9 percent. Subsequently, mail questionnaires were sent to 703 of the 797 households that had not participated in personal interviews. Completed questionnaires were returned by 249 of these households, or 35.4 percent of those mailed. Of the total eligible households, responses were received from 89.6 percent or 4,724 households. (See the RECS reports for a detailed discussion of the sample design and survey operations.) The 3,776 households which comprise the transportation sample were drawn from the 4,724 RECS households which completed a personal interview or mail questionnaire.

A number of items contained in the RECS questionnaires were used to select the transportation study sample and to allocate the sample to calendar months for the collection of fuel purchase data. These items included number of vehicles in use by the household, an estimate of mileage each vehicle was driven in the 12 months preceding the interview (in personal interviews only), and education of the householder. To select households for the transportation sample, households were first divided into two groups. One group included 1,767 households for which the estimate of miles driven in the preceding year was 12,500 or higher; all households in this high miles group were included in the transportation sample. A second group of 2,957 households included those for which estimated mileage was less than 12,500 miles, households for which mileage information was unknown or incomplete (including all mailed questionnaire households for which mileage questions were not asked), and households with no vehicles at the time of RECS data collection; random procedures were used to select a subsample of 2,009 of the 2,957 households in the second group.

To allocate the transportation sample to data collection months for fuel purchase data, the 3,776 households were sorted into groups based on a cross-classification of number of vehicles used by the household (0, 1, and 2 or more) and education of the householder (less than 12 years, 12 to 15 years, and 16 or more years). Households in each of the 9 groups were then assigned randomly to the 12 data collection months.

Survey Estimates

Interviewer contacts at RECS households were begun in late September 1982 and continued through January 1983. More than 90 percent of the personal interviews were completed in October and November. November is regarded as the rough midpoint for the RECS data for purposes of determining the



Appendix A (Continued)

size of the universe of households. The transportation sample was drawn from these households, and transportation data were collected for calendar year 1983. July 1, 1983, is the date used for determining the size of the universe of households for the transportation survey. Weights were developed to project results of the transportation survey to the universe. The universe includes all households in the 50 States and the District of Columbia. Households on military installations are included. The definition of a household is the same as that used by the U.S. Bureau of the Census. In July 1983, the universe was estimated to contain 84.4 million households, based on Current Population Survey estimates of the population. Weights were calculated for each transportation study household. The weight reflected the probability of selection of that household for the original RECS sample, additional adjustments to correct for potential biases arising from the failure to list all housing units and the failure to complete interviews with all of the RECS sample, and an adjustment for the subsampling of households (other than for high mileage households) for the transportation sample.

Appendix B

Limitations of the
Data

$$RSE(Y) = \frac{S_Y}{Y} \times 100\%$$



Appendix B

Introduction

Data from the 1983 Residential Transportation Energy Consumption Survey (RTECS) are subject to many sources of sampling error, nonsampling error, and bias. Sampling error is a measure of the variability in the data because a sample of households was surveyed rather than the entire population. Because the survey used probability sampling techniques, sampling errors of the survey estimates can be estimated. Nonsampling error and bias are measures of variability due to the conduct of the survey. They can include population undercoverage during sampling, response bias and variance, interviewer error, coding and/or keypunching error, and nonresponse bias. The wording and format of survey questionnaires, the procedures used to select and train interviewers, and the procedures and quality control built into the data collection and processing operations were all designed to minimize these sources of error; nevertheless, nonsampling error and bias due to nonresponse is still of concern for the statistics in this report. See this appendix for a discussion of response rates and imputation procedures, and the effect of these on measures of sampling error.

Response Rates and Imputations

The transportation survey required substantial participation from households throughout the year. Once a household was selected, information was asked about the household as well as about each vehicle within the household. Additionally, information was required throughout the year as households added or disposed of existing vehicles. This required degree-of-participation from households affects rates of item nonresponse. Incentives were provided to improve participation. Households received \$1 for beginning of the year odometer readings (or reading), \$1 for end of the year odometer readings (or reading), and \$5 for each vehicle log completed. Contacts were completed at both the beginning and end of 1983 with 74 percent (2,792) of the 3,776 households in the transportation sample. (The group of 2,792 households for which contacts were completed at both the beginning and end of 1983 included some households who did not have a vehicle during the year as well as those who completed odometer readings for at least one vehicle in the household.) Vehicle logs were usable without imputation for 46 percent of the vehicles in the study sample.

Imputations were made for nonresponse to major items that were to be used to make national estimates of vehicle fuel consumption and expenditures. These items were miles traveled, gallons of fuel consumed, type of fuel used, miles per gallon, and price paid for fuel. Vehicle characteristics such as the presence of air conditioning, number of cylinders, and number of doors were imputed as a group from donor households and, therefore, some nonresponse remains in the data for these items. (See "Hot-Deck Imputation" in the Glossary.) Items not imputed were the type of vehicle, the year, make, and model. Table B1 shows the degree of imputation required for the three principal data items collected as part of this survey. A number of different methods were used depending upon the statistic and how much information was already available on the household. Imputation procedures were designed to take maximum advantage of all data available from the household including information obtained during the RECS survey.

¹The RECS personal interview asked respondents about their vehicles. For each vehicle they were asked the body type, make, model, when the vehicle was acquired and approximate miles driven during the previous 12 months. The mail questionnaire asked respondents similar questions excluding the mileage questions.



Appendix B (Continued)

Table B1. Imputations for Principal Data Items (Number of Vehicles)

Table B1. Imputations for Principal Data Items
(Number of Vehicles)

Data Item	Data Item Not Imputed	Data Item Imputed	Total Vehicles
Miles driven in 1983.....	4,503	3,095	7,598
Miles per Gallon.....	3,522	4,076	7,598
Cost of Fuel....	4,139	3,459	7,598

According to Table B1, the 1983 household transportation survey reports data for 7,598 vehicles. This number includes vehicles present in the household² at the beginning and end of the survey year as well as vehicles disposed of or acquired at some time during the year. Miles-per-gallon data were derived from a monthly purchase log which households completed for one month of the year for each vehicle in the household. For vehicles disposed of before the household completed a log and for vehicles acquired after the household completed logs, imputations were required for miles-per-gallon data for those particular vehicles. Imputations for miles-per-gallon were also required for vehicles for which households completed logs but which were not driven that particular month.

The basic imputation methods used were the following:

1. Vehicle characteristics were imputed by hot-deck procedures.
2. The cost of fuel was imputed to be the average cost of fuel, based upon the survey results for each fuel type within Census divisions.
3. Miles-per-gallon was imputed through mean value imputation for classes of vehicles with similar characteristics. (Make, model, and year were used whenever they were available.)
4. Annual miles driven for vehicles were calculated by several means depending upon the extent of mileage data available such as beginning and end of year odometer readings, odometer readings during the year from monthly purchase logs, or mileage data available from the RECS personal interview data. If at least one and one-half months of mileage data were available, scaling methods were applied to annualize the data.³ For less data, regression model imputation procedures were used, making use of RECS personal interview data whenever that was available.

²For households which owned or had the regular use of a vehicle as of July 1, 1983.

³Vehicles for which mileage data were scaled to a 365 day period were not considered imputed in Table B1.



Appendix B (Continued)

Sampling Error

The form of the sampling error that is presented here is the relative standard error (RSE). 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

$$S_Y = RSE(Y) \times Y/100.$$

Relative standard errors (RSE) are shown in Tables B2-B8 and are presented for selected tables (Tables 1, 2, 3, 7, 10, 14, 15). RSE for other statistics can be approximated by reference to Tables B2-B8. Select the variance of a similar statistic (miles driven per vehicle, miles driven per household, total gallons of fuel consumed), from a cell whose size (number of households or number of vehicles contributing data to the cell) most closely approximates the cell size of the statistic for which the RSE is desired.⁴ For example, to estimate the RSE for 8,403 miles driven per vehicle for the 17.3 million one-vehicle households with one driver (Table 8), one looks for a similar statistic based on approximately 17.3 million households. Table B6 gives an RSE of 1.7 for miles driven per vehicle for householders aged 25 to 34. This group numbers 17.8 million households (Table 7). Two standard errors for 8,403 miles driven is estimated to be 286 miles ($8,403 \times 1.7/100 \times 2$).

The sampling errors presented in this report do not take any special account of the presence of imputed data. The imputation procedures were performed in a way to minimize the possibility of introducing biases into the data. However, generally the RSE are proportional to the inverse of the square root of the sample size. Hence, the addition of imputed data effectively increases the sample size and can make the estimates of the RSE smaller than they should be. Therefore, an approximate upper bound for the amount that the reported RSE could be increased to take account of imputed data can be computed by dividing by the ratio of the square root of the number of observations with unimputed data to the square root of the total number of observations. For annual miles driven, this gives an approximate upper bound of a 30 percent increase, for miles-per-gallon, a 47 percent increase and for price, a 36 percent increase.⁵

It should be repeated that these are upper bounds. When the imputation procedures are highly accurate, the necessary increase may be close to zero. Imputation procedures use data items that are related to the variable of interest. The higher the correlation between the imputed variable and the variables used in the imputation procedures, the closer the reported RSE for the combined imputed and unimputed data will be to the true RSE.

The complex multistage, multiframe design of the survey makes it almost impossible to construct an exact algebraic variance estimator. The method used to produce variances for the RTECS is balanced half-sample replication (see References 1 and 2). To apply the half-sample technique to this survey, the 131 Primary Sampling Units (PSU) were grouped into 81 strata.

⁴For Table 9, use the household counts in Table 8. For Tables 4 and 5, which present average gallons of fuel consumed per household by household characteristics, household counts can be approximated from household counts in the 1982 RECS publications. Select a household count from a cell with similar household characteristics.

⁵For gallons consumed and expenditures use the upper bound for miles driven, a 30 percent increase.



Appendix B (Continued)

Thirty-one of the strata were treated as self-representing; either they consisted of large metropolitan areas that came into the sample with certainty or they were PSU in a stratum that could not be paired with another stratum that had similar characteristics. In these strata, segments were divided into two replication groups. Each of the remaining 50 strata consisted of two sample PSU belonging to the same Census division. The two replication groups in these strata consisted of one PSU each.

For this survey, a fully balanced half-sample design was not used. Instead, the half-samples were balanced only among strata in the same Census region. If a fully balanced design were used, it would require 88 half-samples. By balancing only within Census regions, a balanced design could be constructed using 32 half-samples.

The survey was constructed so that the results in each Census region can stand alone. No PSU lines cross Census region boundaries. The nonself-representing PSU were paired within Census regions. The ratio estimation was also done within each Census region. Consequently, the national totals can be considered to be the sum of four independent totals for the four Census regions. Therefore, the variance of a national total is the sum of the variances for its four corresponding regional totals. This fact was used as one justification for balancing the half-sample design only within Census regions.

The 32 half-sample design is defined by a 32×81 matrix of +1's and -1's. The 32 rows correspond to the 32 half-samples and the 81 columns correspond to the 81 pairs of replication groups. The +1's and -1's determine which of the groups in the pairs is used in each half-sample. All column totals are 0. Therefore, each of the groups is used in exactly 16 of the half-samples. The columns for sets of pairs that fall within the same Census region are orthogonal. This is not necessarily true for columns corresponding to pairs that fall into different Census regions.

The 32×81 design matrix was constructed using a 32×32 orthogonal matrix adapted from an article by Plackett and Burman (Reference 3). The rows of this 32×32 matrix were randomly sorted. The sorting preserves orthogonality. For each Census region, K columns were randomly selected from the sort matrix. Therefore, K is the number of replication groups in a Census region. After the columns for a Census region have been selected, the rows are randomly sorted again.

Without the random sortings, any two of the columns would either be orthogonal or identical. For any column, at most three other columns could be identical to it. The three other columns would correspond to pairs in the three other Census regions. When two columns are identical, it means the groups corresponding to the +1's will always be in 16 half-samples together. (The groups corresponding to the -1's would follow a similar pattern.) Random sorting makes the possibility of two identical rows zero for all practical purposes.

Variance estimates for selected survey statistics were created by computing 32 half-sample estimates for each statistic. If a +1 falls in the i^{th} row and j^{th} column of the design matrix, the replication group corresponding to the +1 in the j^{th} pair was used in the i^{th} half-sample. The sampling weights in each half-sample were ratio-adjusted upward so that the total number of households in each Census region classified by SMSA status corresponded to the control total for that cell.

As a result of using control totals, the total number of households in each of the 12 cells (Census region classified by SMSA status) is the same for all half-samples. The variance for these 12 totals, then, is zero. Any errors in these numbers are biases. In particular, they are affected by any undercount or overcount in the 1980 Census.



Appendix B (Continued)

The half-sample variance estimate for the survey estimate Y' of characteristic Y is given by

$$s_{Y'}^2 = \sum (Y'_i - Y')^2/32,$$

where Y'_i is the i^{th} half-sample estimate of Y , and Y' is the full sample estimate of Y . The half-sample procedure measures variability due to sampling error and random response variance.



