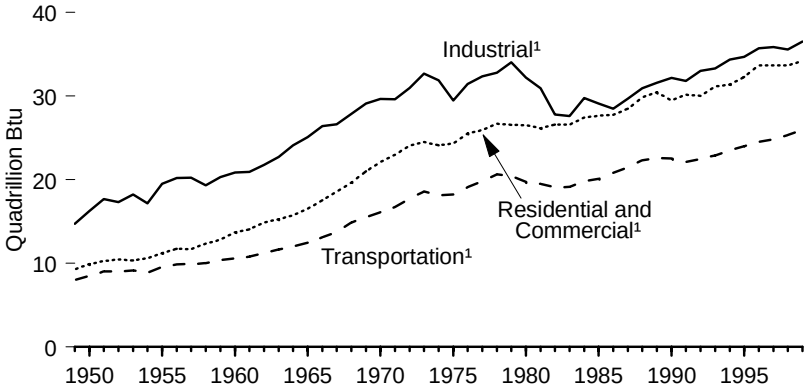
2 End-Use Energy Consumption

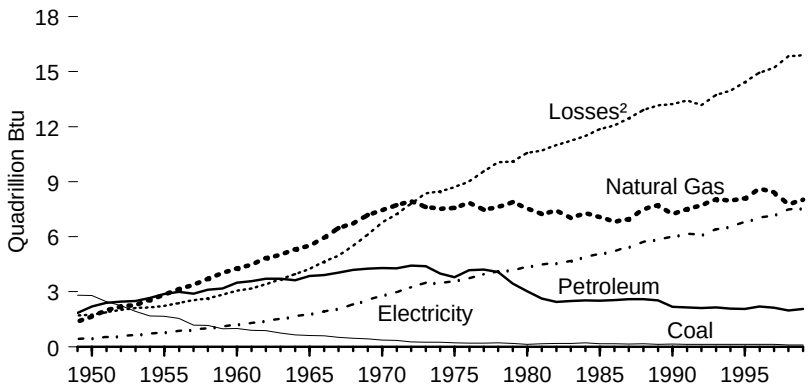
Office buildings, industries, residences, and transport systems, Baltimore, Maryland; east view from the Inner Harbor.
Source: U.S. Department of Energy.

Figure 2.1 Energy Consumption by End-Use Sector, 1949-1999

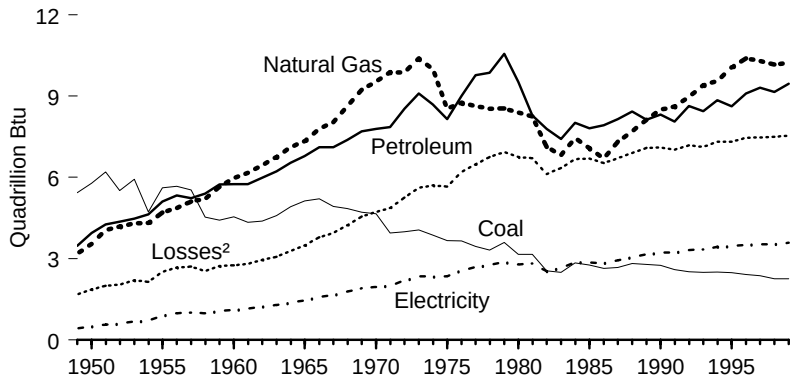
By End-Use Sector



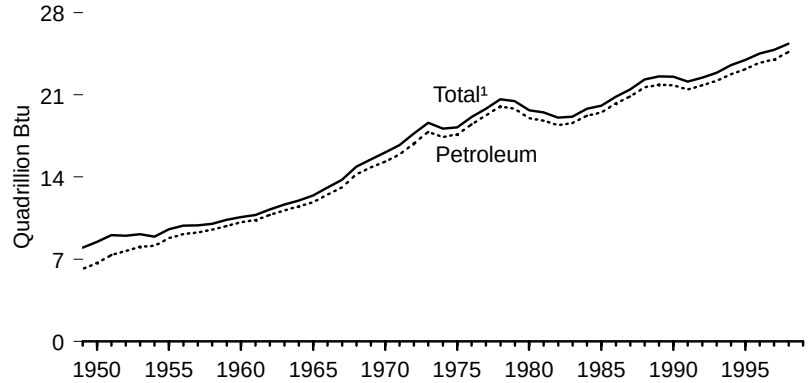
Residential and Commercial Sector



Industrial Sector



Transportation Sector



¹ There is a discontinuity in this time series between 1988 and 1989 due to the expanded coverage of renewable energy beginning in 1989.

² Electrical system energy losses associated with the generation, transmission, and distribution of energy in the form of electricity.

Note: Because vertical scales differ, graphs should not be compared.
Source: Table 2.1.

Table 2.1 Energy Consumption by End-Use Sector, 1949-1999

(Quadrillion Btu)

	Residential and Commercial						Industrial						Transportation		
Year	Coal	Natural Gas [1]	Petroleum	Electricity	Losses [2]	Total [3]	Coal	Natural Gas [1]	Petroleum	Electricity	Losses [2]	Total [3,4]	Petroleum	Total [5]	Total
1949	2.83	1.39	1.85	0.43	1.72	9.28	5.43	3.19	3.47	0.42	1.68	14.73	6.15	7.99	32.00
1950	2.80	1.64	2.20	0.47	1.76	9.90	5.78	3.55	3.95	0.50	1.86	16.24	6.69	8.49	34.63
1951	2.47	2.01	2.40	0.54	1.89	10.27	6.20	4.05	4.27	0.57	2.00	17.68	7.36	9.04	37.00
1952	2.25	2.21	2.46	0.59	2.02	10.45	5.52	4.18	4.36	0.60	2.05	17.31	7.71	9.00	36.77
1953	1.93	2.29	2.50	0.65	2.12	10.35	5.93	4.30	4.48	0.68	2.20	18.21	8.06	9.12	37.68
1954	1.68	2.57	2.67	0.72	2.15	10.60	4.73	4.32	4.63	0.71	2.14	17.16	8.12	8.90	36.66
1955	1.67	2.85	2.87	0.79	2.23	11.20	5.62	4.70	5.11	0.89	2.51	19.49	8.80	9.55	40.24
1956	1.55	3.15	3.00	0.87	2.39	11.72	5.67	4.87	5.34	0.98	2.68	20.22	9.15	9.86	41.79
1957	1.19	3.39	2.91	0.95	2.55	11.70	5.54	5.11	5.24	1.00	2.70	20.22	9.29	9.90	41.82
1958	1.16	3.71	3.12	1.01	2.64	12.35	4.53	5.21	5.41	0.98	2.54	19.32	9.51	10.00	41.67
1959	0.99	4.02	3.18	1.12	2.84	12.81	4.41	5.65	5.74	1.08	2.73	20.33	9.85	10.35	43.49
1960	0.99	4.27	3.49	1.23	3.06	13.68	4.54	5.97	5.75	1.11	2.76	20.84	10.13	10.60	45.12
1961	0.90	4.48	3.58	1.30	3.18	14.04	4.35	6.17	5.75	1.15	2.80	20.94	10.32	10.77	45.76
1962	0.88	4.85	3.72	R1.42	3.40	14.84	4.38	6.45	6.00	1.23	2.95	21.77	10.77	R11.22	47.83
1963	0.76	5.01	3.72	1.54	R3.69	15.26	4.59	6.75	6.23	1.29	3.08	22.73	11.17	R11.65	49.65
1964	0.65	5.33	3.62	1.67	3.96	15.74	4.91	7.11	6.55	1.38	3.29	24.09	11.50	12.00	51.83
1965	0.62	5.52	3.87	1.78	4.25	16.51	5.13	7.34	6.79	1.46	3.49	25.07	11.87	12.43	54.02
1966	0.61	5.95	3.91	1.94	4.65	17.52	5.21	7.80	7.11	1.58	3.79	26.40	12.50	13.10	57.02
1967	0.52	6.47	4.04	2.09	R4.97	18.54	4.93	8.04	7.12	1.65	3.95	26.61	13.11	13.75	58.91
1968	0.47	6.73	4.20	2.32	5.52	R19.66	4.85	8.63	7.39	1.78	4.24	27.88	14.21	14.86	62.41
1969	0.44	7.20	4.26	R2.56	6.12	21.01	4.71	9.23	7.70	1.91	4.56	29.12	14.81	R15.51	65.63
1970	0.37	7.46	4.31	2.79	R6.77	R22.11	4.66	9.54	7.79	1.95	4.72	29.65	15.31	R16.10	67.86
1971	0.35	7.71	4.29	2.99	R7.24	R22.97	3.94	9.89	7.86	2.01	4.87	29.61	15.92	R16.73	69.31
1972	0.27	7.94	4.43	3.25	7.80	24.07	3.99	9.88	8.53	2.19	5.25	30.97	16.89	R17.72	72.76
1973	0.25	7.63	4.39	R3.49	R8.37	24.50	4.06	10.39	9.10	2.34	5.61	32.69	17.83	R18.61	75.81
1974	0.26	7.52	4.00	3.47	8.48	24.10	3.87	10.00	8.69	2.34	5.70	31.85	17.40	18.12	74.08
1975	0.21	7.58	3.80	3.60	8.70	24.33	3.67	8.53	8.15	2.35	5.66	29.46	17.62	18.25	72.04
1976	0.20	7.87	4.18	3.75	9.02	25.51	3.66	8.76	9.01	2.57	6.20	31.46	18.51	19.10	76.07
1977	0.21	7.46	4.21	3.96	9.56	25.94	3.45	8.64	9.78	2.68	6.48	32.36	19.24	19.82	78.12
1978	0.21	7.62	4.07	R4.11	R10.06	26.72	3.31	8.54	9.87	2.76	6.75	32.79	20.04	20.61	80.12
1979	0.19	7.89	3.45	4.18	10.10	26.55	3.59	8.55	10.57	2.87	6.94	34.02	19.82	20.47	81.04
1980	0.15	7.54	3.04	4.35	10.58	26.53	3.16	8.39	9.53	2.78	6.76	32.21	19.01	19.69	R78.43
1981	0.17	7.24	2.63	4.50	10.70	26.13	3.16	8.26	8.29	2.82	6.70	30.93	18.81	R19.50	76.57
1982	0.19	7.43	2.45	4.57	11.00	26.59	2.55	7.12	7.80	2.54	6.12	27.78	18.42	19.07	73.44
1983	0.19	7.02	2.50	4.68	R11.23	R26.57	2.49	6.83	7.42	2.65	6.36	27.60	18.59	R19.14	73.32
1984	0.21	7.29	2.54	4.93	11.51	27.42	2.84	7.45	8.01	2.86	6.68	29.75	19.22	R19.81	76.97
1985	0.18	7.08	2.52	5.06	R11.86	R27.62	2.76	7.08	7.81	2.86	6.69	29.09	19.50	20.07	R76.78
1986	0.18	6.82	2.56	R5.23	12.06	R27.75	2.64	6.69	7.92	2.83	6.53	28.50	20.27	R20.82	R77.06
1987	0.16	6.95	2.59	5.44	R12.47	R28.49	2.67	7.32	8.15	2.93	6.71	29.68	20.87	R21.46	R79.63
1988	0.17	7.51	2.60	5.72	R12.91	R29.83	2.83	7.70	8.43	3.06	6.90	30.92	21.63	22.31	R83.07
1989	0.15	7.73	2.53	5.86	R13.16	R,6 30.43	2.79	8.13	8.13	3.16	7.10	R,6 31.58	21.87	R22.57	R,6 84.59
1990	0.16	7.22	2.17	R6.01	13.24	R29.48	2.76	8.50	8.32	3.23	7.10	R32.15	21.81	R22.54	R84.19
1991	0.14	7.51	2.15	6.18	R13.44	R30.14	2.60	8.62	8.06	3.23	R7.02	R31.80	21.46	R22.13	R84.06
1992	0.14	7.73	2.13	R6.09	R13.18	R30.03	2.51	8.97	8.64	3.32	R7.18	33.01	21.81	R22.47	R85.51
1993	0.14	8.04	2.14	R6.41	R13.72	R31.12	2.50	9.41	8.45	3.33	R7.13	R33.30	22.20	R22.89	87.31
1994	0.14	7.97	2.09	6.56	R13.95	R31.37	2.51	9.56	8.85	3.44	7.32	R34.35	R22.76	R23.52	R89.23
1995	0.13	8.09	2.08	6.81	14.43	32.26	2.49	10.06	8.62	3.46	7.32	R34.70	R23.20	R23.97	R90.94
1996	0.14	8.63	2.20	7.04	R14.95	R33.67	2.42	10.39	9.10	3.52	R7.47	R35.71	R23.73	R24.52	R93.91
1997	0.15	8.42	2.14	R7.17	R15.21	R33.64	2.37	R10.31	9.31	3.52	R7.47	R35.85	R23.99	R24.82	R94.32
1998	R0.11	R7.77	R1.97	R7.49	R15.83	R33.68	R2.26	R10.17	R9.15	R3.55	R7.50	R35.54	R24.64	R25.36	R94.57
1999P	0.11	8.02	2.07	7.54	15.89	34.17	2.25	10.23	9.46	3.58	7.55	36.50	25.21	25.92	96.60

[1] Includes supplemental natural gas.

[2] Electrical system energy losses. See Glossary and Diagram 5. Total losses are calculated as the sum of energy consumed at electric utilities to generate electricity, utility purchases of electricity from nonutility power producers, and imported electricity, minus exported electricity and electricity consumed by end users. Total losses are allocated to the end-use sectors in proportion to each sector's share of total electricity use.

[3] "Total" also includes renewable energy, which is not shown separately on this table. See Table 10.2 for quantities since 1989.

[4] Also includes hydroelectric power and net imports of coal coke.

[5] Also includes coal, natural gas, electricity, and electrical system energy losses.

[6] There is a discontinuity in this time series between 1988 and 1989 due to expanded coverage of renewable energy beginning in 1989. See Table 10.2 for quantities since 1989.

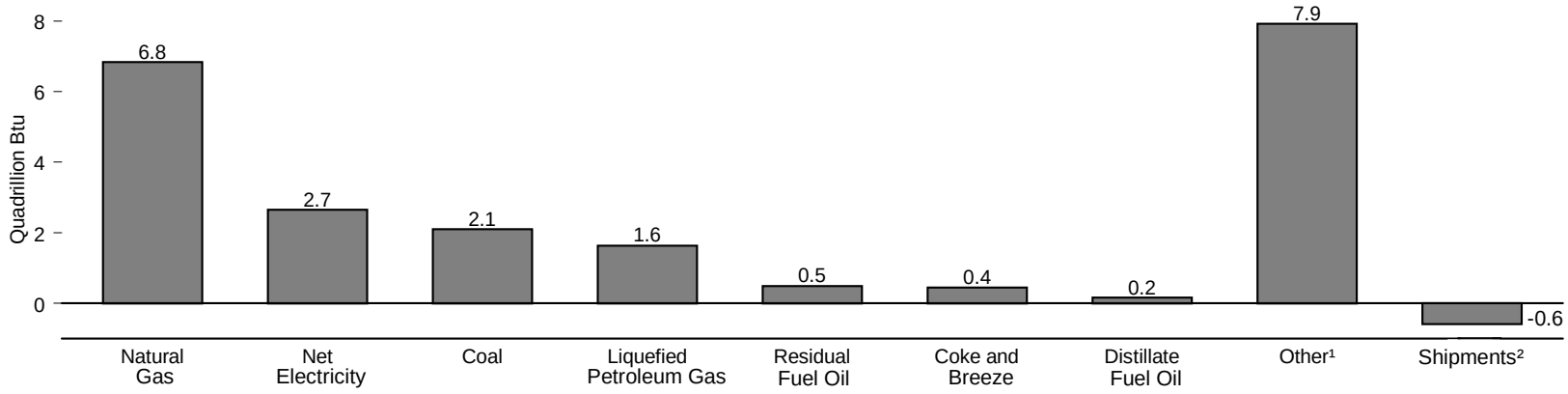
R=Revised. P=Preliminary.

Note: Totals may not equal sum of components due to independent rounding.

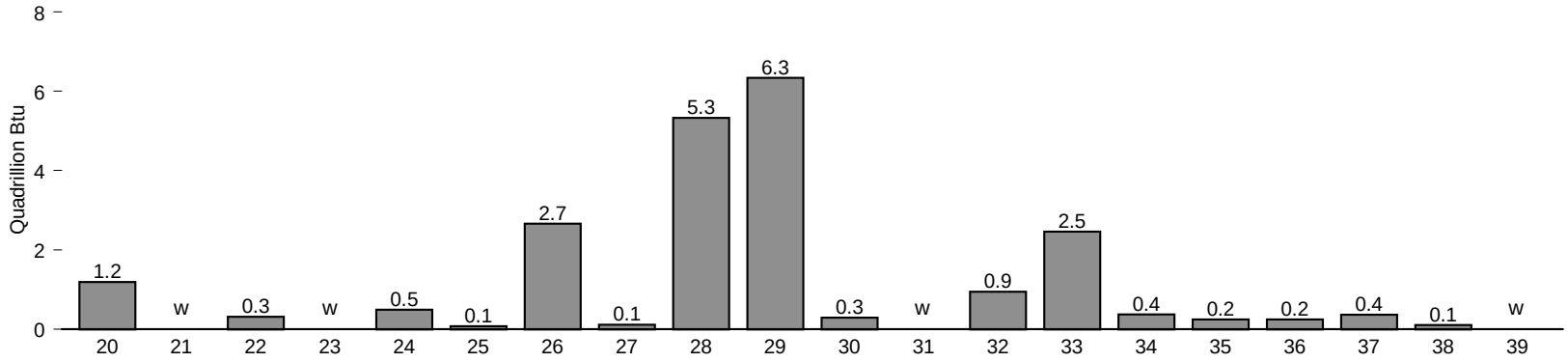
Sources: Tables 5.12a, 5.12b, 6.5, 7.3, 7.7, 8.1, 8.3, 8.9, A3-A6, and Energy Information Administration estimates for industrial hydroelectric power. "Other" from Table 8.9 is allocated to the Residential and Commercial Sector, except for approximately 5 percent used by railroads and railways and attributed to the Transportation Sector.

Figure 2.2 Manufacturing Total First Use of Energy for All Purposes, 1994

By Energy Source



By Standard Industrial Classification (SIC) Code[3]



[1] Includes all other types of energy that respondents indicated were consumed.

[2] Energy sources produced onsite from the use of other energy sources but sold to another entity.

[3] See Table 2.2 for Major Group titles of industries that correspond to the 2-digit SIC codes.

W=Withheld to avoid disclosure of data for individual establishments.

Source: Table 2.2.