Appendix B (Continued)

Table B2. Household Motor Fuel Consumption and Expenditures, 1983, Relative Standard Errors (Percent)

Household Characteristics	Number of Households (millions)	Miles Driven (billions)	Gallons Consumed (billions)	Expenditures (billion dollars)
Total	0.9	2.2	2.2	2.3
Census Region and Division				
Northeast.....	2.4	3.8	3.8	3.9
New England.....	8.5	9.0	9.0	9.0
Middle Atlantic.....	4.7	5.9	5.4	5.4
North Central.....	2.7	4.3	3.9	3.7
East North Central.....	4.4	6.8	5.9	5.8
West North Central.....	6.4	8.0	7.3	7.2
South.....	1.5	4.8	4.6	4.6
South Atlantic.....	4.0	7.8	7.8	7.6
East South Central.....	6.7	10.9	9.7	9.8
West South Central.....	4.8	7.0	6.3	6.6
West.....	.9	3.0	3.0	3.1
Mountain.....	6.8	8.9	7.6	7.9
Pacific.....	2.9	4.7	5.1	5.1
Area Type				
Metropolitan.....	2.8	4.2	4.0	4.0
Central City.....	3.7	5.0	5.2	5.1
Outside Central City.....	4.4	5.9	5.4	5.5
Nonmetropolitan.....	6.7	8.6	7.8	8.1
Average Number of Vehicles 1983 (vehicle years)				
1 or Fewer.....	3.0	3.6	3.9	3.8
2.....	3.1	3.9	4.0	4.0
3 or More.....	4.6	5.4	5.6	5.6
Number of Drivers (Fall 1982)				
1.....	2.8	3.5	3.5	3.7
2.....	2.1	2.8	2.9	2.9
3 or More.....	4.5	5.4	5.8	5.9
None/No Answer.....	26.6	30.7	32.4	32.1
Origin of Householder				
White.....	1.4	2.4	2.2	2.3
Black.....	8.9	11.0	11.3	11.5
Other.....	15.2	19.7	19.1	19.5
Hispanic Descent				
Yes.....	12.1	12.7	13.5	13.5
No.....	1.0	2.4	2.3	2.4
Age of Householder				
24 Years and Under.....	8.3	11.0	11.1	11.2
25 to 34 Years.....	3.2	4.5	4.1	4.2
35 to 44 Years.....	3.9	3.9	5.2	5.1
45 to 59 Years.....	3.6	4.8	5.1	5.1
60 Years and Over.....	4.5	4.8	4.7	4.8
Household Size				
1 Person.....	5.8	7.4	7.3	7.4
2 Persons.....	3.1	3.9	3.6	3.6
3 Persons.....	5.7	5.9	5.8	5.9
4 Persons.....	3.8	4.6	5.1	5.0
5 or More Persons.....	5.3	6.4	6.5	6.4

SEE FOOTNOTES AT END OF TABLE



Appendix B (Continued)

Table B2. (Continued)

Household Characteristics	Number of Households (millions)	Miles Driven (billions)	Gallons Consumed (billions)	Expenditures (billion dollars)
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)				
--Long-term Average				
<2,000 CDD and >7,000 HDD.....	18.3	18.3	17.9	18.2
<2,000 CDD and 5,500 to 7,000 HDD.....	8.4	9.5	9.8	9.7
<2,000 CDD and 4,000 to 5,499 HDD.....	9.4	10.0	10.3	10.3
<2,000 CDD and <4,000 HDD.....	8.2	8.6	9.1	9.2
>2,000 CDD and <4,000 HDD.....	7.3	10.0	9.9	10.1
Heating Degree-Days (HDD)				
April 1982 Through March 1983				
> 5,499 HDD.....	6.7	7.8	7.5	7.5
4,000 to 5,499 HDD.....	10.3	11.2	11.3	11.2
< 4,000 HDD.....	5.6	6.6	6.9	7.0
Measured Heated Square Footage of Residence				
Less than 600 Square Feet.....	8.0	10.2	10.7	10.5
600 to 999 Square Feet.....	4.1	4.9	5.1	5.0
1,000 to 1,599 Square Feet....	2.9	4.4	4.5	4.5
1,600 to 1,999 Square Feet....	4.8	6.5	6.4	6.5
2,000 to 2,399 Square Feet....	6.1	7.1	7.2	7.3
2,400 to 2,999 Square Feet....	7.6	8.9	8.9	9.0
3,000 or More Square Feet.....	8.9	9.1	9.8	9.8
Energy Used in The Home--				
April 1982 through March 1983 (million Btu per household)				
50 or Less.....	6.1	6.0	6.1	6.1
51 to 75.....	4.4	6.3	6.3	6.3
76 to 100.....	5.2	5.5	5.5	5.6
101 to 125.....	5.5	5.9	6.2	6.2
126 to 150.....	5.7	5.5	6.1	6.1
151 or Over.....	6.4	8.0	8.0	8.1
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)				
600 or Less.....	6.6	6.7	6.7	6.8
601 to 800.....	6.5	6.6	6.9	6.8
801 to 1,000.....	4.2	6.3	6.5	6.6
1,001 to 1,200.....	4.7	5.5	5.8	5.7
1,201 to 1,600.....	5.2	5.9	5.8	5.9
1,601 or Over.....	7.2	8.7	8.5	8.5
Main Heating Fuel				
Natural Gas.....	3.7	4.1	4.2	4.2
Electricity.....	7.1	8.7	8.6	8.5
Fuel Oil or Kerosene.....	7.3	8.2	8.5	8.8
Wood.....	12.0	13.6	13.0	13.1
Liquefied Petroleum Gas.....	12.9	15.2	15.2	15.5
Other/None.....	31.5	34.3	31.3	31.7

SEE FOOTNOTES AT END OF TABLE



Appendix B (Continued)

Table B2. (Continued)

Household Characteristics	Number of Households (millions)	Miles Driven (billions)	Gallons Consumed (billions)	Expenditures (billion dollars)
Family Income 1983				
Less than \$ 5,000.....	9.2	10.5	10.0	9.8
\$ 5,000 - \$ 9,999.....	6.4	6.1	5.5	5.6
\$10,000 - \$14,999.....	5.7	7.3	7.6	7.6
\$15,000 - \$19,999.....	4.6	5.2	6.1	6.0
\$20,000 - \$24,999.....	5.7	6.8	6.5	6.5
\$25,000 - \$34,999.....	3.8	4.8	4.8	4.9
\$35,000 or More.....	4.9	5.7	5.8	5.8

"-" = Data not applicable.

"q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Appendix B (Continued)

Table B3. Household Motor Gasoline Consumption and Miles per Gallon by Type of Fuel, 1983, Relative Standard Errors (Percent)

Household Characteristics	Motor Gasoline			
	Leaded		Unleaded	
	Gallons Consumed (billions)	Miles per Gallon	Gallons Consumed (billions)	Miles per Gallon
Total	3.1	1.0	2.7	1.0
Census Region and Division				
Northeast.....	9.4	2.5	3.6	2.1
New England.....	12.8	3.4	9.5	3.1
Middle Atlantic.....	11.8	3.3	6.2	2.7
North Central.....	7.3	1.2	6.1	1.6
East North Central.....	10.5	1.6	8.5	2.0
West North Central.....	9.4	2.2	10.2	2.3
South.....	5.2	2.1	5.8	1.2
South Atlantic.....	8.7	4.1	8.5	1.7
East South Central.....	10.0	1.9	11.6	2.7
West South Central.....	8.7	1.7	11.1	1.9
West.....	7.3	2.1	4.5	1.9
Mountain.....	10.2	2.4	15.7	3.8
Pacific.....	9.6	2.6	5.0	2.2
Area Type				
Metropolitan.....	4.4	1.4	4.8	1.1
Central City.....	7.5	2.4	5.5	1.6
Outside Central City.....	5.8	1.4	6.7	1.4
Nonmetropolitan.....	6.7	1.2	10.6	2.0
Average Number of Vehicles 1983 (vehicle years)				
1 or Fewer.....	7.0	1.7	4.4	1.3
2.....	5.1	1.8	4.4	1.2
3 or More.....	6.1	1.1	7.4	1.7
Number of Drivers (Fall 1982)				
1.....	6.8	2.1	4.7	2.3
2.....	3.1	1.3	3.7	1.1
3 or More.....	7.4	1.7	6.3	1.7
None/No Answer.....	Q	Q	34.9	9.4
Origin of Householder				
White.....	3.2	0.8	3.0	1.0
Black.....	14.0	5.5	11.9	2.8
Other.....	19.8	6.8	22.3	5.2
Hispanic Descent				
Yes.....	18.2	3.0	15.3	3.4
No.....	3.2	1.0	2.7	1.0
Age of Householder				
24 Years and Under.....	10.7	2.6	13.2	3.6
25 to 34 Years.....	6.4	2.2	6.3	2.0
35 to 44 Years.....	6.3	3.1	5.4	1.6
45 to 59 Years.....	7.5	1.1	5.2	1.4
60 Years and Over.....	8.2	2.0	5.3	1.9

SEE FOOTNOTES AT END OF TABLE



Appendix B (Continued)

Table B3. (Continued)

Household Characteristics	Motor Gasoline			
	Leaded		Unleaded	
	Gallons Consumed (billions)	Miles per Gallon	Gallons Consumed (billions)	Miles per Gallon
Household Size				
1 Person.....	12.8	3.1	7.2	2.8
2 Persons.....	5.4	1.9	4.1	1.2
3 Persons.....	6.9	1.9	6.8	1.5
4 Persons.....	6.5	1.9	4.9	1.9
5 or More Persons.....	10.3	3.3	6.3	2.0
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)				
--Long-term Average				
<2,000 CDD and >7,000 HDD.....	21.8	2.1	17.8	3.2
<2,000 CDD and 5,500 to 7,000 HDD.....	12.2	1.6	9.3	1.8
<2,000 CDD and 4,000 to 5,499 HDD.....	12.4	2.0	10.7	1.5
<2,000 CDD and <4,000 HDD.....	11.4	1.9	7.8	1.4
>2,000 CDD and <4,000 HDD.....	8.5	3.3	12.5	2.0
Heating Degree-Days (HDD)				
April 1982 Through March 1983				
> 5,499 HDD.....	10.0	1.1	7.6	1.7
4,000 to 5,499 HDD.....	11.9	1.6	12.3	1.4
< 4,000 HDD.....	8.2	1.7	6.8	1.1
Measured Heated Square Footage of Residence				
Less than 600 Square Feet.....	14.2	2.6	11.4	4.0
600 to 999 Square Feet.....	8.2	1.3	5.6	2.3
1,000 to 1,599 Square Feet....	5.7	2.3	5.5	1.4
1,600 to 1,999 Square Feet....	8.0	2.8	7.6	1.7
2,000 to 2,399 Square Feet....	8.4	3.1	9.3	2.3
2,400 to 2,999 Square Feet....	10.5	2.0	10.7	2.1
3,000 or More Square Feet.....	15.6	3.8	10.4	2.5
Energy Used in the Home--				
April 1982 through March 1983 (million Btu per household)				
50 or less.....	6.9	2.2	7.9	2.8
51 to 75.....	8.1	3.5	6.6	1.7
76 to 100.....	7.2	1.8	6.2	1.9
101 to 125.....	9.3	2.2	7.0	1.8
126 to 150.....	8.2	1.5	7.1	2.0
151 or Over.....	11.5	1.4	7.8	1.3
Expenditures for Energy Used in the Home--April 1982 through March 1983 (dollars per household)				
600 or Less.....	9.8	2.6	7.8	2.4
601 to 800.....	8.5	2.0	8.6	2.2
801 to 1,000.....	6.4	1.6	7.7	2.6
1,001 to 1,200.....	9.1	3.6	5.8	1.8
1,201 to 1,600.....	8.0	2.2	5.9	1.3
1,601 or Over.....	10.5	1.7	10.4	1.5
Main Heating Fuel				
Natural Gas.....	5.7	1.0	4.3	1.0
Electricity.....	11.1	3.8	8.5	2.2
Fuel Oil or Kerosene.....	11.6	2.3	8.2	2.1
Wood.....	13.5	2.2	14.4	4.2
Liquefied Petroleum Gas.....	16.4	3.3	20.9	3.8
Other/None.....	26.6	6.6	38.0	8.1

SEE FOOTNOTES AT END OF TABLE



Appendix B (Continued)

Table B3. (Continued)

Household Characteristics	Motor Gasoline			
	Leaded		Unleaded	
	Gallons Consumed (billions)	Miles per Gallon	Gallons Consumed (billions)	Miles per Gallon
Family Income 1983				
Less than \$ 5,000.....	17.1	4.7	10.5	5.2
\$ 5,000 - \$ 9,999.....	8.0	2.0	9.0	3.1
\$10,000 - \$14,999.....	11.7	2.0	7.4	2.3
\$15,000 - \$19,999.....	9.0	4.0	8.9	2.4
\$20,000 - \$24,999.....	7.5	2.7	8.7	1.9
\$25,000 - \$34,999.....	6.3	1.8	5.3	1.7
\$35,000 or More.....	8.7	2.1	5.3	1.5

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Appendix B (Continued)

Table B4. Household Motor Fuel Consumption and Expenditures per Household, 1983, Relative Standard Errors (Percent)

Household Characteristics	Number of Households (millions)	Number of Vehicles per Household	Averages per Household		
			Gallons Consumed	Miles Driven	Expenditures (dollars)
Total	0.9	1.1	1.9	1.8	1.9
Census Region and Division					
Northeast.....	2.4	1.9	2.9	3.1	3.0
New England.....	8.5	3.1	6.2	5.8	6.1
Middle Atlantic.....	4.7	2.4	3.3	3.7	3.5
North Central.....	2.7	1.9	2.5	2.7	2.4
East North Central.....	4.4	2.7	3.5	3.6	3.3
West North Central.....	6.4	2.1	3.4	4.0	3.1
South.....	1.5	1.9	3.7	4.0	3.8
South Atlantic.....	4.0	3.0	6.1	6.2	5.9
East South Central.....	6.7	4.1	7.4	7.4	7.5
West South Central.....	4.8	2.9	3.8	4.5	4.5
West.....	.9	2.3	2.5	2.5	2.6
Mountain.....	6.8	3.5	4.1	4.7	4.4
Pacific.....	2.9	2.9	3.2	3.0	3.3
Area Type					
Metropolitan.....	2.8	1.3	2.1	2.1	2.2
Central City.....	3.7	1.9	3.7	3.1	3.7
Outside Central City.....	4.4	1.2	1.9	2.3	2.0
Nonmetropolitan.....	6.7	2.1	2.8	3.1	2.9
Average Number of Vehicles 1983 (vehicle years)					
1 or Fewer.....	3.0	.3	2.3	2.3	2.3
2.....	3.1	.2	1.7	1.4	1.6
3 or More.....	4.6	.9	2.5	2.2	2.6
Number of Drivers (Fall 1982)					
1.....	2.8	1.3	2.8	3.3	3.0
2.....	2.1	1.0	1.4	1.4	1.4
3 or More.....	4.5	1.9	2.8	2.2	2.8
None/No Answer.....	26.6	10.2	15.1	12.6	14.7
Origin of Householder					
White.....	1.4	1.2	1.7	1.8	1.7
Black.....	8.9	3.2	7.5	6.5	7.5
Other.....	15.2	5.7	7.4	9.1	7.6
Hispanic Descent					
Yes.....	12.1	3.7	4.6	4.0	4.5
No.....	1.0	1.1	1.9	1.8	2.0
Age of Householder					
24 Years and Under.....	8.3	3.2	4.9	4.6	5.1
25 to 34 Years.....	3.2	2.0	2.2	2.3	2.3
35 to 44 Years.....	3.9	1.7	3.5	2.7	3.5
45 to 59 Years.....	3.6	2.3	3.4	3.3	3.6
60 Years and Over.....	4.5	1.8	2.5	2.6	2.7
Household Size					
1 Person.....	5.8	2.1	4.4	4.5	4.5
2 Persons.....	3.1	1.3	1.8	2.0	1.9
3 Persons.....	5.7	1.9	2.0	2.4	2.0
4 Persons.....	3.8	2.1	3.4	2.5	3.3
5 or More Persons.....	5.3	2.3	4.0	3.1	4.0