Table 2.2 Manufacturing Total First Use of Energy for All Purposes, 1994

(Trillion Btu)

SIC [1] Code	Major Group	Coal	Coke and Breeze	Natural Gas	Distillate Fuel Oil	Liquefied Petroleum Gas	Residual Fuel Oil	Net Electricity [2]	Other [3]	Shipments of Energy Sources [4]	Total [5]
20	Food and Kindred Products	165	W	631	19	W	30	198	141	0	1,193
21	Tobacco Products	W	0	W	W	W	1	3	W	0	W
22	Textile Mill Products	40	0	117	7	4	17	111	14	0	310
23	Apparel and Other Textile Products	W	0	25	1	W	W	26	W	0	W
24	Lumber and Wood Products	W	0	48	25	W	2	68	341	0	491
25	Furniture and Fixtures	3	0	24	1	1	(s)	22	18	0	69
26	Paper and Allied Products	307	0	575	9	5	173	223	1,373	0	2,665
27	Printing and Publishing	0	0	48	2	W	W	59	2	0	112
28	Chemicals and Allied Products	293	11	2,569	14	1,535	110	520	442	166	5,328
29	Petroleum and Coal Products	W	W	811	22	47	71	121	5,344	87	6,339
30	Rubber and Miscellaneous Plastics Products	5	0	110	4	3	10	149	6	0	287
31	Leather and Leather Products	0	0	W	W	W	2	3	(s)	0	W
32	Stone, Clay, and Glass Products	274	8	432	23	4	7	123	73	0	944
33	Primary Metal Industries	922	424	811	13	5	43	493	85	334	2,462
34	Fabricated Metal Products	W	W	220	4	5	W	115	Q	0	367
35	Industrial Machinery and Equipment	11	W	111	4	3	W	109	5	0	246
36	Electronic and Other Electric Equipment	W	W	88	2	2	3	113	Q	0	243
37	Transportation Equipment	28	2	157	7	3	11	132	23	0	363
38	Instruments and Related Products	W	0	29	1	W	4	46	3	0	107
39	Miscellaneous Manufacturing Industries	1	0	19	1	1	1	19	W	0	W
—	Total Manufacturing	2,105	449	6,835	158	1,631	490	2,656	7,926	587	21,663

[1] Based on 1987 Standard Industrial Classification system.

[2] "Net Electricity" is obtained by summing purchases, transfers in, and generation from noncombustible renewable resources, minus quantities sold and transferred out. It excludes electricity generated from combustible fuels.

[3] Includes all other types of energy that respondents indicated were consumed.

[4] Energy sources produced onsite from the use of other energy sources but sold to another entity.

[5] The sum of net electricity, residual and distillate fuel oil, natural gas, liquefied petroleum gas, coal, coke and breeze and other, minus shipments of energy sources. Previous surveys did not subtract shipments.

(s)=Less than 0.5 trillion Btu. W=Withheld to avoid disclosure of data for individual establishments. Q=Data withheld because the relative standard error was greater than 50 percent.

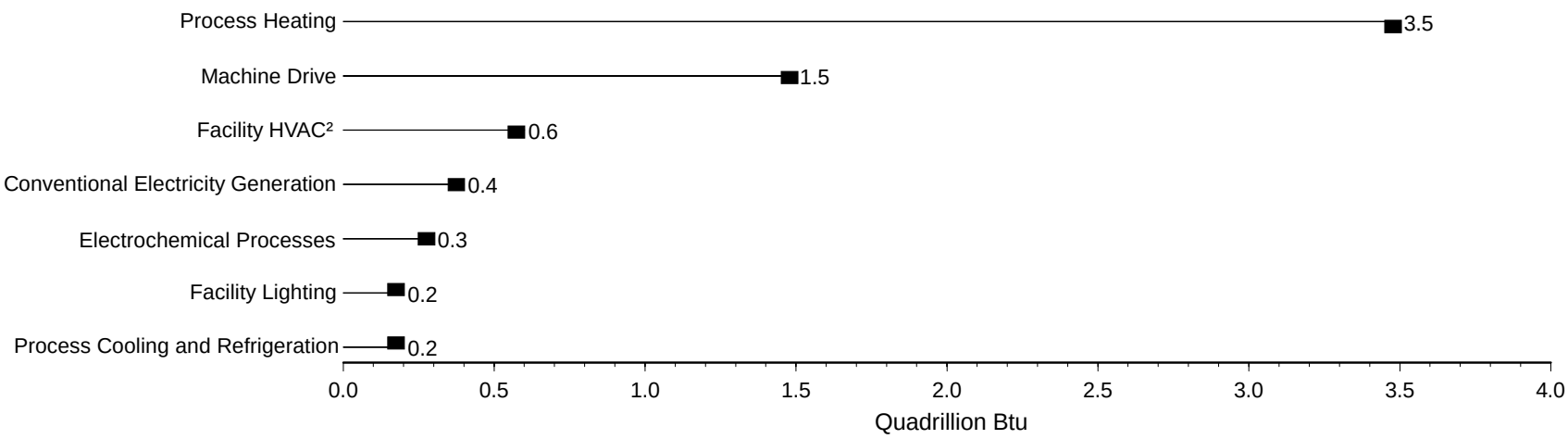
Notes: • "First Use" was "Primary Consumption" in previous releases of this table. The estimates are for the first use of energy for heat and power and as feedstocks or raw material inputs. First use is defined as the consumption of the energy that was originally produced offsite or was produced onsite from input materials not classified as energy. • See Table 12.4 for carbon dioxide emissions from energy consumption for manufacturing industries. • Totals may not equal sum of components due to independent rounding.

Web Page: http://www.eia.doe.gov/emeu/consumption.

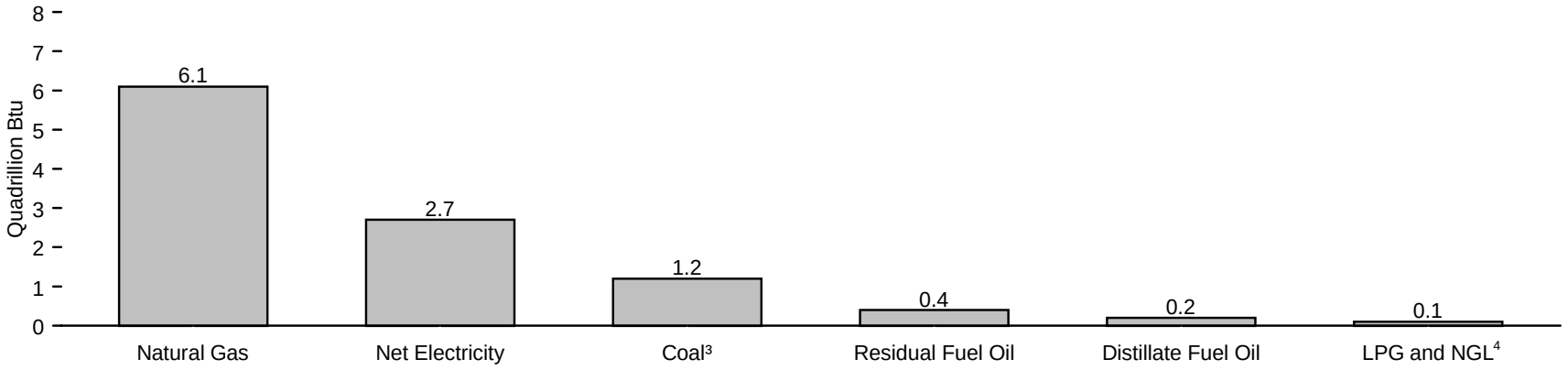
Source: Energy Information Administration, *Manufacturing Consumption of Energy 1994* (December 1997), Table A1, Part 3.

Figure 2.3 Manufacturing Sector Inputs for Heat, Power, and Electricity Generation, 1994

By Selected End Use[1]



By Energy Source



[1]Excludes inputs of unallocated energy sources (5,828 trillion Btu).
[2]Heating, ventilation, and air conditioning.
[3]Excluding coal coke and breeze.
[4] Liquefied petroleum gases and natural gas liquids.
Source: Table 2.3.

Table 2.3 Manufacturing Sector Inputs for Heat, Power, and Electricity Generation by End Use, 1994

End-Use Category	Net Electricity [1]	Residual Fuel Oil	Distillate Fuel Oil	Liquefied Petroleum Gases and Natural Gas Liquids	Natural Gas	Coal (Excluding Coal Coke and Breeze)	Total [2]
	Million Kilowatthours	Thousand Barrels			Billion Cubic Feet	Thousand Short Tons	
Indirect End Use (Boiler Fuel)	**8,250**	**49,731**	**7,296**	**3,829**	**2,326**	**39,496**	
Direct End Use							
All Process Uses	**608,190**	**16,825**	**8,795**	**14,051**	**2,788**	**13,697**	
Process Heating	83,151	16,326	4,919	12,515	2,623	13,545	
Process Cooling and Refrigeration	40,583	19	44	413	20	3	
Machine Drive	400,545	406	3,161	869	93	149	
Electrochemical Processes	79,549	—	—	—	—	—	
Other Process Uses	4,363	74	671	254	52	Q	
All Non-Process Uses	**134,020**	**2,197**	**8,394**	**6,860**	**705**	**378**	
Facility Heating, Ventilation, and Air Conditioning [3]	63,662	777	1,274	1,373	341	118	
Facility Lighting	54,332	—	—	—	—	—	
Other Facility Support	13,545	455	203	156	29	1	
Onsite Transportation	1,192	—	5,997	5,168	1	—	
Conventional Electricity Generation	—	797	604	119	325	259	
Other Non-Process Use	1,290	167	316	44	9	0	
End Use Not Reported	**27,874**	**1,359**	**1,622**	**1,209**	**143**	**571**	
Total	**778,335**	**70,111**	**26,107**	**25,949**	**5,962**	**54,143**	
	Trillion Btu						
Indirect End Use (Boiler Fuel)	**28**	**313**	**42**	**15**	**2,396**	**875**	**3,669**
Direct End Use							
All Process Uses	**2,075**	**106**	**51**	**54**	**2,872**	**302**	**5,460**
Process Heating	284	103	29	49	2,702	299	3,466
Process Cooling and Refrigeration	138	(s)	(s)	2	21	(s)	161
Machine Drive	1,367	3	18	3	95	3	1,489
Electrochemical Processes	271	—	—	—	—	—	271
Other Process Uses	15	(s)	4	1	53	(s)	73
All Non-Process Uses	**457**	**14**	**49**	**25**	**726**	**8**	**1,279**
Facility Heating, Ventilation, and Air Conditioning [3]	217	5	7	5	351	3	588
Facility Lighting	185	—	—	—	—	—	185
Other Facility Support	46	3	1	1	30	(s)	81
Onsite Transportation	4	—	35	19	1	—	59
Conventional Electricity Generation	—	5	4	1	335	6	351
Other Non-Process Use	4	1	2	(s)	9	0	16
End Use Not Reported	**96**	**9**	**9**	**4**	**148**	**13**	**279**
Total	**2,656**	**441**	**152**	**99**	**6,141**	**1,198**	**10,687**

[1] "Net Electricity" is obtained by summing purchases, transfers in, and generation from noncombustible renewable resources, minus quantities sold and transferred out.

[2] Total of listed energy sources. Excludes inputs of unallocated energy sources (5,828 trillion Btu). The top half of the "Total" column is blank because different physical units cannot be added.

[3] Excludes steam and hot water.

— = Not applicable. (s)=Less than 0.5 trillion Btu. Q=Withheld because relative standard error is greater than 50 percent.

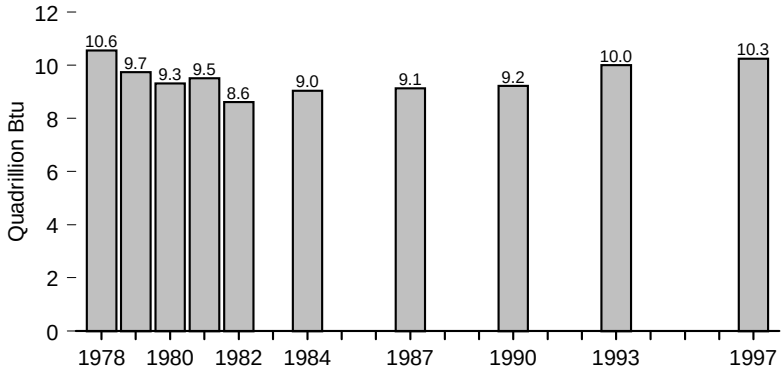
Notes: • Totals may not equal sum of components due to independent rounding. • The estimates presented in this table are for the total consumption of energy for the production of heat and power, regardless of where the energy was produced. Specifically, the estimates include the quantities of energy that were originally produced offsite and purchased by or transferred to the establishment, plus those that were produced onsite from other energy or input materials not classified as energy, or were extracted from captive (onsite) mines or wells. • Allocations to end uses are made on the basis of reasonable approximations by respondents.

Web Page: http://www.eia.doe.gov/emeu/consumption.

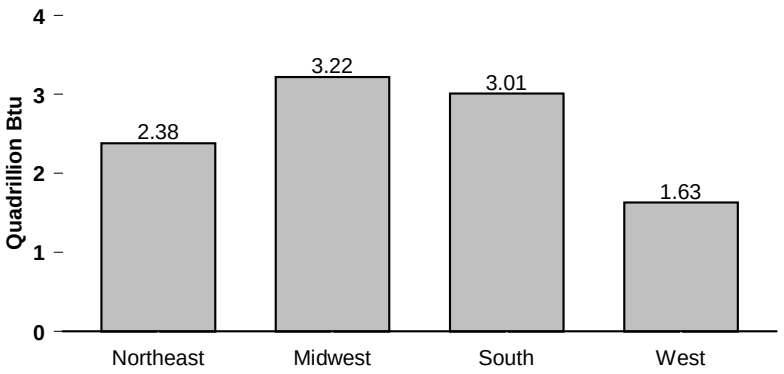
Source: Energy Information Administration, *Manufacturing Consumption of Energy 1994* (December 1997), Table A8, Parts 1 and 2.

Figure 2.4 Household Energy Consumption

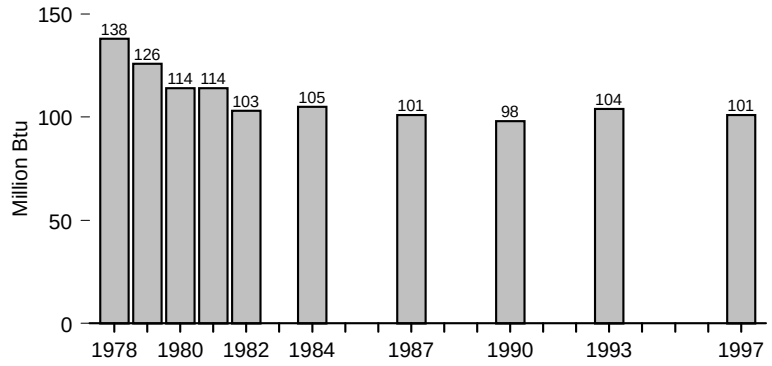
Consumption by All Households, Selected Years, 1978-1997



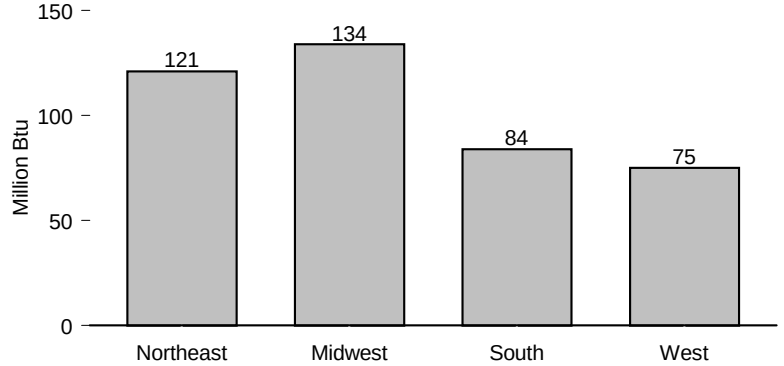
Consumption by All Households, by Census Region, 1997



Consumption per Household, Selected Years, 1978-1997



Consumption per Household, by Census Region, 1997



Notes: • No data are available for years not shown. Data for 1978 through 1984 are for April of the year shown through March of the following year; data for 1987, 1990, 1993, and 1997 are for the calendar year. • Because vertical scales differ, graphs should not be compared.

Source: Table 2.4. See Appendix D for Census regions.

Table 2.4 Household Energy Consumption by Census Region, Selected Years, 1978-1997

(Quadrillion Btu, Except as Noted)

Census Region [1]	1978	1979	1980	1981	1982	1984	1987	1990	1993	1997
Northeast	**2.89**	**2.50**	**2.43**	**2.47**	**2.18**	**2.29**	**2.37**	**2.30**	**2.38**	**2.38**
Natural Gas	1.14	1.05	0.92	1.06	0.99	0.93	1.03	1.03	1.11	1.03
Electricity [2]	0.39	0.39	0.39	0.42	0.38	0.41	0.44	0.47	0.47	0.49
Distillate Fuel Oil and Kerosene	1.32	1.03	1.09	0.96	0.79	0.93	0.87	0.78	0.78	0.84
Liquefied Petroleum Gases	0.03	0.03	0.03	0.03	0.02	0.03	0.02	0.02	0.03	0.03
Consumption per Household (million Btu)	166	145	138	138	122	125	124	120	122	121
Midwest	**3.70**	**3.48**	**2.92**	**3.12**	**2.60**	**2.80**	**2.73**	**2.81**	**3.13**	**3.22**
Natural Gas	2.53	2.48	2.02	2.24	1.76	1.99	1.83	1.88	2.07	2.20
Electricity [2]	0.60	0.59	0.60	0.57	0.57	0.55	0.61	0.66	0.74	0.75
Distillate Fuel Oil and Kerosene	0.46	0.31	0.16	0.17	0.15	0.13	0.16	0.13	0.13	0.11
Liquefied Petroleum Gases	0.12	0.10	0.15	0.13	0.11	0.13	0.13	0.13	0.19	0.17
Consumption per Household (million Btu)	180	168	139	147	122	129	123	122	134	134
South	**2.43**	**2.30**	**2.59**	**2.46**	**2.46**	**2.50**	**2.61**	**2.60**	**2.95**	**3.01**
Natural Gas	0.96	0.91	1.11	1.16	1.13	1.15	1.09	1.03	1.18	1.13
Electricity [2]	1.00	0.97	1.06	1.03	1.05	1.06	1.22	1.36	1.51	1.67
Distillate Fuel Oil and Kerosene	0.32	0.28	0.27	0.16	0.17	0.16	0.17	0.11	0.13	0.10
Liquefied Petroleum Gases	0.15	0.14	0.15	0.12	0.12	0.12	0.12	0.10	0.13	0.12
Consumption per Household (million Btu)	99	92	96	89	88	85	84	81	88	84
West	**1.54**	**1.47**	**1.38**	**1.47**	**1.38**	**1.45**	**1.42**	**1.51**	**1.55**	**1.63**
Natural Gas	0.95	0.88	0.89	0.93	0.89	0.91	0.88	0.92	0.91	0.93
Electricity [2]	0.48	0.47	0.41	0.46	0.42	0.47	0.48	0.54	0.56	0.64
Distillate Fuel Oil and Kerosene	0.09	0.09	0.04	0.03	0.03	0.04	0.02	0.02	0.03	0.03
Liquefied Petroleum Gases	0.03	0.04	0.04	0.04	0.04	0.03	0.05	0.03	0.04	0.04
Consumption per Household (million Btu)	110	100	86	90	84	85	78	78	76	75
United States	**10.56**	**9.74**	**9.32**	**9.51**	**8.62**	**9.04**	**9.13**	**9.22**	**10.01**	**10.25**
Natural Gas	5.58	5.31	4.94	5.39	4.77	4.98	4.83	4.86	5.27	5.28
Electricity [2]	2.47	2.42	2.46	2.48	2.42	2.48	2.76	3.03	3.28	3.54
Distillate Fuel Oil and Kerosene	2.19	1.71	1.55	1.33	1.14	1.26	1.22	1.04	1.07	1.07
Liquefied Petroleum Gases	0.33	0.31	0.36	0.31	0.29	0.31	0.32	0.28	0.38	0.36
Consumption per Household (million Btu)	138	126	114	114	103	105	101	98	104	101

[1] See Appendix D for Census regions.

[2] Site electricity. One kilowatthour = 3,412 Btu.