SEE FOOTNOTES AT END OF TABLE



Appendix B (Continued)

Table B4. (Continued)

Household Characteristics	Number of Households (millions)	Number of Vehicles per Household	Averages per Household		
			Gallons Consumed	Miles Driven	Expenditures (dollars)
Annual Heating Degree-days (HDD) and Cooling Degree-days (CDD)					
--Long-term Average					
<2,000 CDD and >7,000 HDD.....	18.3	3.7	3.7	3.0	3.5
<2,000 CDD and 5,500 to 7,000 HDD.....	8.4	2.1	3.1	3.1	3.0
<2,000 CDD and 4,000 to 5,499 HDD.....	9.4	1.6	2.9	3.2	2.9
<2,000 CDD and <4,000 HDD.....	8.2	2.2	2.9	2.7	3.0
>2,000 CDD and <4,000 HDD.....	7.3	3.4	7.4	7.6	7.6
Heating Degree-days (HDD)					
April 1982 Through March 1983					
> 5,499 HDD.....	6.7	2.1	2.3	2.3	2.3
4,000 to 5,499 HDD.....	10.3	1.7	2.9	3.2	2.9
< 4,000 HDD.....	5.6	2.0	3.5	3.3	3.6
Measured Heated Square Footage of Residence					
Less than 600 Square Feet.....	8.0	3.2	6.9	6.9	6.8
600 to 999 Square Feet.....	4.1	1.7	3.5	3.1	3.4
1,000 to 1,599 Square Feet....	2.9	1.8	2.8	2.6	2.8
1,600 to 1,999 Square Feet....	4.8	2.6	3.8	3.6	3.8
2,000 to 2,399 Square Feet....	6.1	2.8	3.3	2.9	3.3
2,400 to 2,999 Square Feet....	7.6	2.9	4.4	4.3	4.4
3,000 or More Square Feet.....	8.9	3.2	3.6	4.1	3.5
Energy Used in The Home--					
April 1982 through March 1983					
(million Btu per household)					
50 or Less.....	6.1	2.4	3.5	4.0	3.5
51 to 75.....	4.4	2.3	4.1	3.4	4.1
76 to 100.....	5.2	2.0	3.3	3.1	3.2
101 to 125.....	5.5	1.8	2.7	2.7	2.7
126 to 150.....	5.7	2.7	3.6	3.6	3.6
151 or Over.....	6.4	2.4	3.6	3.4	3.6
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)					
600 or Less.....	6.6	2.0	3.6	3.8	3.7
601 to 800.....	6.5	1.9	2.9	2.9	3.0
801 to 1,000.....	4.2	2.0	3.4	3.3	3.6
1,001 to 1,200.....	4.7	1.6	2.9	2.3	2.8
1,201 to 1,600.....	5.2	1.6	3.3	3.1	3.3
1,601 or Over.....	7.2	2.3	2.4	2.6	2.4
Main Heating Fuel					
Natural Gas.....	3.7	1.3	2.1	1.9	2.1
Electricity.....	7.1	2.8	6.4	6.2	6.2
Fuel Oil or Kerosene.....	7.3	2.4	4.1	3.5	4.2
Wood.....	12.0	3.0	4.5	4.3	4.4
Liquefied Petroleum Gas.....	12.9	4.0	7.1	7.4	7.6
Other/None.....	31.5	6.2	8.1	8.9	8.4
Family Income 1983					
Less than \$ 5,000.....	9.2	4.8	7.0	7.9	7.0
\$ 5,000 - \$ 9,999.....	6.4	2.6	4.2	4.5	4.4
\$10,000 - \$14,999.....	5.7	2.2	3.5	3.5	3.5
\$15,000 - \$19,999.....	4.6	1.9	4.9	3.8	4.9
\$20,000 - \$24,999.....	5.7	2.6	3.8	4.0	3.9
\$25,000 - \$34,999.....	3.8	1.3	2.3	2.3	2.3
\$35,000 or More.....	4.9	2.0	2.9	2.3	2.9

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Appendix B (Continued)

Table B5. Household Motor Fuel Consumption and Expenditures per Vehicle, Miles per Gallon, and Price per Gallon, 1983, Relative Standard Errors (Percent)

Household Characteristics	Number of Vehicles (millions)	Averages per Vehicle			Averages per Gallon	
		Gallons Consumed	Miles Driven	Expenditures (dollars)	Miles per Gallon	Price (dollars)
Total	1.6	1.3	1.3	1.3	0.8	0.2
Census Region and Division						
Northeast.....	3.0	2.3	2.4	2.4	2.0	.3
New England.....	7.7	4.0	3.0	3.9	2.8	.5
Middle Atlantic.....	4.8	2.8	3.3	3.0	2.6	.3
North Central.....	3.4	1.9	1.9	1.8	1.6	.4
East North Central.....	5.4	2.0	2.0	1.9	2.1	.4
West North Central.....	7.1	3.9	3.9	3.7	2.1	.6
South.....	2.8	2.5	2.8	2.6	1.1	.3
South Atlantic.....	5.1	3.7	4.1	3.6	1.8	.3
East South Central.....	8.7	5.1	5.0	5.3	2.3	.4
West South Central.....	6.2	3.9	4.0	4.3	1.6	.7
West.....	2.9	2.1	1.5	2.1	1.8	.3
Mountain.....	8.5	4.4	3.4	4.7	2.7	.6
Pacific.....	4.7	2.5	1.7	2.4	2.4	.3
Area Type						
Metropolitan.....	3.5	1.4	1.4	1.5	1.0	.2
Central City.....	4.3	2.9	2.3	2.8	1.5	.3
Outside Central City.....	4.9	1.2	1.6	1.3	1.2	.3
Nonmetropolitan.....	7.2	1.9	2.5	2.0	1.6	.4
Average Number of Vehicles 1983 (vehicle years)						
1 or Fewer.....	3.1	2.2	2.3	2.3	1.3	.3
2.....	3.1	1.6	1.4	1.6	1.1	.2
3 or More.....	4.8	2.1	1.8	2.1	1.3	.3
Number of Drivers (Fall 1982)						
1.....	3.0	2.3	2.8	2.4	1.5	.3
2.....	2.5	1.1	1.1	1.1	.9	.2
3 or More.....	4.8	2.1	1.7	2.1	1.4	.2
None/No Answer.....	29.6	12.6	9.3	13.3	9.7	2.3
Origin of Householder						
White.....	2.0	1.1	1.2	1.1	.8	.2
Black.....	9.8	5.7	4.3	5.7	2.6	.5
Other.....	15.9	7.1	6.7	7.2	4.1	.8
Hispanic Descent						
Yes.....	12.9	3.7	3.8	3.4	2.5	0.7
No.....	1.6	1.4	1.3	1.4	.8	.2
Age of Householder						
24 Years and Under.....	9.4	3.8	3.1	3.9	2.5	.4
25 to 34 Years.....	4.4	1.5	1.7	1.6	1.5	.2
35 to 44 Years.....	4.4	2.2	1.7	2.3	1.5	.2
45 to 59 Years.....	4.4	2.1	1.7	2.2	1.0	.3
60 Years and Over.....	4.3	2.1	2.2	2.2	1.5	.3
Household Size						
1 Person.....	6.6	3.3	3.3	3.3	2.3	.4
2 Persons.....	3.3	1.4	1.5	1.5	1.1	.2
3 Persons.....	5.7	1.7	2.1	1.8	1.3	.2
4 Persons.....	4.7	2.7	2.2	2.7	1.7	.3
5 or More Persons.....	6.1	3.0	2.0	3.0	1.9	.3

SEE FOOTNOTES AT END OF TABLE



Appendix B (Continued)

Table B5. (Continued)

Household Characteristics	Number of Vehicles (millions)	Averages per Vehicle			Averages per Gallon	
		Gallons Consumed	Miles Driven	Expenditures (dollars)	Miles per Gallon	Price (dollars)
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)						
--Long-term Average						
<2,000 CDD and >7,000 HDD.....	18.2	3.2	3.4	3.1	3.1	.5
<2,000 CDD and 5,500 to 7,000 HDD.....	9.2	1.7	1.9	1.7	1.6	.2
<2,000 CDD and 4,000 to 5,499 HDD.....	9.9	2.1	2.4	2.2	1.4	.4
<2,000 CDD and <4,000 HDD.....	8.5	2.2	1.9	2.2	1.5	.3
>2,000 CDD and <4,000 HDD.....	8.4	4.9	4.9	5.1	1.3	.5
Heating Degree-Days (HDD)						
April 1982 Through March 1983						
> 5,499 HDD.....	7.3	1.5	1.7	1.5	1.6	.3
4,000 to 5,499 HDD.....	10.9	1.9	2.2	2.0	1.1	.4
< 4,000 HDD.....	6.2	2.4	2.3	2.5	.9	.3
Measured Heated Square Footage of Residence						
Less than 600 Square Feet.....	8.5	5.7	6.0	5.6	3.2	.6
600 to 999 Square Feet.....	4.5	2.6	2.1	2.5	1.6	.3
1,000 to 1,599 Square Feet....	3.5	1.8	1.4	1.9	1.3	.2
1,600 to 1,999 Square Feet....	5.8	2.3	2.1	2.4	1.6	.4
2,000 to 2,399 Square Feet....	6.7	2.4	2.4	2.6	1.9	.4
Measured Heated Square Footage of Residence						
2,400 to 2,999 Square Feet....	7.7	3.3	3.4	3.3	1.6	0.3
3,000 or More Square Feet....	9.4	3.4	3.2	3.3	2.5	.5
Energy Used in The Home--						
April 1982 through March 1983 (million Btu per household)						
50 or Less.....	6.0	2.3	2.7	2.4	1.9	.3
51 to 75.....	5.2	2.8	2.3	2.8	1.9	.3
76 to 100.....	5.4	2.3	2.3	2.3	1.4	.3
101 to 125.....	5.5	2.1	1.9	2.2	1.5	.4
126 to 150.....	6.0	2.3	2.5	2.3	1.4	.3
151 or Over.....	7.0	2.2	1.9	2.2	1.3	.2
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)						
600 or Less.....	6.9	3.3	3.5	3.4	2.0	.3
601 to 800.....	6.8	2.5	2.8	2.6	1.8	.3
801 to 1,000.....	5.3	2.4	2.4	2.6	1.7	.3
1,001 to 1,200.....	5.0	3.1	1.8	2.9	2.2	.4
1,201 to 1,600.....	5.3	2.3	2.3	2.3	1.2	.2
1,601 or Over.....	8.1	1.9	2.1	2.0	1.4	.4
Main Heating Fuel						
Natural Gas.....	4.1	1.5	1.2	1.5	.9	.2
Electricity.....	7.7	4.0	3.9	3.9	1.6	.4
Fuel Oil or Kerosene.....	7.5	2.7	2.4	2.9	2.0	.4
Wood.....	12.3	2.8	3.4	2.7	2.5	.5
Liquefied Petroleum Gas.....	13.9	3.9	4.7	4.5	2.8	.8
Other/None.....	34.1	7.4	5.5	7.5	6.3	1.0
Family Income 1983						
Less than \$ 5,000.....	10.3	7.3	8.0	7.5	3.9	.9
\$ 5,000 - \$ 9,999.....	5.1	3.0	3.7	3.2	2.2	.6
\$10,000 - \$14,999.....	6.4	2.5	2.7	2.5	2.0	.4
\$15,000 - \$19,999.....	4.5	3.8	2.5	3.7	2.2	.3
\$20,000 - \$24,999.....	5.9	3.1	3.2	3.2	1.2	.3
\$25,000 - \$34,999.....	4.0	2.1	2.1	2.1	1.7	.3
\$35,000 or More.....	5.5	2.2	1.9	2.3	1.5	.2

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Appendix B (Continued)

Table B6. Household Motor Fuel Consumption per Vehicle and Miles per Gallon by Vehicle Model Year, 1983, Relative Standard Errors (Percent)

Household Characteristics	1979 or Later			1974 to 1978			1973 or Earlier			Other/No Answer
	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)
Total	2.9	1.6	1.1	2.2	1.3	0.9	3.2	2.9	1.3	19.6
Census Region and Division										
Northeast.....	4.4	2.9	2.5	6.0	2.7	1.9	9.5	6.9	2.2	Q
New England.....	9.6	4.6	2.9	9.8	5.7	2.0	11.0	10.7	5.8	Q
Middle Atlantic.....	7.0	3.6	3.2	9.2	2.9	2.8	11.3	8.5	2.6	Q
North Central.....	6.2	2.5	2.2	4.5	2.3	1.8	6.4	5.5	1.8	Q
East North Central.....	9.4	3.0	2.7	5.5	2.5	2.1	9.0	6.7	2.6	Q
West North Central.....	9.3	4.7	3.8	10.7	4.5	3.1	10.6	9.4	2.4	Q
South.....	6.2	2.7	1.1	4.0	2.9	1.7	5.1	5.3	2.9	31.9
South Atlantic.....	7.4	4.0	1.5	7.1	3.1	2.6	7.5	8.1	5.3	44.6
East South Central.....	14.4	8.4	3.2	12.1	5.3	3.6	13.8	7.3	3.1	Q
West South Central.....	12.8	2.6	1.5	6.0	6.6	1.8	12.1	10.4	2.6	Q
West.....	5.0	3.3	2.1	4.8	3.4	2.1	7.0	4.2	1.7	Q
Mountain.....	13.3	7.6	3.3	9.5	5.7	3.7	15.6	9.2	4.3	Q
Pacific.....	6.6	3.3	2.7	6.5	4.1	2.5	8.6	4.4	1.6	Q
Area Type										
Metropolitan.....	4.8	1.8	1.3	4.2	1.3	1.0	4.2	3.7	1.6	20.8
Central City.....	5.7	3.3	1.9	6.2	2.4	1.5	4.5	5.9	3.2	34.9
Outside Central City.....	6.3	2.1	1.7	6.4	2.0	1.2	6.0	3.3	1.4	25.4
Nonmetropolitan.....	11.8	3.6	2.4	6.7	2.6	1.3	8.9	3.4	2.3	36.7
Average Number of Vehicles 1983 (vehicle years)										
1 or Fewer.....	4.4	3.0	1.5	4.5	2.9	1.8	6.6	4.2	2.4	31.5
2.....	4.6	2.0	1.5	3.5	2.1	.9	4.1	4.5	2.6	30.0
3 or More.....	6.5	2.4	2.0	5.6	3.5	1.5	6.6	2.8	1.4	Q
Number of Drivers (Fall 1982)										
1.....	6.5	4.2	2.7	5.7	3.3	1.8	5.6	4.4	2.0	32.4
2.....	3.7	1.6	1.3	3.7	1.8	1.0	4.1	3.8	2.3	27.5
3 or More.....	5.5	2.6	2.3	6.1	3.5	1.5	8.5	4.2	2.1	Q
None/No answer.....	37.2	19.5	19.3	41.5	24.2	9.0	Q	Q	Q	Q
Origin of Householder										
White.....	3.6	1.5	1.2	2.6	1.4	.9	3.9	2.2	.9	18.2
Black.....	12.8	5.4	3.7	11.0	5.2	3.2	11.1	12.2	6.0	Q
Other.....	25.6	12.4	9.0	21.7	9.8	5.5	18.1	12.0	7.1	Q
Hispanic Descent										
Yes.....	15.0	9.0	4.6	14.5	5.0	2.5	20.6	7.6	3.9	Q
No.....	3.0	1.6	1.1	2.3	1.4	.9	3.0	2.9	1.4	20.8
Age of Householder										
24 Years and Under.....	15.1	7.2	5.6	10.2	4.4	2.5	13.3	8.3	3.8	Q
25 to 34 Years.....	6.5	2.9	2.1	4.6	2.3	1.9	8.0	3.6	2.3	31.0
35 to 44 Years.....	5.8	2.2	1.9	7.0	2.5	1.5	6.8	5.9	4.7	Q
45 to 59 Years.....	4.5	2.2	1.7	5.2	2.9	1.1	6.3	5.0	1.8	Q
60 Years and Over.....	7.2	3.0	2.3	6.6	3.6	1.6	7.2	4.4	2.1	Q
Household Size										
1 Person.....	10.5	4.4	2.9	9.0	6.8	2.9	7.6	5.9	3.0	Q
2 Persons.....	5.1	2.3	1.5	4.2	2.8	1.4	5.9	3.6	2.2	28.6
3 Persons.....	7.0	2.4	1.7	6.4	2.8	1.5	7.9	4.9	1.6	Q
4 Persons.....	6.0	3.2	1.9	6.1	3.5	2.1	8.3	4.5	2.0	32.3
5 or More Persons.....	9.1	3.9	3.4	6.4	3.4	1.6	8.8	6.8	4.8	Q