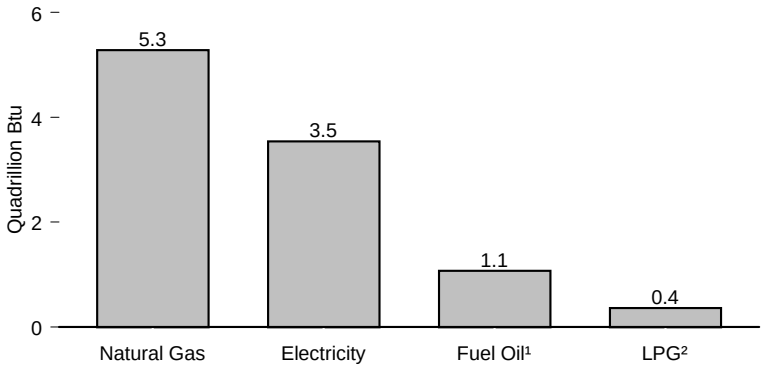
Notes: • This table shows major energy items only. • No data are available for years not shown. • Data for 1978-1984 are for April of year shown through March of following year; data for 1987, 1990, 1993, and 1997 are for the calendar year. • Totals may not equal sum of components due to independent rounding.

Web Page: http://www.eia.doe.gov/emeu/consumption.

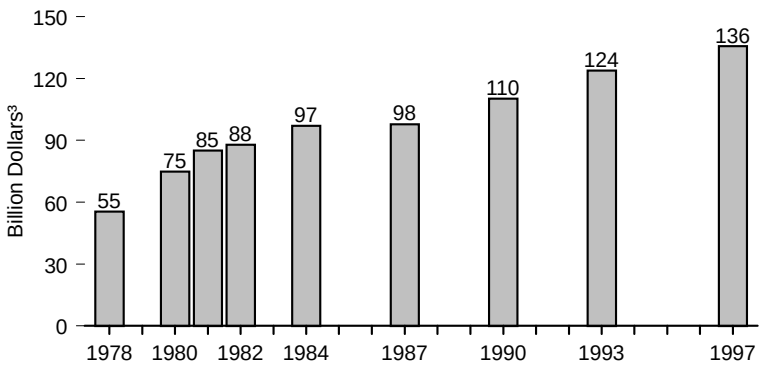
Sources: • 1978 and 1979—Energy Information Administration (EIA), Form EIA-84, "Residential Energy Consumption Survey." • 1980 forward—EIA, Form EIA-457, "Residential Energy Consumption Survey."

Figure 2.5 Household Energy Consumption and Expenditures

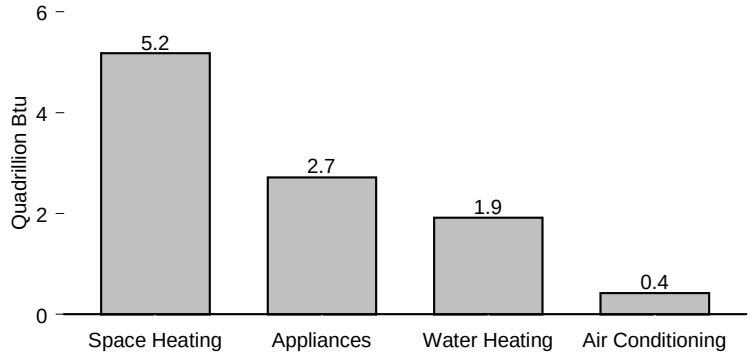
Consumption by Energy Source, 1997



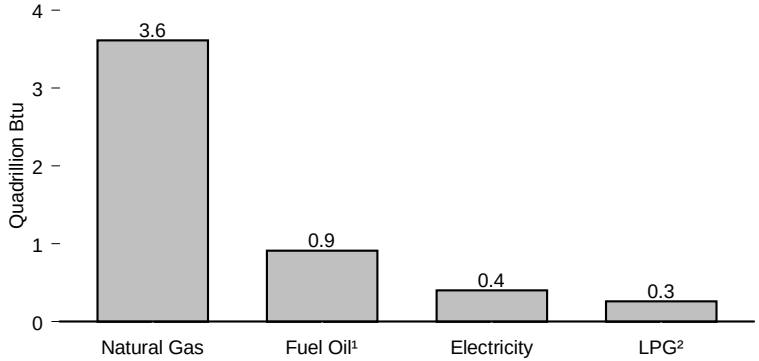
Expenditures, Selected Years, 1978-1997



Consumption by End Use, 1997



Consumption for Space Heating, 1997



¹ Distillate fuel oil and kerosene.
² Liquefied petroleum gases.
³ Nominal dollars.

Notes: • No data are available for years not shown. • Because vertical scales differ, graphs should not be compared.
Source: Table 2.5.

Table 2.5 Household Energy Consumption and Expenditures by End Use and Energy Source, Selected Years, 1978-1997

Year	Space Heating				Air Conditioning [1]	Water Heating				Appliances [2]			Total [1,2]			
	Natural Gas	Electricity [3]	Fuel Oil [4]	LPG [5]	Electricity [3]	Natural Gas	Electricity [3]	Fuel Oil [4]	LPG [5]	Natural Gas	Electricity [3]	LPG [5]	Natural Gas	Electricity [3]	Fuel Oil [4]	LPG [5]
	Consumption (quadrillion Btu)															
1978	4.26	0.40	2.05	0.23	0.31	1.04	0.29	0.14	0.06	0.28	1.46	0.03	5.58	2.47	2.19	0.33
1980	3.32	0.28	1.32	0.25	0.32	1.24	0.31	0.24	0.07	0.38	1.55	0.04	4.94	2.46	1.55	0.36
1981	3.80	0.30	1.12	0.22	0.33	1.10	0.33	0.20	0.06	0.49	1.53	0.03	5.39	2.48	1.33	0.31
1982	3.31	0.27	1.05	0.19	0.30	1.08	0.33	0.09	0.06	0.39	1.52	0.04	4.77	2.42	1.14	0.29
1984	3.51	0.30	1.11	0.21	0.33	1.10	0.32	0.15	0.06	0.35	1.53	0.04	4.98	2.48	1.26	0.31
1987	3.38	0.28	1.05	0.22	0.44	1.10	0.31	0.17	0.06	0.34	1.72	0.04	4.83	2.76	1.22	0.32
1990	3.37	0.30	0.93	0.19	0.48	1.16	0.34	0.11	0.06	0.33	1.91	0.03	4.86	3.03	1.04	0.28
1993	3.67	0.41	0.95	0.30	0.46	1.31	0.34	0.12	0.05	0.29	2.08	0.03	5.27	3.28	1.07	0.38
1997	3.61	0.40	0.91	0.26	0.42	1.29	0.39	0.16	0.08	0.37	2.33	0.02	5.28	3.54	1.07	0.36
	Expenditures (billion dollars [6])															
1978	11.49	3.53	8.06	1.05	3.97	2.88	3.15	0.56	0.36	0.93	19.24	0.25	15.30	29.89	8.62	1.66
1980	12.80	3.71	10.59	1.90	5.07	4.79	4.54	1.89	0.59	1.71	26.82	0.40	19.30	40.14	12.48	2.89
1981	17.07	4.60	9.99	1.84	5.96	4.93	5.32	1.83	0.53	2.50	30.02	0.37	24.50	45.90	11.82	2.74
1982	18.55	4.45	8.84	1.68	6.05	6.08	5.90	0.75	0.57	2.42	32.02	0.47	27.06	48.42	9.59	2.72
1984	20.66	5.71	8.51	2.00	7.37	6.63	6.44	1.09	0.58	2.31	34.96	0.54	29.78	54.48	9.60	3.12
1987	18.05	5.53	6.25	1.85	9.77	6.02	6.45	0.94	0.50	2.02	39.83	0.46	26.15	61.58	7.21	2.81
1990	18.59	6.16	7.42	2.01	R11.23	6.59	7.21	0.83	0.65	2.03	46.95	0.48	27.26	71.54	8.25	3.14
1993	21.95	8.66	6.24	2.81	R11.31	8.08	7.58	0.74	0.58	1.98	53.52	0.42	32.04	81.08	6.98	3.81
1997	24.11	8.56	6.57	2.79	10.20	8.84	8.99	1.04	0.89	2.86	60.57	0.36	35.81	88.33	7.61	4.04

[1] A small amount of natural gas used for air conditioning is included in "Natural Gas" under "Total."
[2] Includes refrigerators. A small amount of fuel oil or kerosene used for appliances is included in "Fuel Oil" under "Total."
[3] Site electricity. One kilowatthour = 3,412 Btu.
[4] Fuel oil is distillate fuel oil and kerosene.
[5] Liquefied petroleum gases.
[6] Nominal dollars.