SEE FOOTNOTES AT END OF TABLE



Appendix B (Continued)

Table B6. (Continued)

Household Characteristics	1979 or Later			1974 to 1978			1973 or Earlier			Other/No Answer
	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)	Gallons per Vehicle	Miles per Gallon	Total Vehicles (millions)
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)										
--Long-term Average										
<2,000 CDD and >7,000 HDD.....	19.8	3.6	3.0	18.9	5.5	3.0	19.7	6.8	2.4	Q
<2,000 CDD and 5,500 to 7,000 HDD.....	9.5	2.8	2.8	10.1	1.8	1.5	11.2	4.9	2.5	Q
<2,000 CDD and 4,000 to 5,499 HDD.....	7.6	3.0	2.3	12.7	2.6	1.7	12.8	5.1	2.2	Q
<2,000 CDD and <4,000 HDD.....	8.0	3.1	1.5	9.5	3.4	2.2	10.3	3.0	1.6	32.8
>2,000 CDD and <4,000 HDD.....	11.0	4.6	1.7	9.8	5.5	2.1	11.0	12.7	5.8	Q
Heating Degree-Days (HDD)										
April 1982 Through March 1983										
> 5,499 HDD.....	7.6	2.3	2.2	7.4	2.4	1.4	9.9	4.2	1.9	Q
4,000 to 5,499 HDD.....	10.0	2.7	2.0	12.8	2.1	1.5	12.9	4.9	2.0	38.6
< 4,000 HDD.....	5.4	2.9	1.2	6.5	2.9	1.3	9.4	4.6	2.2	30.3
Measured Heated Square Footage of Residence										
Less than 600 Square Feet.....	12.1	9.9	5.8	13.6	8.4	4.4	14.0	7.9	2.8	Q
600 to 999 Square Feet.....	7.0	3.3	2.6	5.7	3.4	1.9	7.7	4.9	1.6	30.5
1,000 to 1,599 Square Feet.....	5.6	3.0	1.8	5.1	2.1	1.4	5.5	5.1	3.2	Q
1,600 to 1,999 Square Feet.....	7.1	3.3	2.6	7.0	3.1	2.3	8.7	4.3	2.1	Q
2,000 to 2,399 Square Feet.....	8.5	3.2	2.1	8.2	3.8	2.7	9.3	5.5	3.1	Q
2,400 to 2,999 Square Feet.....	11.4	3.9	2.9	8.8	5.0	1.7	10.4	7.8	3.5	Q
3,000 or More Square Feet.....	10.1	3.8	2.5	12.3	4.7	2.6	17.5	7.0	5.0	Q
Energy Used in The Home--										
April 1982 through March 1983 (million Btu per household)										
50 or Less.....	9.3	3.4	3.2	8.1	4.1	2.3	8.5	4.8	3.1	Q
51 to 75.....	8.7	4.1	2.8	6.6	2.7	1.4	7.0	8.0	4.8	Q
76 to 100.....	5.8	3.7	2.0	6.5	3.5	2.2	10.1	5.5	2.9	Q
101 to 125.....	7.6	3.4	2.3	7.6	3.6	2.2	8.4	4.9	1.8	Q
126 to 150.....	7.0	3.0	2.4	10.1	3.2	1.6	7.6	5.4	2.5	Q
151 or Over.....	9.3	2.3	1.9	8.3	3.2	1.3	7.2	4.7	1.7	38.0
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)										
600 or Less.....	9.5	4.1	3.0	8.4	4.3	2.1	10.5	7.0	2.2	Q
601 to 800.....	8.9	4.1	2.8	7.6	3.6	1.8	10.5	5.2	2.7	Q
801 to 1,000.....	6.8	4.7	2.7	7.5	3.0	2.0	6.8	4.5	2.2	Q
1,001 to 1,200.....	6.5	3.0	2.2	7.7	2.6	2.1	5.6	8.6	5.7	Q
1,201 to 1,600.....	6.8	2.8	1.8	7.1	3.8	2.0	8.3	5.2	2.4	Q
1,601 or Over.....	10.0	2.7	2.3	7.5	3.0	1.8	10.7	7.2	2.5	Q
Main Heating Fuel										
Natural Gas.....	4.9	1.8	1.2	5.3	1.9	1.3	4.2	3.7	1.2	27.9
Electricity.....	8.6	2.8	2.4	10.3	4.3	1.9	11.6	12.4	6.7	Q
Fuel Oil or Kerosene.....	8.4	3.5	2.7	9.7	3.1	1.8	10.9	7.2	2.8	Q
Wood.....	17.2	3.3	3.3	12.5	4.8	2.5	14.7	5.6	2.9	Q
Liquefied Petroleum Gas.....	19.5	6.8	4.9	15.7	5.2	3.0	18.5	9.5	4.4	Q
Other/None.....	49.2	14.7	12.4	34.5	11.0	9.1	25.9	10.9	6.8	Q
Family Income 1983										
Less than \$ 5,000.....	24.3	13.2	11.8	18.8	8.1	5.7	15.2	11.9	5.4	Q
\$ 5,000 - \$ 9,999.....	13.5	6.3	4.4	4.7	5.1	2.2	10.5	4.6	1.9	Q
\$10,000 - \$14,999.....	9.3	4.3	3.1	7.7	3.6	2.8	12.0	5.5	2.4	Q
\$15,000 - \$19,999.....	9.6	5.1	3.2	6.0	3.5	1.7	6.8	9.6	6.1	Q
\$20,000 - \$24,999.....	8.2	3.2	1.9	10.1	3.4	2.3	10.2	7.4	2.6	Q
\$25,000 - \$34,999.....	5.7	3.0	2.1	4.4	2.4	2.0	6.8	3.9	1.5	Q
\$35,000 or More.....	5.6	2.3	1.9	6.4	3.7	1.9	8.5	5.8	2.0	30.1

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Appendix B (Continued)

Table B7. Household Energy Expenditures for Fuel Used in the Home and Fuel Used in Motor Vehicles per Household, Relative Standard Errors (Percent)

Household Characteristics	Total Households		Households Without Vehicles		Households With Vehicles			
	Total Households (millions)	Total Energy Expenditures (dollars)	Total Households (millions)	Expenditures for Energy Used in the Home (dollars)	Total Households (millions)	Total Energy Expenditures (dollars)	Expenditures for Energy Used in the Home (dollars)	Transportation Energy Expenditures (dollars)
Total	0	1.8	5.3	3.1	0.9	1.6	1.7	1.9
Census Region and Division								
Northeast.....	0	2.3	8.2	4.5	2.4	2.1	2.1	3.0
New England.....	8.4	4.8	17.1	16.6	8.5	4.3	4.6	6.1
Middle Atlantic.....	2.6	2.9	9.6	4.6	4.7	2.4	2.3	3.5
North Central.....	0	2.3	15.7	7.3	2.7	1.8	2.3	2.4
East North Central.....	2.5	3.0	17.1	8.3	4.4	2.4	3.1	3.3
West North Central.....	5.8	3.1	37.4	10.2	6.4	2.3	3.5	3.1
South.....	0	3.6	9.9	4.0	1.5	3.2	3.3	3.8
South Atlantic.....	3.2	5.6	16.1	5.3	4.0	4.8	4.5	5.9
East South Central.....	5.5	6.7	20.6	9.5	6.7	6.0	5.0	7.5
West South Central.....	4.8	4.7	11.1	8.9	4.8	4.8	6.2	4.5
West.....	0	2.4	10.5	8.1	.9	2.1	2.3	2.6
Mountain.....	6.6	2.2	11.1	16.3	6.8	2.3	2.7	4.4
Pacific.....	2.3	3.4	13.0	9.3	2.9	2.9	3.1	3.3
Area Type								
Metropolitan.....	2.2	1.9	5.5	3.7	2.8	1.7	1.5	2.2
Central City.....	2.2	2.5	5.9	3.8	3.7	2.3	1.7	3.7
Outside Central City.....	4.1	1.8	10.7	6.2	4.4	1.6	2.1	2.0
Nonmetropolitan.....	6.9	2.8	13.4	4.7	6.7	2.7	3.6	2.9
Average Number of Vehicles 1983 (vehicle years)								
None.....	5.6	3.0	5.6	3.0	-	-	-	-
1 or Fewer.....	3.0	1.5	-	-	3.0	1.5	2.0	2.3
2.....	3.1	1.6	-	-	3.1	1.6	1.8	1.6
3 or More.....	4.6	2.3	-	-	4.6	2.3	2.5	2.6
Not Applicable (Household did not own a vehicle as of July 1, 1983).....	13.1	6.7	13.1	8.6	-	-	-	-
Number of Drivers (Fall 1982)								
1.....	2.5	2.0	8.5	5.8	2.8	2.2	2.3	3.0
2.....	2.1	1.3	20.1	12.9	2.1	1.3	1.8	1.4
3 or More.....	4.5	2.3	0	0	4.5	2.3	2.5	2.8
None/No Answer.....	9.1	4.4	9.1	4.2	26.6	11.8	12.3	14.7
Origin of Householder								
White.....	1.2	1.6	6.0	3.1	1.4	1.5	1.7	1.7
Black.....	8.4	5.5	12.8	5.4	8.9	5.0	3.6	7.5
Other.....	12.9	7.5	22.6	20.2	15.2	6.2	7.6	7.6
Hispanic Descent								
Yes.....	11.5	3.4	17.1	9.1	12.1	3.1	5.0	4.5
No.....	.6	1.8	5.6	3.3	1.0	1.7	1.7	2.0
Age of Householder								
24 Years and Under.....	7.0	3.7	15.8	7.0	8.3	2.8	3.2	5.1
25 to 34 Years.....	3.1	1.7	10.2	6.4	3.2	1.7	2.1	2.3
35 to 44 Years.....	3.7	2.6	19.2	8.9	3.9	2.4	2.2	3.5
45 to 59 Years.....	3.6	2.8	15.5	14.6	3.6	2.8	2.5	3.6
60 Years and Over.....	4.1	2.1	8.8	3.4	4.5	2.2	2.4	2.7

SEE FOOTNOTES AT END OF TABLE



Appendix B (Continued)

Table B7. (Continued)

Household Characteristics	Total Households		Households Without Vehicles		Households With Vehicles			
	Total Households (millions)	Total Energy Expenditures (dollars)	Total Households (millions)	Expenditures for Energy Used in the Home (dollars)	Total Households (millions)	Total Energy Expenditures (dollars)	Expenditures for Energy Used in the Home (dollars)	Transportation Energy Expenditures (dollars)
Household Size								
1 Person.....	4.7	2.5	7.1	3.0	5.8	3.0	3.0	4.5
2 Persons.....	2.5	1.4	7.3	4.4	3.1	1.5	2.0	1.9
3 Persons.....	5.3	2.1	16.4	9.9	5.7	1.8	2.6	2.0
4 Persons.....	4.0	2.3	18.2	8.5	3.8	2.3	2.4	3.3
5 or More Persons.....	4.6	3.0	18.1	10.8	5.3	2.8	2.6	4.0
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)								
--Long-term Average								
<2,000 CDD and >7,000 HDD.....	19.0	2.1	40.9	7.7	18.3	3.1	3.9	3.5
<2,000 CDD and 5,500 to 7,000 HDD.....	7.6	2.4	11.7	7.9	8.4	2.1	2.0	3.0
<2,000 CDD and 4,000 to 5,499 HDD.....	8.3	3.3	9.3	4.2	9.4	2.9	3.9	2.9
<2,000 CDD and <4,000 HDD.....	8.5	2.7	18.3	6.4	8.2	2.5	3.0	3.0
>2,000 CDD and <4,000 HDD.....	7.3	6.0	14.0	7.7	7.3	5.9	5.0	7.6
Heating Degree-Days (HDD) April 1982 Through March 1983								
> 5,499 HDD.....	6.4	1.8	12.7	6.1	6.7	1.9	2.1	2.3
4,000 to 5,499 HDD.....	9.1	3.2	9.1	4.4	10.3	2.8	3.7	2.9
< 4,000 HDD.....	5.4	3.1	11.4	4.8	5.6	3.0	2.8	3.6
Measured Heated Square Footage of Residence								
Less than 600 Square Feet.....	7.6	4.8	12.0	7.2	8.0	4.4	3.9	6.8
600 to 999 Square Feet.....	3.6	2.7	7.0	2.7	4.1	2.7	2.7	3.4
1,000 to 1,599 Square Feet.....	2.8	2.3	7.9	8.1	2.9	2.3	2.0	2.8
1,600 to 1,999 Square Feet.....	4.5	2.6	20.3	6.2	4.8	2.2	2.0	3.8
2,000 to 2,399 Square Feet.....	5.7	2.3	21.1	10.1	6.1	2.2	2.7	3.3
2,400 to 2,999 Square Feet.....	6.9	3.5	Q	Q	7.6	3.0	3.4	4.4
3,000 or More Square Feet.....	9.0	2.7	Q	Q	8.9	2.6	3.7	3.5
Energy Used in The Home-- April 1982 through March 1983 (million Btu per household)								
50 or Less.....	6.0	3.3	12.8	5.1	6.1	2.7	2.6	3.5
51 to 75.....	4.0	2.9	11.8	4.8	4.4	2.9	2.0	4.1
76 to 100.....	5.2	2.4	14.5	3.8	5.2	2.0	1.9	3.2
101 to 125.....	4.3	2.0	9.1	3.5	5.5	1.8	1.8	2.7
126 to 150.....	5.6	2.0	17.3	2.8	5.7	2.3	1.5	3.6
151 or Over.....	6.5	2.1	18.2	4.7	6.4	2.3	1.8	3.6
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)								
600 or Less.....	6.1	3.0	9.8	3.0	6.6	2.7	1.5	3.7
601 to 800.....	5.4	1.9	10.8	.8	6.5	1.9	.5	3.0
801 to 1,000.....	4.1	2.5	15.0	1.0	4.2	2.1	.3	3.6
1,001 to 1,200.....	3.7	1.8	15.8	.9	4.7	1.5	.2	2.8
1,201 to 1,600.....	5.0	1.8	10.7	.9	5.2	1.7	.3	3.3
1,601 or Over.....	6.8	1.6	14.1	4.1	7.2	1.3	1.0	2.4
Main Heating Fuel								
Natural Gas.....	3.3	1.7	7.8	4.0	3.7	1.5	1.6	2.1
Electricity.....	7.1	5.0	19.2	9.4	7.1	4.6	3.6	6.2
Fuel Oil or Kerosene.....	5.9	3.4	10.2	4.9	7.3	3.0	2.8	4.2
Wood.....	10.6	4.0	22.9	14.1	12.0	3.4	2.9	4.4
Liquefied Petroleum Gas.....	12.7	5.1	29.0	12.2	12.9	5.0	3.3	7.6
Other/None.....	31.7	8.0	Q	Q	31.5	6.7	5.2	8.4

SEE FOOTNOTES AT END OF TABLE



Appendix B (Continued)

Table B7. (Continued)

Household Characteristics	Total Households		Households Without Vehicles		Households With Vehicles			
	Total Households (millions)	Total Energy Expenditures (dollars)	Total Households (millions)	Expenditures for Energy Used in the Home (dollars)	Total Households (millions)	Total Energy Expenditures (dollars)	Expenditures for Energy Used in the Home (dollars)	Transportation Energy Expenditures (dollars)
Family Income 1983								
Less than \$ 5,000.....	6.3	4.2	7.9	5.9	9.2	4.4	4.5	7.0
\$ 5,000 - \$ 9,999.....	5.8	3.3	10.7	6.2	6.4	3.6	4.0	4.4
\$10,000 - \$14,999.....	5.4	2.4	11.2	5.8	5.7	2.3	2.3	3.5
\$15,000 - \$19,999.....	4.3	2.4	15.6	7.8	4.6	2.5	2.1	4.9
\$20,000 - \$24,999.....	5.1	2.7	18.2	10.9	5.7	2.5	2.2	3.9
\$25,000 - \$34,999.....	3.8	1.6	18.3	19.8	3.8	1.6	1.9	2.3
\$35,000 or More.....	5.0	2.6	18.0	20.5	4.9	2.5	2.7	2.9

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Appendix B (Continued)

Table B8. Household Energy Expenditures for Fuel Used in the Home and Fuel Used in Motor Vehicles per Household by Region, Relative Standard Errors (Percent)

Household Characteristics	Total Households					Households With Vehicles				
	U.S.	Northeast	North Central	South	West	U.S.	Northeast	North Central	South	West
Total	1.4	2.3	2.3	3.5	2.5	1.2	2.1	1.8	3.1	2.1
Area Type										
Metropolitan.....	1.6	2.6	3.1	3.9	2.8	1.4	2.1	2.2	3.6	2.4
Central City.....	2.5	3.9	4.2	5.3	4.1	2.0	2.6	3.8	4.9	3.5
Outside Central City.....	1.5	3.2	3.6	3.5	3.8	1.4	2.7	2.4	3.4	3.3
Nonmetropolitan.....	2.3	3.6	2.9	5.0	5.2	2.1	5.2	2.9	4.4	4.9
Average Number of Vehicles 1983 (vehicle years)										
None.....	3.2	4.0	7.8	5.5	8.5	-	-	-	-	-
1 or Fewer.....	1.3	2.2	2.5	3.3	3.2	1.3	2.2	2.5	3.3	3.2
2.....	1.6	2.3	2.0	3.2	1.7	1.6	2.3	2.0	3.2	1.7
3 or More.....	1.7	3.0	3.9	3.6	2.7	1.7	3.0	3.9	3.6	2.7
Not Applicable (Household did not own a vehicle as of July 1, 1983).....	6.5	14.2	8.4	9.6	Q	-	-	-	-	-
Number of Drivers (Fall 1982)										
1.....	1.7	3.0	2.8	4.2	4.1	1.6	2.8	3.9	3.9	4.2
2.....	1.3	3.1	1.8	3.2	1.8	1.3	3.0	1.6	3.0	1.9
3 or More.....	1.8	3.7	4.4	3.4	4.2	1.8	3.6	4.3	3.0	4.2
None/No Answer.....	4.1	5.9	9.4	4.9	15.1	12.6	Q	Q	Q	Q
Origin of Householder										
White.....	1.3	2.2	1.8	3.2	3.0	1.1	2.1	1.7	2.8	2.8
Black.....	4.9	6.7	7.0	7.8	6.7	4.6	5.9	7.3	7.6	6.0
Other.....	7.2	Q	Q	Q	10.0	5.8	Q	Q	Q	7.6
Hispanic Descent										
Yes.....	3.4	6.3	18.1	7.7	4.8	3.8	4.0	16.5	6.7	3.8
No.....	1.4	2.2	2.2	3.6	2.5	1.3	2.1	1.8	3.2	2.2
Age of Householder										
24 Years and Under.....	3.3	11.6	7.2	5.4	8.2	2.4	7.0	6.6	3.8	7.7
25 to 34 Years.....	1.7	4.6	3.2	3.2	3.8	1.7	4.4	2.8	3.1	3.8
35 to 44 Years.....	2.5	3.9	5.4	4.8	4.6	2.3	3.1	4.4	4.6	3.9
45 to 59 Years.....	2.5	4.4	4.8	4.8	4.1	2.1	5.0	4.2	4.2	3.7
60 Years and Over.....	1.8	3.5	4.7	4.0	4.7	1.8	4.0	4.4	4.3	3.9
Household Size										
1 Person.....	2.4	3.1	5.3	4.8	6.3	2.4	4.7	6.0	4.1	5.8
2 Persons.....	1.4	2.9	2.9	2.7	3.0	1.5	2.9	2.8	2.8	2.7
3 Persons.....	1.9	3.1	4.6	3.5	4.0	1.6	3.1	3.8	3.1	3.4
4 Persons.....	2.0	2.6	2.0	4.1	6.5	2.1	2.6	1.9	4.0	6.3
5 or More Persons.....	3.2	5.6	5.5	6.4	4.6	2.7	3.5	4.9	5.7	5.1
Annual Heating Degree-Days (HDD) and Cooling Degree-Days (CDD)										
--Long-Term Average										
<2,000 CDD and >7,000 HDD.....	1.9	6.7	2.7	-	3.2	2.9	6.8	4.3	-	3.0
<2,000 CDD and 5,500 to 7,000 HDD.....	2.4	3.7	3.8	-	6.1	2.0	3.4	2.8	-	6.0
<2,000 CDD and 4,000 to 5,499 HDD.....	3.1	5.0	3.6	7.7	5.0	2.6	3.7	2.9	6.1	5.0
<2,000 CDD and <4,000 HDD.....	2.4	-	-	3.3	3.4	2.4	-	-	3.0	3.0
>2,000 CDD and <4,000 HDD.....	6.1	-	-	6.7	5.0	6.0	-	-	6.6	5.7

SEE FOOTNOTES AT END OF TABLE



Appendix B (Continued)

Table B8. (Continued)

Household Characteristics	Total Households					Households With Vehicles				
	U.S.	Northeast	North Central	South	West	U.S.	Northeast	North Central	South	West
Heating Degree-Days (HDD)										
April 1982 Through March 1983										
> 5,499 HDD.....	1.8	3.0	2.6	-	3.0	1.9	3.0	2.3	-	2.8
4,000 to 5,499 HDD.....	2.8	4.8	6.3	6.9	3.9	2.4	3.5	3.8	5.4	3.6
< 4,000 HDD.....	3.8	-	-	4.3	3.1	2.9	-	-	4.1	2.8
Measured Heated Square Footage of Residence										
Less than 600 Square Feet.....	4.6	5.7	11.1	9.1	7.1	4.2	8.3	11.6	6.7	5.0
600 to 999 Square Feet.....	2.5	6.4	3.2	4.6	4.9	2.4	7.0	3.2	4.4	4.5
1,000 to 1,599 Square Feet....	1.9	4.0	2.6	3.2	4.2	1.8	3.8	3.3	3.3	3.6
1,600 to 1,999 Square Feet....	2.4	5.0	3.8	4.4	5.3	2.3	4.2	2.5	4.3	4.3
2,000 to 2,399 Square Feet....	2.2	4.4	4.3	4.2	5.5	2.1	4.7	4.5	4.1	5.5
2,400 to 2,999 Square Feet....	3.4	5.5	3.8	8.1	7.6	2.9	5.2	3.4	6.4	7.8
3,000 or More Square Feet.....	2.8	4.8	4.7	5.0	6.4	2.7	4.7	4.7	5.0	6.4
Energy Used in The Home--										
April 1982 through March 1983										
(million Btu per household)										
50 or Less.....	2.8	7.1	6.8	5.0	3.9	2.2	4.3	5.0	4.0	4.3
51 to 75.....	2.7	3.2	7.0	5.1	4.6	2.7	4.4	6.6	4.8	4.3
76 to 100.....	2.2	5.0	5.1	3.4	4.4	1.8	5.8	4.3	3.4	2.7
101 to 125.....	2.2	3.3	4.2	3.4	4.6	1.9	3.4	2.3	3.4	4.6
126 to 150.....	2.3	2.8	4.0	5.1	4.3	2.6	3.0	3.7	5.1	4.2
151 or Over.....	2.1	3.8	3.7	3.7	4.8	2.1	3.5	3.7	3.4	4.7
Expenditures for Energy Used in The Home--April 1982 through March 1983 (dollars per household)										
600 or Less.....	2.7	11.5	7.3	5.8	4.1	2.3	10.1	4.8	4.3	3.8
601 to 800.....	1.6	6.7	4.6	3.6	2.6	1.7	6.7	5.0	3.2	2.4
801 to 1,000.....	2.0	5.6	4.6	3.5	3.6	1.7	4.4	3.4	3.3	3.6
1,001 to 1,200.....	1.7	4.3	2.0	4.0	4.5	1.4	3.8	2.1	3.6	4.5
1,201 to 1,600.....	1.9	2.0	3.7	3.5	4.2	1.7	1.7	2.8	3.0	4.3
1,601 or Over.....	1.7	2.6	3.4	3.5	8.2	1.3	2.1	2.7	3.3	8.2
Main Heating Fuel										
Natural Gas.....	1.6	3.7	3.4	3.0	3.1	1.4	4.2	2.6	2.5	2.7
Electricity.....	4.9	12.0	6.5	8.1	6.3	4.5	9.9	5.4	7.8	5.4
Fuel Oil or Kerosene.....	3.4	4.8	7.8	5.9	16.0	3.1	3.9	8.7	4.8	13.5
Wood.....	3.6	7.4	7.2	7.3	7.3	2.4	6.0	7.6	3.8	8.1
Liquefied Petroleum Gas.....	4.6	Q	7.6	6.3	6.1	4.3	Q	7.6	6.7	6.1
Other/None.....	7.0	18.8	Q	20.0	13.5	5.9	10.2	Q	16.7	13.0
Family Income 1983										
Less than \$ 5,000.....	4.5	7.7	11.1	6.8	12.1	4.4	9.1	9.4	7.3	11.0
\$ 5,000 - \$ 9,999.....	2.5	4.6	4.8	6.8	8.2	2.8	4.5	6.0	6.8	8.6
\$10,000 - \$14,999.....	2.5	5.3	3.7	4.8	6.8	2.4	5.2	4.1	4.1	6.4
\$15,000 - \$19,999.....	2.6	5.3	3.8	6.0	5.7	2.4	5.3	3.3	5.9	4.8
\$20,000 - \$24,999.....	2.7	3.0	3.1	4.6	8.3	2.6	3.8	3.0	4.8	6.8
\$25,000 - \$34,999.....	1.5	2.9	3.4	3.0	3.2	1.5	3.0	3.3	3.1	3.0
\$35,000 or More.....	2.3	3.5	4.7	3.6	3.5	2.2	3.7	4.7	3.2	3.3

"-" = Data not applicable.

"Q" = Data withheld because of a large variance.

Note: Because of rounding, data may not sum to totals. Data may differ slightly from published data from the Residential Energy Consumption Survey (RECS) reports. Data in this report are for households from the transportation panel, which is a subsample of households from RECS. See Glossary for definition of terms used in this report.

Source: Energy Information Administration, Office of Energy Markets and End Use, Energy End Use Division, Household data: Form EIA-457, Residential Energy Consumption Survey, 1982, Transportation data: Forms EIA-141 and EIA-429, Residential Transportation Energy Consumption Survey, 1983.



Appendix B (Continued)

References

1. National Center for Health Statistics. "Replication: An Approach to the Analysis of Data from Complex Surveys." Vital and Health Statistics. U.S. Public Health Service Publication No. 1000--Series 2--No. 14. Washington, D.C.: U.S. Government Printing Office, April 1966.
2. National Center for Health Statistics. "Pseudoreplication: Further Evaluation and Application of the Balanced Half-Sample Technique." Vital and Health Statistics. U.S. Public Health Service Publication No. 1000--Series 2--No. 31. Washington, D.C.: U.S. Government Printing Office, January 1969.
3. Plackett, R. L., and Burman, J. P.: "The Design of Optimum Multifactorial Experiments." Biometrika 33 (1946): 305-325.