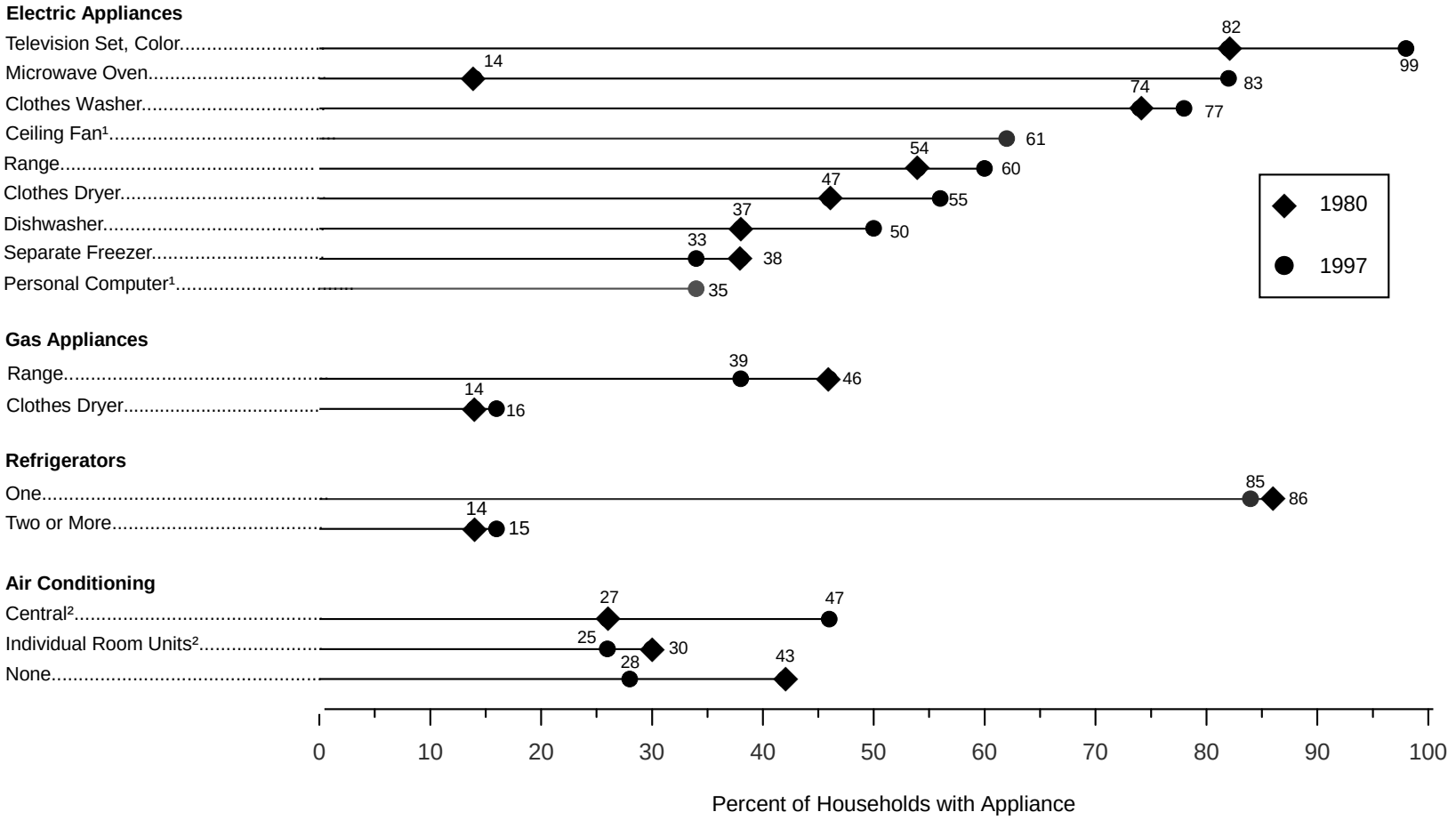
R=Revised.

Notes: • No data are available for years not shown. Consumption data by energy source for 1979 are available on Table 2.4. • Totals may not equal sum of components due to independent rounding.

Web Page: http://www.eia.doe.gov/emeu/consumption.

Sources: • 1978—Energy Information Administration (EIA), Form EIA-84, "Residential Energy Consumption Survey." • 1980 forward—EIA, Form EIA-457, "Residential Energy Consumption Survey."

Figure 2.6 Households With Selected Appliances, 1980 and 1997



[1] Not collected in 1980.

[2] Households with both central and individual room units are counted only under "central."

Source: Table 2.6.

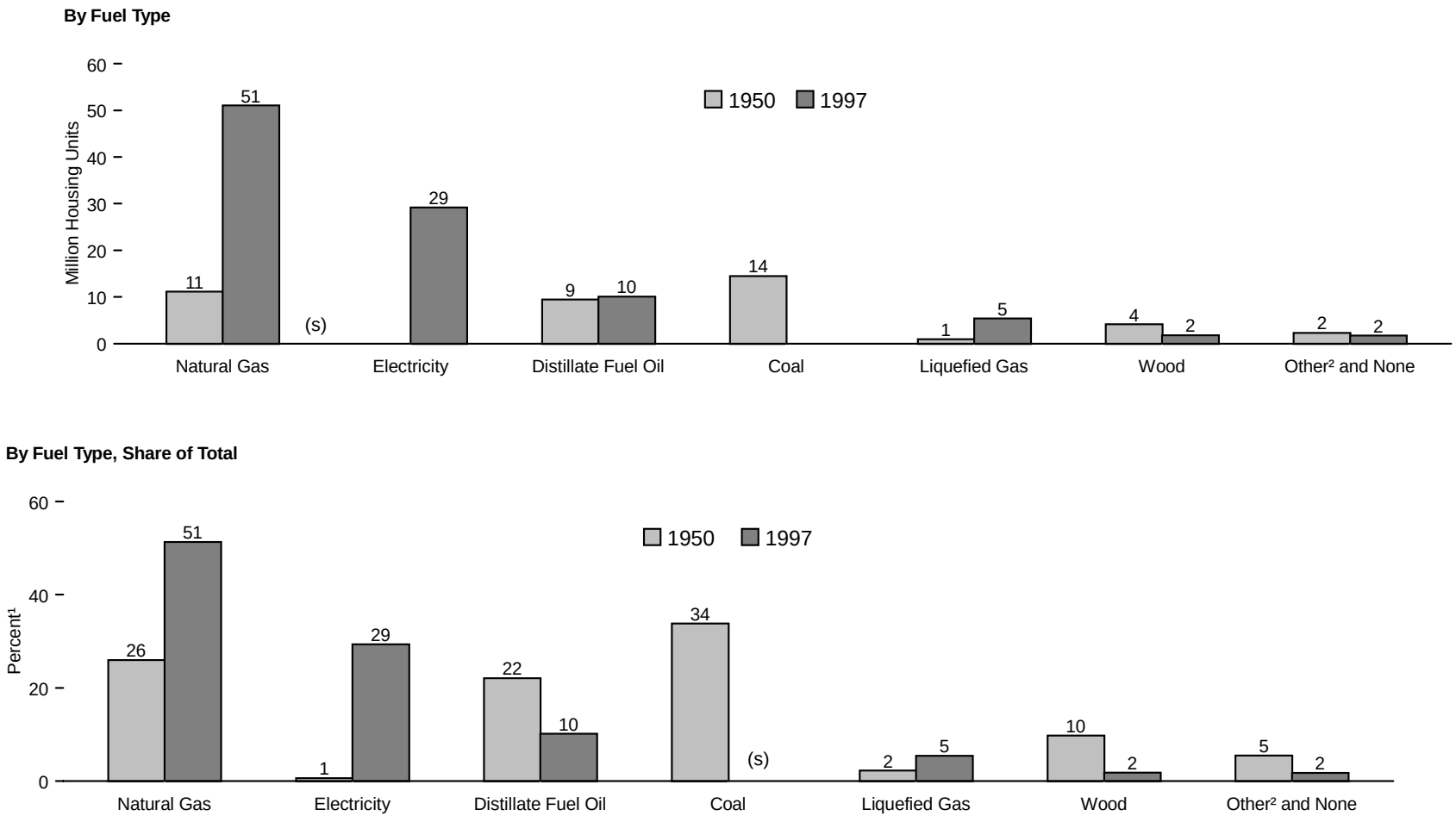
Table 2.6 Household Main Heating Fuel and Presence of Selected Appliances, Selected Years, 1978-1997

Appliance	Year										Change
	1978	1979	1980	1981	1982	1984	1987	1990	1993	1997	1980 to 1997
Total Households (millions)	R77	78	82	83	84	86	R91	94	97	101	+20
	Percent of Households										
Type of Main Heating Fuel											
Natural Gas	55	55	55	56	57	55	55	55	53	53	-2
Electricity	16	17	18	17	16	17	20	23	26	29	+12
Liquefied Petroleum Gas	4	5	5	4	5	5	5	5	5	5	0
Fuel Oil	20	17	15	14	13	12	12	11	11	9	-6
Wood	2	4	6	6	7	7	6	4	3	2	-4
Type of Appliances											
Electric Appliances											
Television Set (Color)	NA	NA	82	R83	85	88	93	96	98	99	+17
Television Set (B/W)	NA	NA	51	48	R46	43	36	31	20	NA	NA
Television Set (Any)	NA	NA	98	98	98	98	98	99	99	NA	NA
Clothes Washer	R74	NA	74	R73	R71	R73	R75	76	77	77	+3
Range (Stove-Top Burner)	53	NA	54	54	53	54	57	58	61	60	+7
Oven, Microwave	8	NA	14	17	21	34	61	79	84	83	+69
Clothes Dryer	45	NA	47	45	45	46	51	53	57	55	+8
Separate Freezer	35	NA	38	38	37	37	34	R34	35	33	-5
Dishwasher	35	NA	37	37	36	38	43	45	45	50	+13
Dehumidifier	NA	NA	9	9	9	9	10	12	9	NA	NA
Waterbed Heaters	NA	NA	NA	NA	NA	10	14	15	12	8	NA
Window or Ceiling Fan	NA	NA	NA	NA	28	35	46	51	60	NA	NA
Ceiling Fan	NA	NA	NA	NA	NA	NA	NA	NA	54	61	NA
Whole House Fan	NA	NA	NA	NA	8	8	9	10	4	NA	NA
Evaporative Cooler	NA	NA	4	4	4	4	3	4	3	NA	NA
Personal Computer	NA	NA	NA	NA	NA	NA	NA	16	23	35	NA
Pump for Well Water	NA	NA	NA	NA	NA	NA	NA	15	13	14	NA
Swimming-Pool Pump [1]	NA	NA	3	4	3	NA	NA	5	5	5	+2
Gas Appliances [2]											
Range (Stove-Top or Burner)	48	NA	46	46	47	45	43	42	38	39	-7
Clothes Dryer	14	NA	14	16	15	16	15	16	15	16	+2
Outdoor Gas Grill	R 6	NA	9	9	11	13	20	26	29	NA	NA
Outdoor Gas Light	2	NA	2	2	2	1	1	1	1	1	-1
Swimming Pool Heater [3]	NA	NA	(s)	(s)	(s)	1	1	R 1	1	1	0
Refrigerators [4]											
One	86	NA	86	87	86	88	86	84	85	85	-1
Two or More	14	NA	14	13	13	12	14	15	15	15	+1
Air Conditioning (A/C)											
Central [5]	23	24	27	27	28	30	R34	39	44	47	20
Individual Room Units [5]	33	31	30	31	30	30	30	29	25	25	-5
None	44	45	43	42	42	40	36	32	32	28	-15
Portable Kerosene Heaters	(s)	NA	(s)	1	3	6	6	5	R 3	2	+2

[1] All reported swimming pools were assumed to have an electric pump for filtering and circulating the water, except for 1993 and 1997, when a filtering system was made explicit.
[2] Includes natural gas or liquefied petroleum gases.
[3] In 1984 and 1987, also includes heaters for jacuzzis and hot tubs.
[4] Fewer than 0.5 percent of the households do not have a refrigerator.
[5] Households with both central and individual room units are counted only under "Central."

R=Revised data. NA=Not available. (s)=Less than 0.5 percent.
Note: No data are available for years not shown.
Web Page: http://www.eia.doe.gov/emeu/consumption.
Sources: • 1978 and 1979—Energy Information Administration (EIA), Form EIA-84, "Residential Energy Consumption Survey." • 1980 forward—EIA, Form EIA-457, "Residential Energy Consumption Survey."

Figure 2.7 Type of Heating in Occupied Housing Units, 1950 and 1997



¹ Sum of components may not equal 100 percent due to independent rounding.
² Kerosene, solar, and other.
(s)=Less than 0.5.

Source: Table 2.7.

Table 2.7 Type of Heating in Occupied Housing Units, Selected Years, 1950-1997

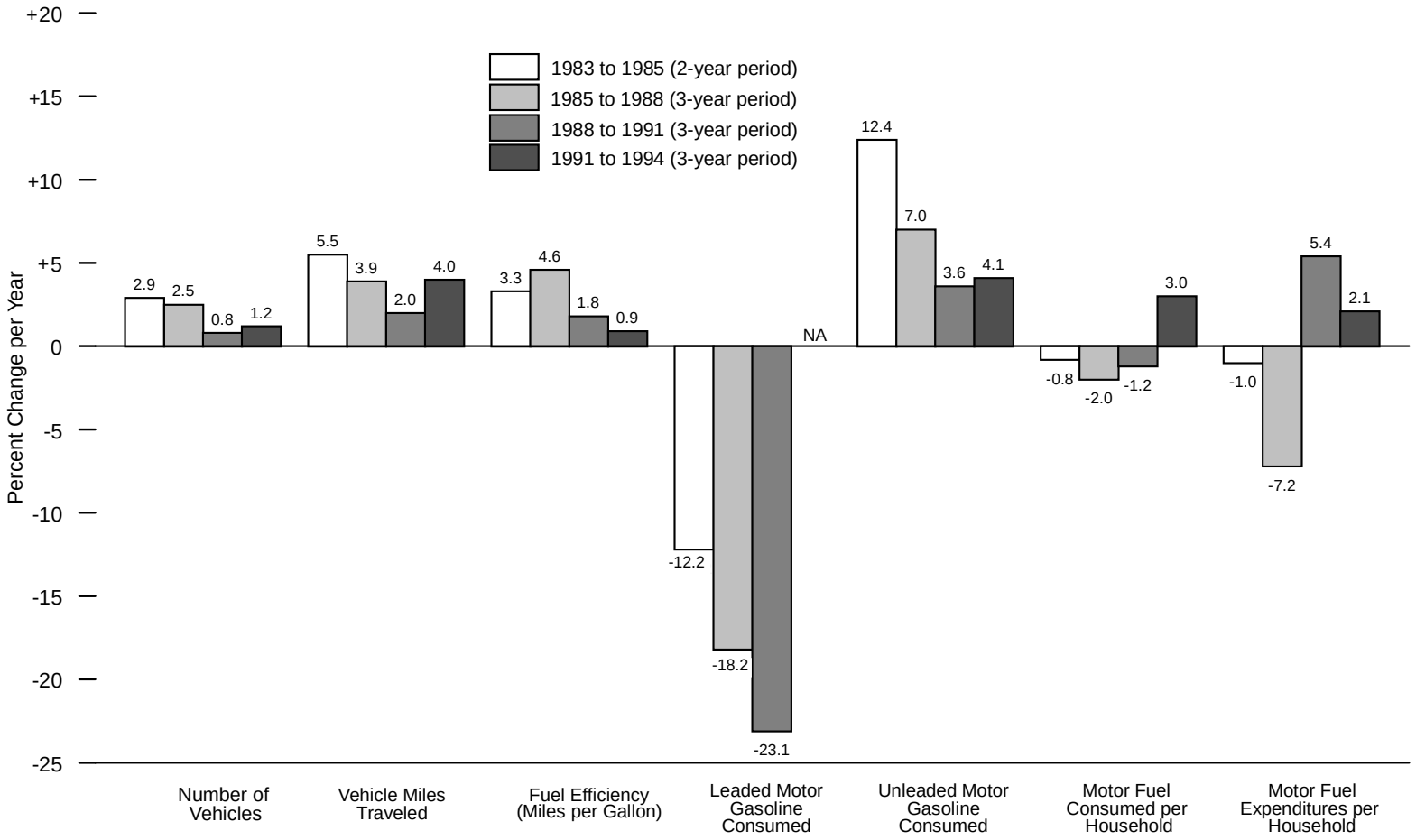
Year	Coal [1]	Natural Gas	Liquefied Gas	Distillate Fuel Oil	Kerosene	Electricity	Wood	Solar	Other	None [2]	Total
					Million						
1950	14.48	11.12	0.98	9.46	([3])	0.28	4.17	NA	0.77	1.57	42.83
1960	6.46	22.85	2.69	17.16	([3])	0.93	2.24	NA	0.22	0.48	53.02
1970	1.82	35.01	3.81	16.47	([3])	4.88	0.79	NA	0.27	0.40	63.45
1973	0.80	38.46	4.42	17.24	([3])	7.21	0.60	NA	0.15	0.45	69.34
1974	0.74	39.47	4.14	16.84	([3])	8.41	0.66	NA	0.09	0.48	70.83
1975	0.57	40.93	4.15	16.30	([3])	9.17	0.85	NA	0.08	0.47	72.52
1976	0.48	41.22	4.24	16.45	([3])	10.15	0.91	NA	0.09	0.46	74.01
1977	0.45	41.54	4.18	15.62	0.44	11.15	1.24	NA	0.15	0.51	75.28
1978	0.40	42.52	4.13	15.65	0.42	12.26	1.07	NA	0.12	0.60	77.17
1979	0.36	43.32	4.13	15.30	0.41	13.24	1.14	NA	0.10	0.57	78.57
1980	0.33	44.40	4.17	14.50	0.37	14.21	1.38	NA	0.11	0.61	80.07
1981	0.36	46.08	4.17	14.13	0.37	15.49	1.89	NA	0.10	0.59	83.18
1983 [4]	0.43	46.70	3.87	12.59	0.45	15.68	4.09	NA	0.16	0.68	84.64
1985	0.45	45.33	3.58	12.44	1.06	18.36	6.25	0.05	0.37	0.53	88.43
1987	0.41	45.96	3.66	12.74	1.08	20.61	5.45	0.05	0.28	0.66	90.89
1989	0.34	47.40	3.66	12.47	1.07	23.06	4.59	0.04	0.40	0.66	93.68
1991	0.32	47.02	3.88	11.47	0.99	23.71	4.44	0.03	0.41	0.86	93.15
1993	0.30	47.67	3.92	11.17	1.02	25.11	4.10	0.03	0.50	0.91	94.73
1995	0.21	49.20	4.25	10.98	1.06	26.77	3.53	0.02	0.64	1.04	97.69
1997	0.18	51.05	5.40	10.10	0.75	29.20	1.79	0.03	0.36	0.62	99.49
					Percent						
1950	33.8	26.0	2.3	22.1	([3])	0.6	9.7	NA	1.8	3.7	100.0
1960	12.2	43.1	5.1	32.4	([3])	1.8	4.2	NA	0.4	0.9	100.0
1970	2.9	55.2	6.0	26.0	([3])	7.7	1.3	NA	0.4	0.6	100.0
1973	1.2	55.5	6.4	24.9	([3])	10.4	0.9	NA	0.2	0.7	100.0
1974	1.0	55.7	5.8	23.8	([3])	11.9	0.9	NA	0.1	0.7	100.0
1975	0.8	56.4	5.7	22.5	([3])	12.6	1.2	NA	0.1	0.6	100.0
1976	0.7	55.7	5.7	22.2	([3])	13.7	1.2	NA	0.1	0.6	100.0
1977	0.6	55.2	5.6	20.7	0.6	14.8	1.6	NA	0.2	0.7	100.0
1978	0.5	55.1	5.4	20.3	0.5	15.9	1.4	NA	0.2	0.8	100.0
1979	0.5	55.1	5.3	19.5	0.5	16.9	1.4	NA	0.1	0.7	100.0
1980	0.4	55.4	5.2	18.1	0.5	17.7	1.7	NA	0.1	0.8	100.0
1981	0.4	55.4	5.0	17.0	0.4	18.6	2.3	NA	0.1	0.7	100.0
1983 [4]	0.5	55.2	4.6	14.9	0.5	18.5	4.8	NA	0.2	0.8	100.0
1985	0.5	51.3	4.1	14.1	1.2	20.8	7.1	0.1	0.4	0.6	100.0
1987	0.4	50.6	4.0	14.0	1.2	22.7	6.0	0.1	0.3	0.7	100.0
1989	0.4	50.6	3.9	13.3	1.1	24.6	4.9	(s)	0.4	0.7	100.0
1991	0.3	50.5	4.2	12.3	1.1	25.5	4.8	(s)	0.4	0.9	100.0
1993	0.3	50.3	4.1	11.8	1.1	26.5	4.3	(s)	0.5	1.0	100.0
1995	0.2	50.4	4.4	11.2	1.1	27.4	3.6	(s)	0.7	1.1	100.0
1997	0.2	51.3	5.4	10.2	0.8	29.4	1.8	(s)	0.4	0.6	100.0

[1] Includes coal coke.
[2] Includes nonreporting units in 1950 and 1960, which totaled 997 and 2,000 units, respectively.
[3] Included in distillate fuel oil.
[4] Since 1983, the *American Housing Survey for the United States* has been a biennial survey.
NA=Not available. (s)=Less than 0.05 percent.