Appendix C

Background Questionnaire

RAC 4403
Form V

OMB No. 1905-0086
EIA 429

NATIONAL SURVEY OF FUEL PURCHASES FOR VEHICLES
BACKGROUND QUESTIONNAIRE -- FIRST CALL

INSTRUCTIONS FOR THIS HOUSEHOLD

- Keep record for the month of April
- Gift: Household will be sent \$5 per vehicle with Log(S).
- We will phone early in May to get information

CALL MARCH 11-14, 1983

	CALL RECORD			COMPLETE	BUSY SIGNAL	NO ANSWER	RESPONDENT NOT AVAILABLE	REFUSAL*	OTHER*	INTERVIEWER	NOTES	CALL BACK AT
	DAY OF WEEK	DATE	TIME									
1				C	B	NA	X	R	O			
2				C	B	NA	X	R	O			
3				C	B	NA	X	R	O			
4				C	B	NA	X	R	O			
5				C	B	NA	X	R	O			
6				C	B	NA	X	R	O			
7				C	B	NA	X	R	O			
8				C	B	NA	X	R	O			

*EXPLAIN

TELEPHONE
Background Questionnaire
for Households with Vehicles

ASK FIRST TO SPEAK WITH THE PERSON WHOSE NAME APPEARS ON THE LABEL. IF HE/SHE IS UNAVAILABLE, THE INTERVIEW MAY BE COMPLETED WITH HUSBAND OR WIFE.

Hello, this is _____ . I'm calling from Response Analysis in Princeton, New Jersey, about the Department of Energy survey. May I speak to _____ .

We wrote to you about keeping a record of fuel purchases for your household vehicles. Your participation is very important to the success of the research and is totally voluntary. May I check some information with you?

A1. First, I would like to check that we have your correct mailing address. Is it . . . (READ ADDRESS SHOWN ON LABEL) . . . ?

- [] YES
[] NO

A2. IF ADDRESS IS INCORRECT, NOTE CORRECT ADDRESS BELOW:

Street address: _____

City, State: _____ Zip: _____

A3. When did you move to (ADDRESS NOTED ABOVE)?

Month and year: _____

CONTINUE WITH COMPUTER-PRINTED PAGE.



Appendix C (Continued)

11
HH*

I have a description of the vehicles mentioned at the time of our most recent contact with your household --

VEHICLE #	01	02		
TYPE	AUTOMOBILE	AUTOMOBILF		
MAKE	DATSUN	CHEVPOLET		
YEAR	76	77		
MODEL	9-210	VEGA		
Do you still have (VEHICLE LISTED ABOVE)?	<input type="checkbox"/> YES <input type="checkbox"/> NO			
IF YES: Have I described it correctly?	<input type="checkbox"/> YES <input type="checkbox"/> NO			
MAKE CORRECTIONS ABOVE AS NECESSARY				
IF NO: In what month and year did you dispose of this vehicle?	MONTH: _____ YEAR: _____	MONTH: _____ YEAR: _____	MONTH: _____ YEAR: _____	MONTH: _____ YEAR: _____



Appendix C (Continued)

TV-3
Form TV

IF HOUSEHOLD STILL HAS ONE OR MORE VEHICLES LISTED ON COMPUTER-PRINTED PAGE, ASK:

- B1. Do you or other members of your household own or have the regular use of any cars, trucks, vans, or similar vehicles, in addition to (MAKE AND MODEL YEAR FROM COMPUTER PAGE)?
- 1 YES
0 NO -- SKIP TO Q. B19
- B2. How many additional vehicles do you have?
- 1 ONE
2 TWO
3 THREE
4 FOUR OR MORE
- } SKIP TO Q. B5

IF HOUSEHOLD NO LONGER HAS ANY VEHICLES LISTED ON COMPUTER-PRINTED PAGE, ASK:

- B3. Do you or other members of your household now own or have the regular use of any cars, trucks, vans, or similar vehicles?
- 1 YES
0 NO -- SKIP TO Q. B19
- B4. How many vehicles do you have?
- 1 ONE
2 TWO
3 THREE
4 FOUR OR MORE
- } ASK Q. B5



Appendix C (Continued)

T-4

IF "ONE OR MORE VEHICLES" ON Q. B2 OR B4 ASK:

		A	B	C	D
B5.	What type(s) of vehicle(s) is it (are they)?				
	STATION WAGON	01 []	01 []	01 []	01 []
	AUTOMOBILE	02 []	02 []	02 []	02 []
	JEEP OR SIMILAR VEHICLE	03 []	03 []	03 []	03 []
	PASSENGER VAN OR MINIBUS	04 []	04 []	04 []	04 []
	CARGO VAN	05 []	05 []	05 []	05 []
	PICKUP TRUCK	06 []	06 []	06 []	06 []
	OTHER TRUCK	07 []	07 []	07 []	07 []
	MOTOR HOME	08 []	08 []	08 []	08 []
	OTHER (SPECIFY):	21 []	21 []	21 []	21 []
IF "PICKUP TRUCK" OR "OTHER TRUCK," ASK:					
B6.	About how many tons capacity does the truck have, -- quarter-ton, half-ton, three-quarter ton, or more?	[] 1/4	[] 1/4	[] 1/4	[] 1/4
		[] 1/2	[] 1/2	[] 1/2	[] 1/2
		[] 3/4	[] 3/4	[] 3/4	[] 3/4
	TONS				
	DON'T KNOW	[]	[]	[]	[]
B7.	Please tell me the make and model year (of each vehicle). (ENTER LAST TWO DIGITS OF MODEL YEAR.)	MAKE 19 _____	MAKE 19 _____	MAKE 19 _____	MAKE 19 _____
B8.	What is the model name (of each one)?	MODEL NAME _____	MODEL NAME _____	MODEL NAME _____	MODEL NAME _____
B9.	In what month and year did you get this vehicle?*	MONTH YEAR 19 _____	MONTH YEAR 19 _____	MONTH YEAR 19 _____	MONTH YEAR 19 _____
B10.	How many miles has it been driven since you have had it (just approximately)?	MILES DON'T KNOW []			

*INTERVIEWER: NOTE BELOW ANY UNUSUAL SITUATIONS.



Appendix C (Continued)

T-5

IF "ONE OR MORE VEHICLES" ON Q. B2 OR B4 CONTINUE:

		A	B	C	D
B11.	How many cylinders does the engine have, or is it a rotary engine?				
	1-CYLINDER	01 []	01 []	01 []	01 []
	2-CYLINDER	02 []	02 []	02 []	02 []
	3-CYLINDER	03 []	03 []	03 []	03 []
	4-CYLINDER	04 []	04 []	04 []	04 []
	5-CYLINDER	05 []	05 []	05 []	05 []
	6-CYLINDER	06 []	06 []	06 []	06 []
	8-CYLINDER	08 []	08 []	08 []	08 []
	ROTARY	09 []	09 []	09 []	09 []
	ELECTRIC	10 []	10 []	10 []	10 []
	OTHER (SPECIFY):	21 []	21 []	21 []	21 []
	DON'T KNOW	98 []	98 []	98 []	98 []
B12.	Does the vehicle have air conditioning?				
	YES	1 []	1 []	1 []	1 []
	NO	0 []	0 []	0 []	0 []
B13.	Does it have an automatic transmission or a manual shift?				
	AUTOMATIC	1 []	1 []	1 []	1 []
	MANUAL SHIFT	2 []	2 []	2 []	2 []
	IF AUTOMOBILE OR STATION WAGON, ASK:				
B14.	Is it a 2-door or 4-door or what?				
	2-DOOR	2 []	2 []	2 []	2 []
	3-DOOR	3 []	3 []	3 []	3 []
	4-DOOR	4 []	4 []	4 []	4 []
	5-DOOR	5 []	5 []	5 []	5 []
B15.	Is this vehicle used on the job by anyone in your household, not counting going to and from work?				
	YES	1 []	1 []	1 []	1 []
	NO	0 []	0 []	0 []	0 []
	IF "YES", ASK:				
B16.	Is it also used for non-business (personal) purposes?				
	YES	1 []	1 []	1 []	1 []
	NO	0 []	0 []	0 []	0 []
B17.	About how many people drive this vehicle on a regular basis?				
	NUMBER OF REGULAR DRIVERS	_____	_____	_____	_____
B18.	About how many miles per gallon do you usually get with this vehicle? (IF RESPONDENT GIVES MPG FOR BOTH IN-TOWN AND HIGHWAY DRIVING, WRITE DOWN IN-TOWN MPG ONLY.)				
	MPG	_____	_____	_____	_____



Appendix C (Continued)

T-7

B23. Does anyone who was a member of your household on November 1, 1982 live somewhere else now?

0 [] NO -- SKIP TO Q. B26

1 [] YES

IF "YES," ASK:

B24. Who is that? DESCRIBE PERSON OR PERSONS BELOW

	RELATIONSHIP	SEX		AGE
		FEMALE	MALE	
A				
B				
C				
D				
E				

B25. FOR EACH PERSON MENTIONED WHO IS AGE 16 OR OVER, ASK:

We may need to be in touch with (him/her/each of them) about this survey, also. Could you tell me where I can reach (him/her/them)?

PERSON _____ NAME: _____
STREET: _____
CITY AND STATE: _____ ZIP: _____
PHONE: _____ (Area code)
PERSON _____ NAME: _____
STREET: _____
CITY AND STATE: _____ ZIP: _____
PHONE: _____ (Area code)



Appendix C (Continued)

T-8

IF HOUSEHOLD NOW HAS ONE OR MORE VEHICLES, SAY:

B26. Thank you. We will be mailing the Fuel Purchase Log(s) to you before the end of the month, and we'll be calling you again to explain the procedure to you. Generally, when is a good time to reach you? (MARK AS MANY AS APPLY)

- EVENING
- DAYTIME
- WEEKEND
- OTHER (SPECIFY) _____

Have a nice (evening/day)

IF HOUSEHOLD DOES NOT NOW HAVE A VEHICLE, SAY:

B27. Thank you. We will be sending a card to you and asking you to mail it to us if you acquire a vehicle for use by your household. We appreciate your help.

Have a nice (evening/day)

Interviewer:	Date Completed:	Time Completed:
_____	_____	_____



Appendix C (Continued)

Vehicle Fuel Purchase Log

This voluntary survey is authorized by Public Law No. 93-375. All information will be used only in statistical summaries and will be held confidential in accordance with the provisions of the Privacy Act.



**Energy Information Administration
U.S. Department of Energy**

NATIONAL SURVEY OF FUEL PURCHASES FOR VEHICLES

APRIL 1983

Conducted by Response Analysis Corporation • P.O. Box 168 • Princeton, New Jersey 08540



Appendix C (Continued)

Vehicle Fuel Purchase Log

EA-141
OMB No. 1825-0068 (E-cores 10-31-85)

Please fill out this box before first use of vehicle in April

A. What is the total mileage (odometer reading) for this vehicle? _____ Miles

B. After starting the engine, draw a line showing how full the fuel tank is before first use of the vehicle in April.



C. About how many gallons does the fuel tank of this vehicle hold? _____ Gallons

Please keep this log in your vehicle and write down every fuel purchase during the month of April.

1988
A P R I L
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30

Purchase Number	Fuel Purchase Date	Total Vehicle Mileage	Number of Gallons Purchased	Total Cost of Fuel	Price Per Gallon	Was the Tank Filled?	Complete the Line Showing How Full Tank is After Fuel Purchase	Type of Fuel Used?	Was Gas Leaded or Unleaded?	Was Gas Regular or Premium?	Please note any problems related to this purchase
1						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
2						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
3						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
4						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
5						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
6						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
7						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
8						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
9						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
10						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	



Appendix C (Continued)

Purchase Number	Fuel Purchase Date	Total Vehicle Mileage	Number of Gallons Purchased	Total Cost of Fuel	Price Per Gallon	Was the Tank Filled?	Complete the Line Showing How Full Tank is After Fuel Purchase	Type of Fuel Used?	Was Gas Leaded or Unleaded?	Was Gas Regular or Premium?	Please note any problems related to this purchase
11						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
12						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
13						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
14						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
15						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
16						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
17						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
18						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
19						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	
20						<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Gasohol	<input type="checkbox"/> Leaded <input type="checkbox"/> Unleaded <input type="checkbox"/> Does not apply	<input type="checkbox"/> Regular <input type="checkbox"/> Premium <input type="checkbox"/> Does not apply	

Please fill out this box just after last use of this vehicle in April

D. What is the total mileage (odometer reading) for this vehicle? _____ Miles

E. While the engine is running, draw a line showing about how full the tank is after last use of the vehicle in April.



F. Does this log include all fuel purchases made for this vehicle in the past month or is one or more purchases missing? All included One or more missing

After the last use in April 1983, please keep this log near your telephone. We will be calling to obtain the information. Or, if you will be difficult to reach by telephone, call collect to LuAnn Smith at (609) 921-3333.

Thank you very much for your help!



Appendix C (Continued)

Beginning of Year Odometer Reading Card



RESIDENTIAL ENERGY CONSUMPTION SURVEY

OMB No. 1905-0068
EIA 141

Please put this card in your vehicle and write down
the total mileage (odometer reading) after the
last use of this vehicle on FRIDAY, DECEMBER 31, 1982

MILES

After the date given above, please keep this card near your telephone. We will be calling to get the information. Or, if you will be difficult to reach by phone, call collect to LuAnn Smith at (609) 921-3333.

Please see reverse side of card for additional instructions.

THANK YOU FOR YOUR HELP!

Form vto

PLEASE READ THE OTHER SIDE OF THIS CARD FIRST

Additional instructions:

If your mileage meter (odometer) registers tenths of miles, please record the whole number of miles only.

If vehicle is not used on the day and date given on the other side of this card, please record the total mileage (odometer reading) as of that day.

If the mileage meter (odometer) does not work, just let us know that.

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Appendix C (Continued)

End of Year Odometer Reading Card



RESIDENTIAL
ENERGY
CONSUMPTION
SURVEY

EIA-429
OMB No. 1905-0086
Expires 10/31/85

Please put this card in your vehicle and write down the total mileage (odometer reading) after the last use of this vehicle on **SATURDAY, DECEMBER 31, 1983**

_____ MILES

Please answer questions in this box only if you have disposed of the vehicle described above before SATURDAY, DECEMBER 31, 1983.

Approximate date that your household disposed of this vehicle Month Year
Total mileage (odometer reading) of the vehicle on date of disposition _____ MILES

Don't know

After you have filled in the information requested, please keep this card near your telephone. We will be calling to get the information. Or, if you will be difficult to reach by phone, call collect to LuAnn Smith at (609) 921-3333.

Please see the other side of card for additional instructions.

THANK YOU FOR YOUR HELP!

Form T

PLEASE READ THE OTHER SIDE OF THIS CARD FIRST

Additional instructions:

If your mileage meter (odometer) registers tenths of miles, please record the whole number of miles only.

If vehicle is not used on the day and date given on the other side of this card, please record the total mileage (odometer reading) as of that day.

If the mileage meter (odometer) does not work, just let us know that.

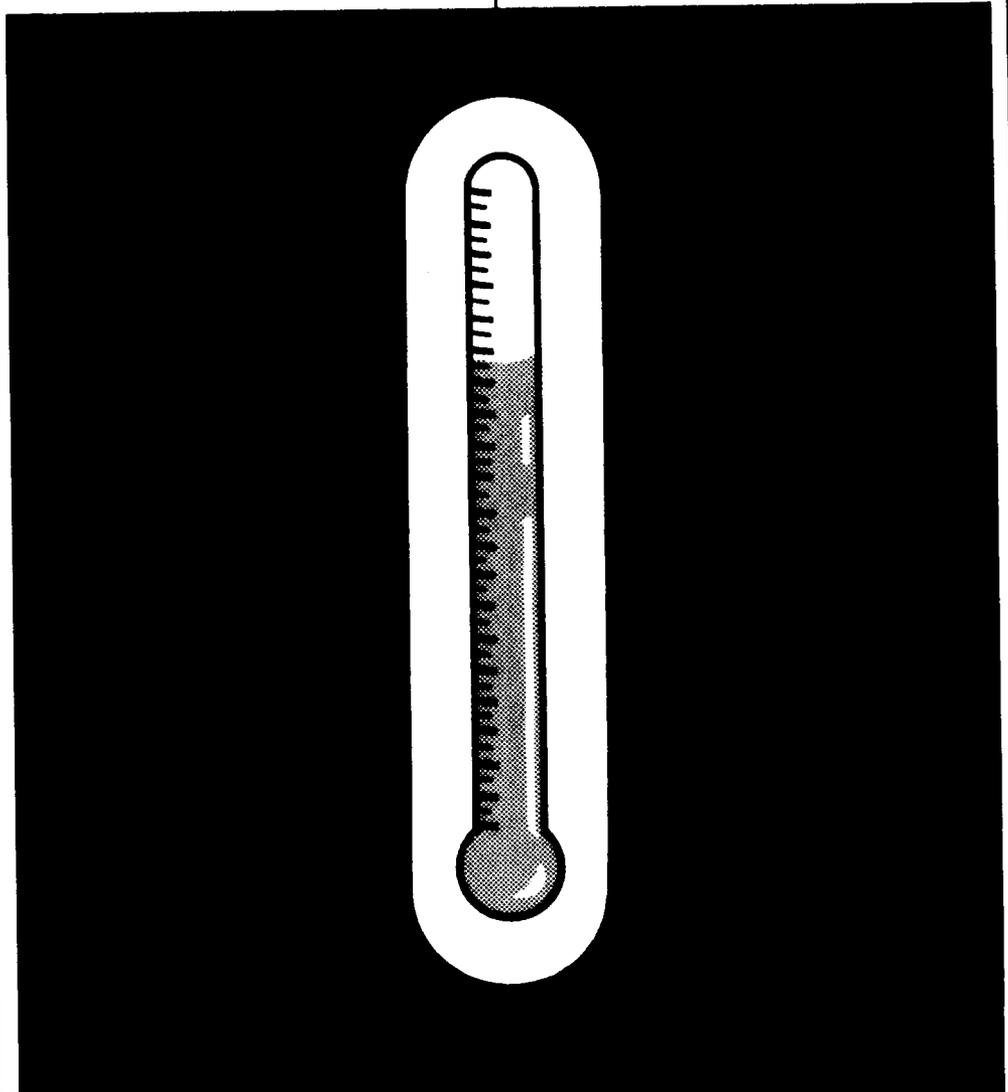
If your household has disposed of the vehicle, please give us your best estimate of the date and total mileage (odometer reading) of the vehicle at that time.

If you, or other members of your household, now own or have the regular use of any replacement or additional vehicles (not described on a yellow card) please complete the green card.

This survey is being conducted by Response Analysis Corporation, P.O. Box 158, Princeton, New Jersey 08540 under contract to the U.S. Department of Energy.

Appendix D

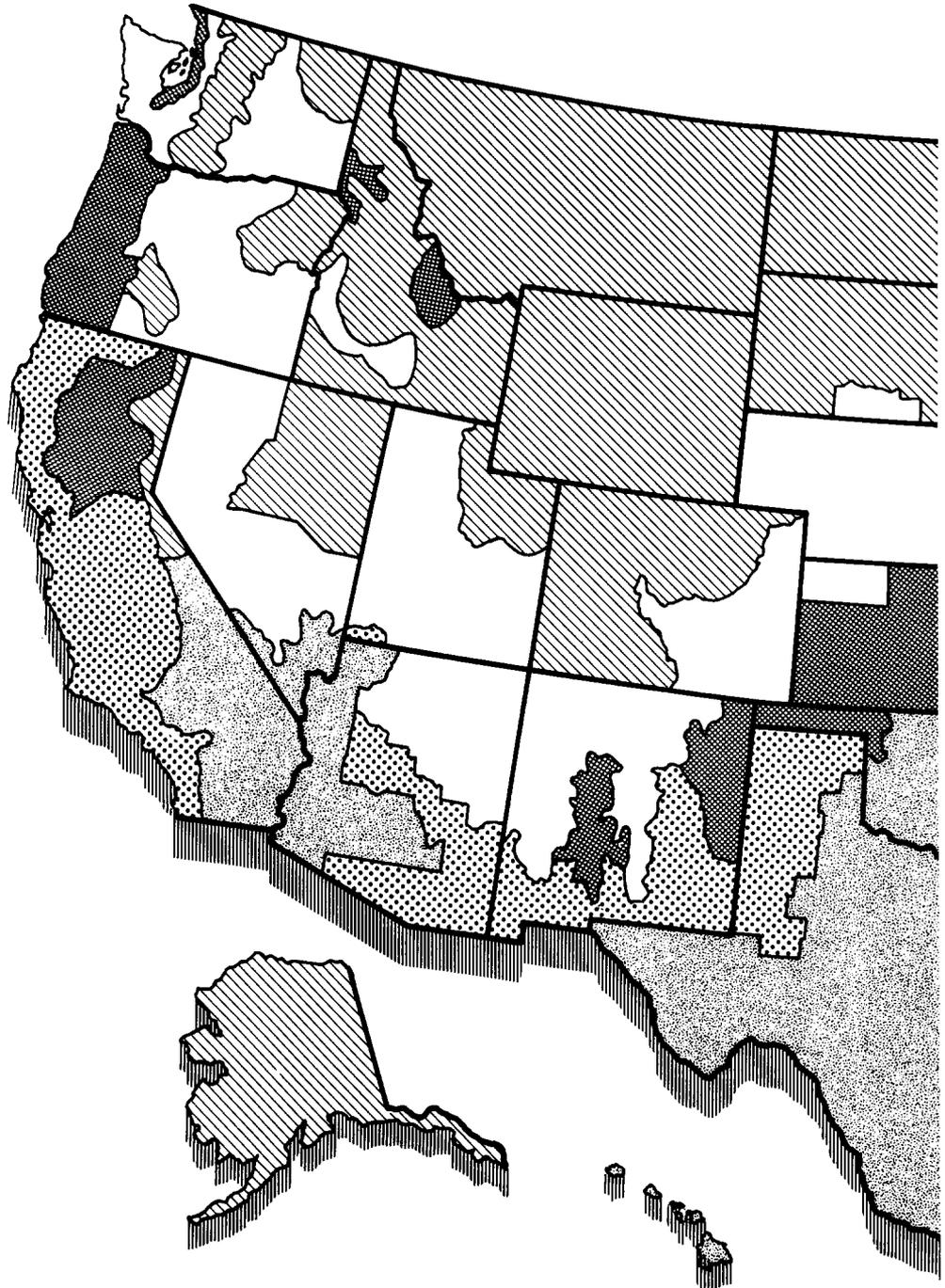
U.S. Weather Zone Map

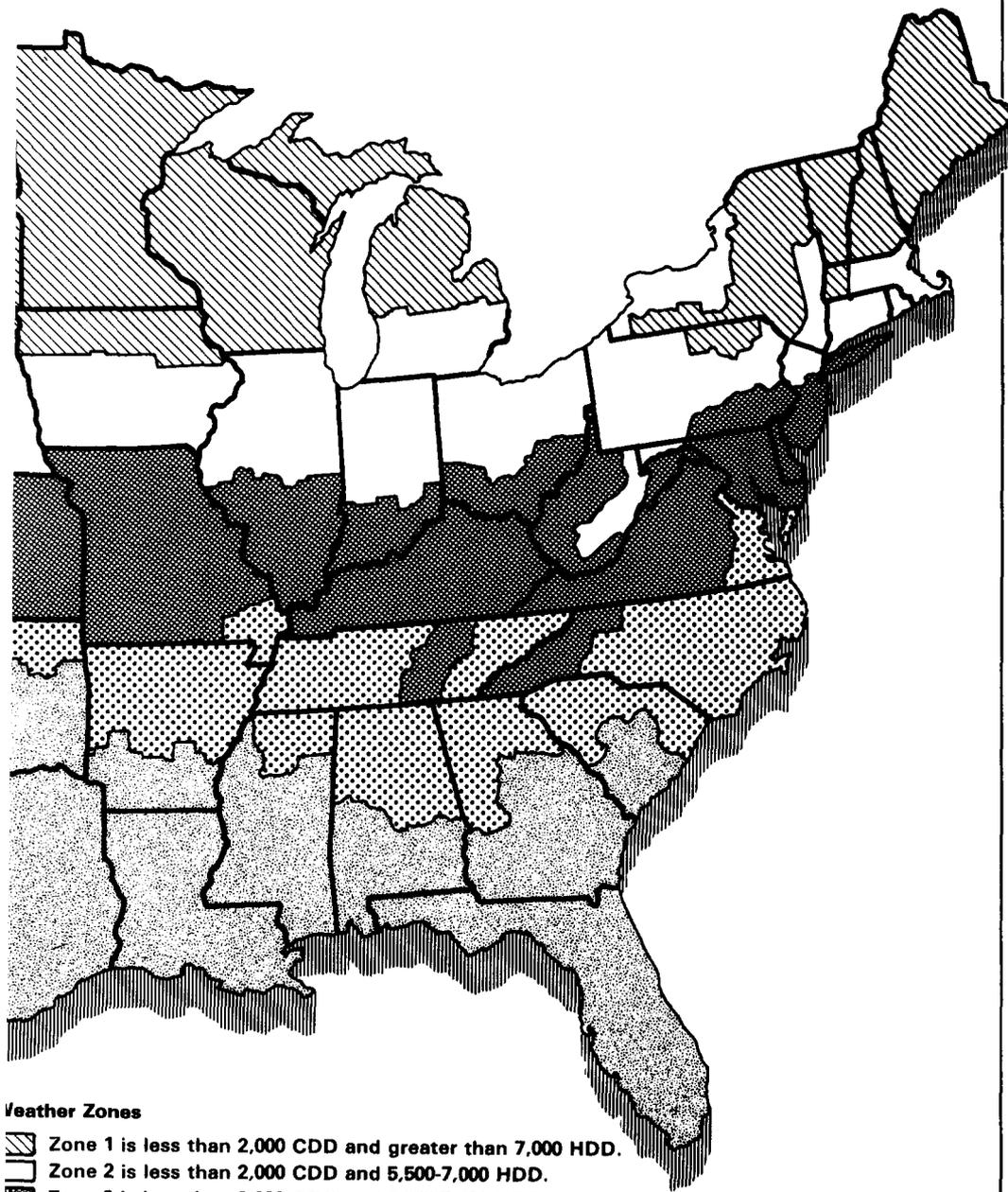




Appendix D

Weather Zone Map of Heating Degree- Days (HDD) and Cooling Degree-Days (CDD)





Weather Zones

-  Zone 1 is less than 2,000 CDD and greater than 7,000 HDD.
-  Zone 2 is less than 2,000 CDD and 5,500-7,000 HDD.
-  Zone 3 is less than 2,000 CDD and 4,000-5,499 HDD.
-  Zone 4 is less than 2,000 CDD and less than 4,000 HDD.
-  Zone 5 is greater than 2,000 CDD and less than 4,000 HDD.

Appendix E

U.S. Census Regions and Divisions

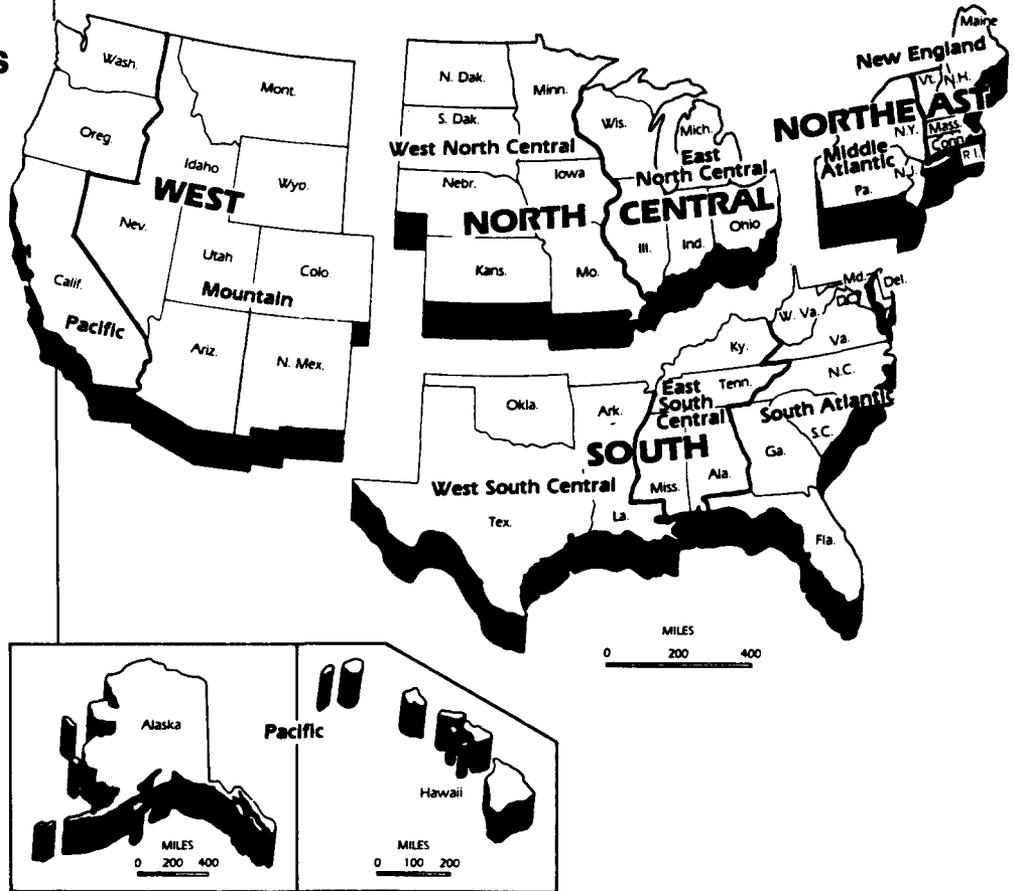




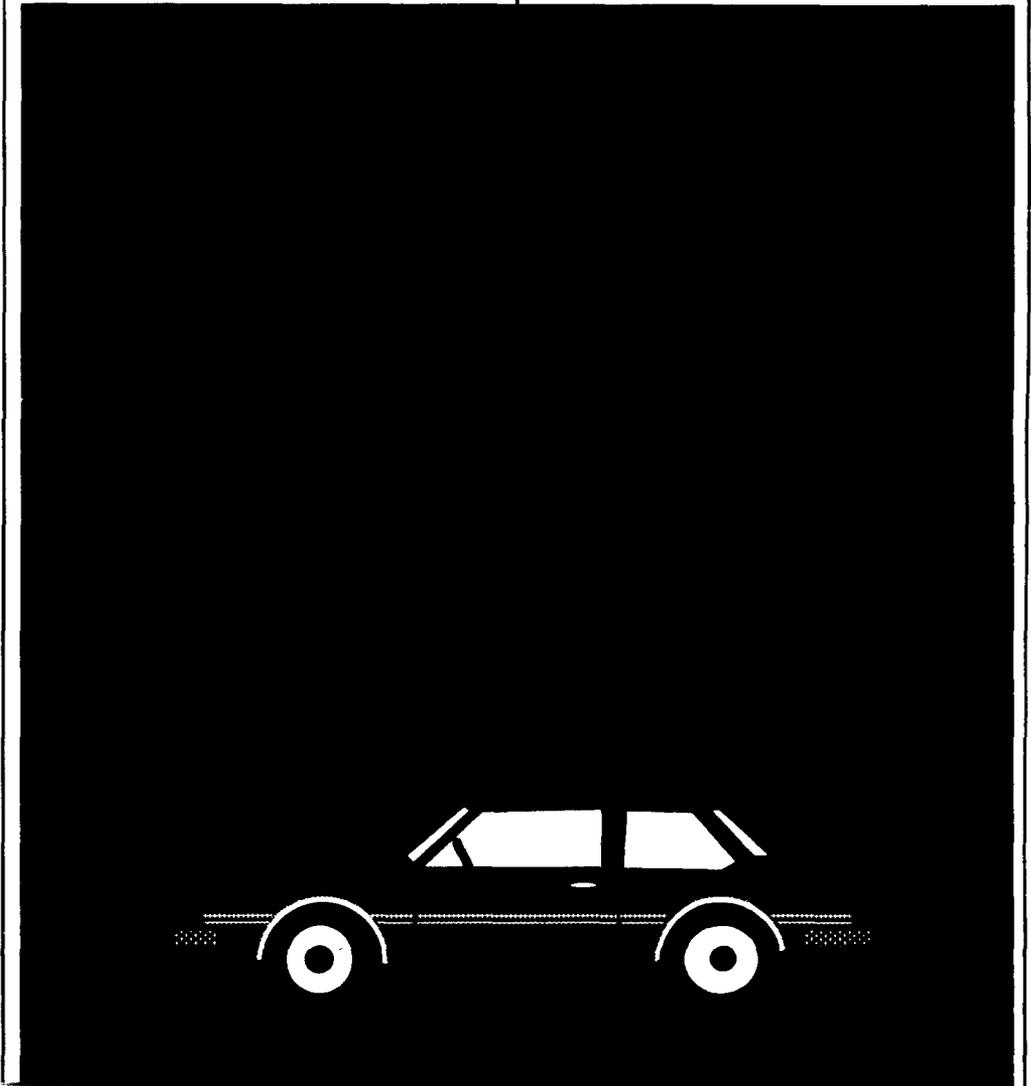


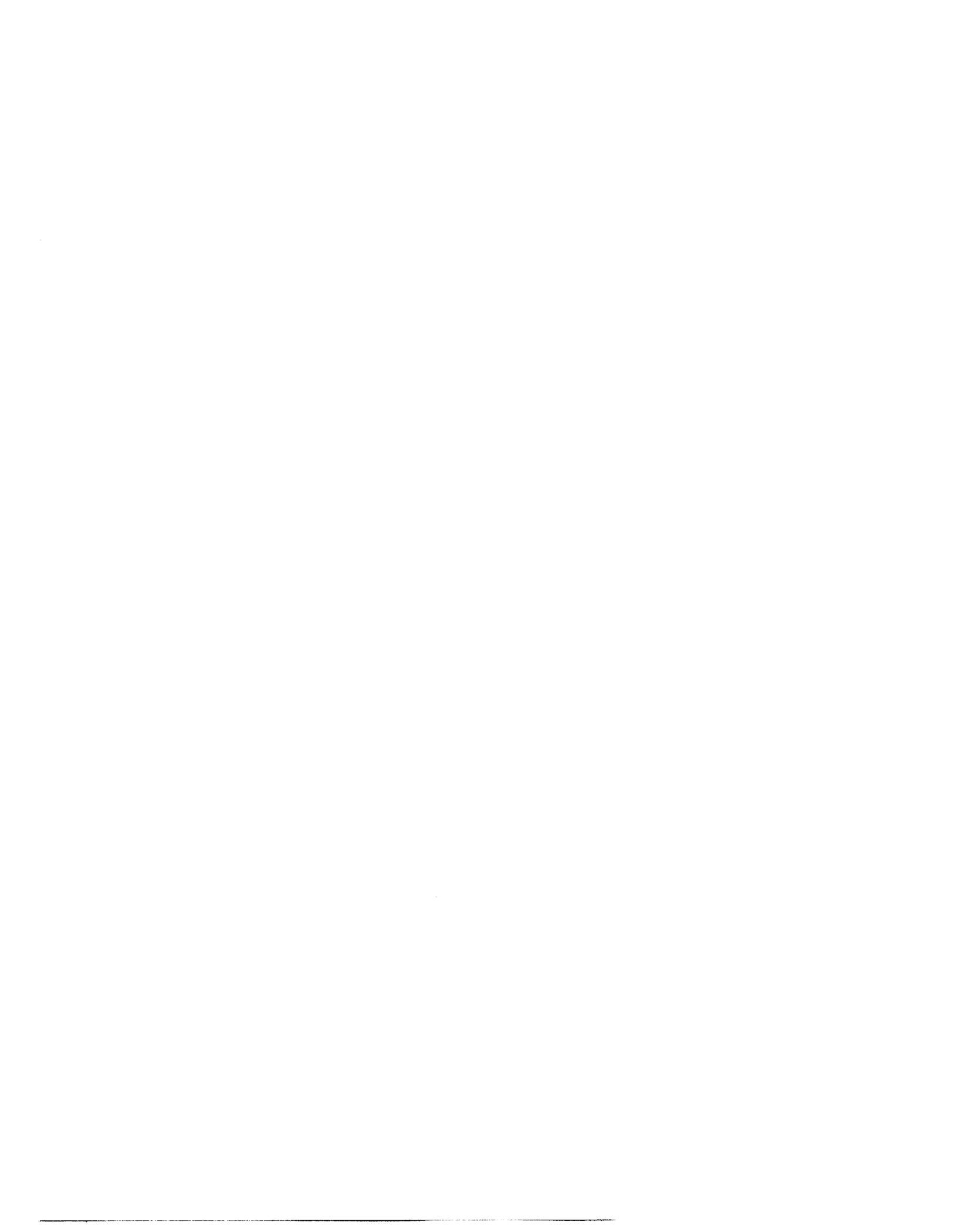
Appendix E

U.S. Census Regions and Divisions



Glossary







Glossary

Automobile: Automobiles include station wagons and all "Vehicles" excluding passenger vans, cargo vans, motor homes, pickup trucks, and jeeps or similar vehicles.

Average Number of Vehicles 1983: Refers to the average number of vehicles a household owned during 1983. The average is computed based upon the number of days the household owned each vehicle. An average of one vehicle may represent two vehicles each owned for half of the year. An average of one vehicle also represents a range of values, greater than zero and less than 1.5 vehicles. Similarly, two vehicles represent the range 1.5 to less than 2.5 vehicles.

Btu Conversion Factors: Conversion factors used in this report are:

Motor Gasoline	5.253 million Btu per barrel
Distillate Fuel	5.825 million Btu per barrel
Propane	3.836 million Btu per barrel
Gasohol	5.081 million Btu per barrel

1 barrel = 42 gallons

gasohol = 90 percent motor gasoline and 10 percent ethanol

Drivers: Refers to household members who could drive a car at the time of the household interview.

Energy Used in the Home: Is the amount of electricity or natural gas used by the household during the 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 household energy consumption for energy used in the home is April 1982 through March 1983.

Expenditures: Refers to the cost, including taxes, of the gasoline or diesel fuel added to the vehicle's tank. Expenditures do not include the cost of oil or other items that may have been purchased at the same time as the fuel.

Expenditures for Energy Used in the Home: For electricity and natural gas, expenditures refer to the cost of electricity or natural gas consumed during the 365-day period. Expenditures include State and local taxes, but exclude merchandise, repairs, or special service charges. For households on a budget plan, the expenditures are for the actual consumption. Fuel oil, kerosene, and LPG expenditures are for the amount of fuel purchased, which may differ from the amount of fuel consumed. For households that do not pay directly to their fuel supplier, the expenditures for fuels are estimated and included in the tables. The time period for expenditures for energy used in the home is April 1982 through March 1983.

Family Income: Is the total combined income in 1983 of all members of the family from all sources before taxes and deductions. It includes wages, salaries, tips, commissions, and income from Social Security, pensions, interest, dividends, rent, public assistance, and unemployment insurance. This includes the total income for all family members who lived in the household in 1983. 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.



Glossary (Continued)

Fuel Type: Refers to the predominant type of fuel purchased and reported during the period in which the respondent was completing a fuel purchase log.

Gallons Consumed: Refers to the number of gallons of fuel used, estimated for the year based upon miles-per-gallon data derived from a one month fuel purchase log and odometer readings for the beginning of the year and the end of the year.

Heating Degree-Days: The number of degrees per day the daily average temperature is below 65 degrees Fahrenheit. Normally, heating is not required in a building when the outdoor average daily temperature is above 65 degrees. Heating degree-days are determined by subtracting the average daily temperature below 65 degrees from the base 65. For example, a day with an average temperature of 50 degrees has 15 heating degree-days ($65 - 50 = 15$), while one with an average temperature of 65 or higher has none. The average daily temperature is the mean of the maximum and minimum temperature for a 24-hour period.

The heating degree-days for RECS households in the 48 States and the District of Columbia were assigned according to the NOAA division in which each household is located (See NOAA Division). Heating degree-days for Alaskan and Hawaiian households were assigned by appropriate nearby weather stations.

Hot-Deck Imputation: An imputation procedure used for item nonresponse in which the household file is sorted by variables related to the missing item or items. A household is then selected that has the same value on those variables, and this "donor" household supplies the value for the missing item or items. (See Imputation).

Household: Is 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 who are normally members of the household but who were away from home as college students or members of the armed forces at the time of the contact. The household does not include persons temporarily visiting with the household if they have a place of residence elsewhere, persons who take their meals with the household but usually lodge or sleep elsewhere, domestic employees or other persons employed by the household who do not sleep in the same housing unit, or persons who are former members of the household, but have since become inmates of correction or penal institutions, mental institutions, homes for the aged or needy, homes or 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 count of households is the same as the count of occupied housing units.

Householder: The person (or one of the persons) 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 generally in charge.

Housing Unit: A structure or part of a structure where a household lives. It has direct access from the outside of the building or through a common hall. Housing units do not include group quarters such as prisons or nursing homes.



Glossary (Continued)

Imputation: Is a statistical method used to estimate the response to specific questions for which answers are missing. In general, it is a procedure for filling in missing data values.

Metropolitan: A group of households located within Metropolitan Statistical Areas (MSA's) as defined in the 1980 Census. Except in New England, an MSA is a county or group of contiguous counties that contain at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. 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. "Nonmetropolitan" refers to households not located within MSA's as defined in the 1980 Census.

Miles Driven: Refers to the total number of miles driven during 1983.

Miles-per-Gallon: Refers to vehicle efficiency estimated from fuel purchase logs completed for a period of 1 month.

Most Used Vehicle: Is the "one" vehicle out of the stock of vehicles owned throughout the year which was driven the most. It is different from an average of one vehicle owned by a household. See Average Number of Vehicles Owned. The number two vehicle is the second most used vehicle.

NOAA Division: One of the 344 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.

Origin: 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, Pacific Islander. The word "race" was not used in either the questionnaire or the instructions.

Pickup Truck: Includes compact and full size pickup trucks.

Quadrillion: Equals 1,000,000,000,000,000 or 10^{15} .

Race: See Origin.

Residential: Refers to occupied housing units including mobile homes, single-family housing units (attached and detached), and apartments. The definition of housing units is the same as that used by the U.S. Bureau of the Census. (See Household for further definition.)

Residential Energy Expenditures: See Expenditures for Energy Used in the Home.

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. Crawl spaces are not included even if



Glossary (Continued)

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 by the interviewer using a metallic, retractable, 50-foot tape measure. "Heated square feet" are that portion of the measured square feet that is heated during most of the season. Rooms that are shut off during the heating season to save on fuel use 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.

Vehicles: All motorized vehicles used by U.S. households for personal transportation excluding motorcycles, mopeds, large trucks, and buses. They include automobiles, station wagons, passenger vans, cargo vans, motor homes, pickup trucks, jeeps or similar vehicles owned by members of the household. Vehicles also include company cars that are not owned by household members, but which are regularly available to household members for their personal use and ordinarily kept at home. Cars rented or leased for 1 month or more are included.

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