Notes: • Includes mobile homes and individual housing units in apartment buildings. Housing units with more than one type of heating system are classified according to the principal type of heating system. • Totals may not equal sum of components due to independent rounding.

Sources: • 1950, 1960, and 1970—Bureau of the Census, *Census of Population and Housing.* • 1973 forward—Bureau of the Census, *American Housing Survey for the United States in 1997,* Table 2-5.

Figure 2.8 Household Motor Vehicle Data



Note: The percent changes are of all income categories; they are simple average annual percent changes (computed as the percent change over the period divided by the number of years in the period) and will differ slightly from compound average annual percent changes.

NA=Not Available.
Source: Table 2.8.

Table 2.8 Household Motor Vehicle Data, 1983, 1985, 1988, 1991, and 1994

Unit of Measure	Family Income														
	Less than $25,000					$25,000 or More					All Income Categories				
	1983	1985	1988	1991	1994	1983	1985	1988	1991	1994	1983	1985	1988	1991	1994
Households with Vehicles (millions)	42.9	43.3	38.9	36.5	34.5	30.5	34.5	42.2	48.2	50.3	73.4	77.7	81.3	84.6	84.9
Vehicles (millions)	66.7	65.4	58.7	52.7	52.0	63.0	71.9	88.8	98.5	104.8	129.7	137.3	147.5	151.2	156.8
Vehicle Miles Traveled (billions)	589	587	550	488	550.4	630	766	960	1,114	1,242.8	1,219	1,353	1,511	1,602	1,793
Motor Fuel Consumed (billion gallons)	40.8	38.2	31.4	26.9	28.3	39.8	45.7	51.0	55.9	62.3	80.5	83.9	82.4	82.8	90.6
Motor Gasoline Consumed (billion gallons)															
Leaded	19.2	13.5	5.4	1.8	Q	13.2	11.0	5.8	1.6	Q	32.4	24.5	11.1	3.4	Q
Unleaded	20.9	24.2	25.7	24.7	26.7	25.3	33.7	44.3	52.9	60.3	46.3	57.8	69.9	77.5	87.0
Motor Fuel Expenditures (billion dollars[1])	48.1	44.8	30.7	31.7	32.6	47.3	54.3	50.3	66.6	72.1	95.4	99.1	81.1	98.2	104.7
Averages per Household with Vehicles															
Vehicles	1.6	1.5	1.5	1.4	1.5	2.1	2.1	2.1	2.0	2.1	1.8	1.8	1.8	1.8	1.8
Vehicle Miles Traveled (thousands)	13.7	13.6	14.1	13.4	15.9	20.7	22.2	22.7	23.1	24.7	16.6	17.4	18.6	18.9	21.1
Motor Fuel Consumed (gallons)	950	883	807	737	818	1,305	1,326	1,205	1,160	1,238	1,097	1,079	1,014	979	1,067
Motor Fuel Expenditures (dollars[1])	1,121	1,035	789	869	943	1,552	1,575	1,191	1,382	1,433	1,300	1,274	998	1,161	1,234
Averages per Vehicle															
Vehicle Miles Traveled (thousands)	8.8	9.0	9.4	9.3	10.6	10.0	10.7	10.8	11.3	11.9	9.4	9.9	10.3	10.6	11.4
Motor Fuel Consumed (gallons)	612	585	536	510	545	631	636	574	568	594	621	611	559	548	578
Motor Fuel Expenditures (dollars[1])	722	685	524	602	628	751	755	567	676	688	736	722	550	650	668
Fuel Efficiency (miles per gallon)	14.4	15.3	17.5	18.1	19.5	15.8	16.8	18.8	19.9	20.0	15.1	16.1	18.3	19.3	19.8
Price of Motor Gasoline (dollars[1] per gallon)															
Leaded	1.14	1.11	0.90	1.10	Q	1.14	1.11	0.90	1.10	Q	1.14	1.11	0.90	1.10	Q
Unleaded	1.22	1.20	0.99	1.18	1.15	1.22	1.21	1.00	1.19	1.16	1.22	1.21	1.00	1.19	1.16

[1] Nominal dollars.

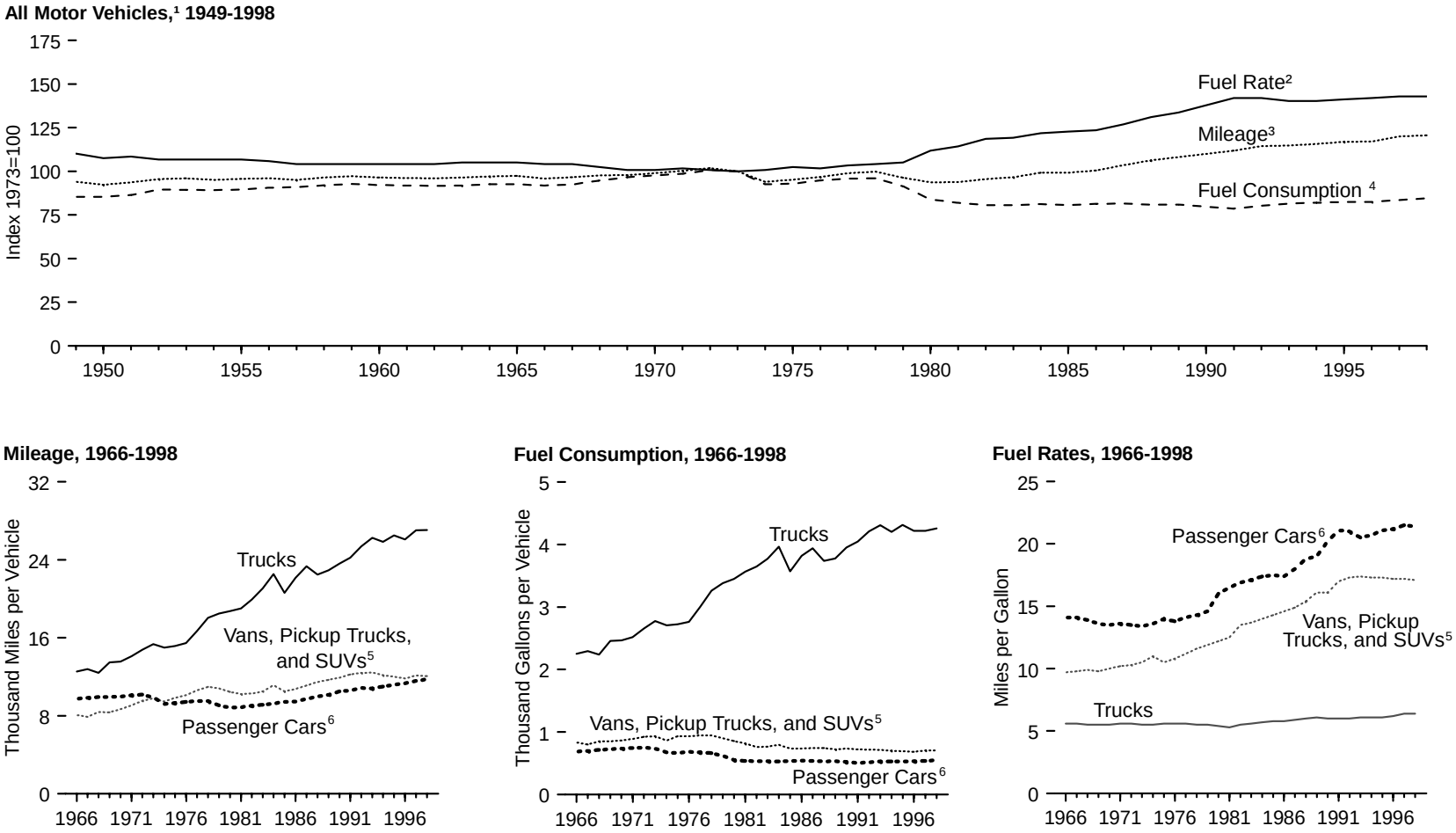
Q=Data withheld because either the relative standard error was greater than 50 percent or fewer than 10 households were sampled.

Notes: • Included are passenger cars, minivans, passenger vans, cargo vans, motor homes, pickup trucks, and sport-utility vehicles (i.e., jeeplike vehicles, usually four-wheel drive). Excluded are motorcycles, mopeds, large trucks, and buses. • Motor fuel includes motor gasoline and a small amount of other fuels, such as diesel, gasohol, and propane. These data for 1983 differ from previously published 1983 data in that the basis for estimating the number of vehicle-owning households was changed to conform with that being used for 1985. Purchase diaries, which were fuel purchase logs retained by drivers in 1983 and 1985, were used as the basis for estimating data for those years. • Totals may not equal sum of components due to independent rounding.

Web Page: http://www.eia.doe.gov/emeu/consumption.

Sources: **Fuel Efficiency:** • 1983 and 1985—Energy Information Administration (EIA), "Residential Transportation Energy Consumption Survey," purchase diaries. • 1988 through 1994—Environmental Protection Agency Certification Files, adjusted for on-road driving. **Price of Motor Gasoline:** • 1983 and 1985—EIA, "Residential Transportation Energy Consumption Survey," purchase diaries. • 1988 through 1994—Bureau of Labor Statistics Gasoline Pump Price Series and Lundberg Inc. price series. **All Other Data:** EIA, Form EIA-876A/C, "Residential Transportation Energy Consumption Survey."

Figure 2.9 Motor Vehicle Mileage, Fuel Consumption, and Fuel Rates



[1] Passenger cars, motorcycles, vans, pickup trucks, sport utility vehicles, trucks, and buses.
[2] Miles per gallon.
[3] Miles per vehicle.
[4] Gallons per vehicle.
[5] Sport utility vehicles.
[6] Motorcycles are included with passenger cars through 1989.
Source: Table 2.9.

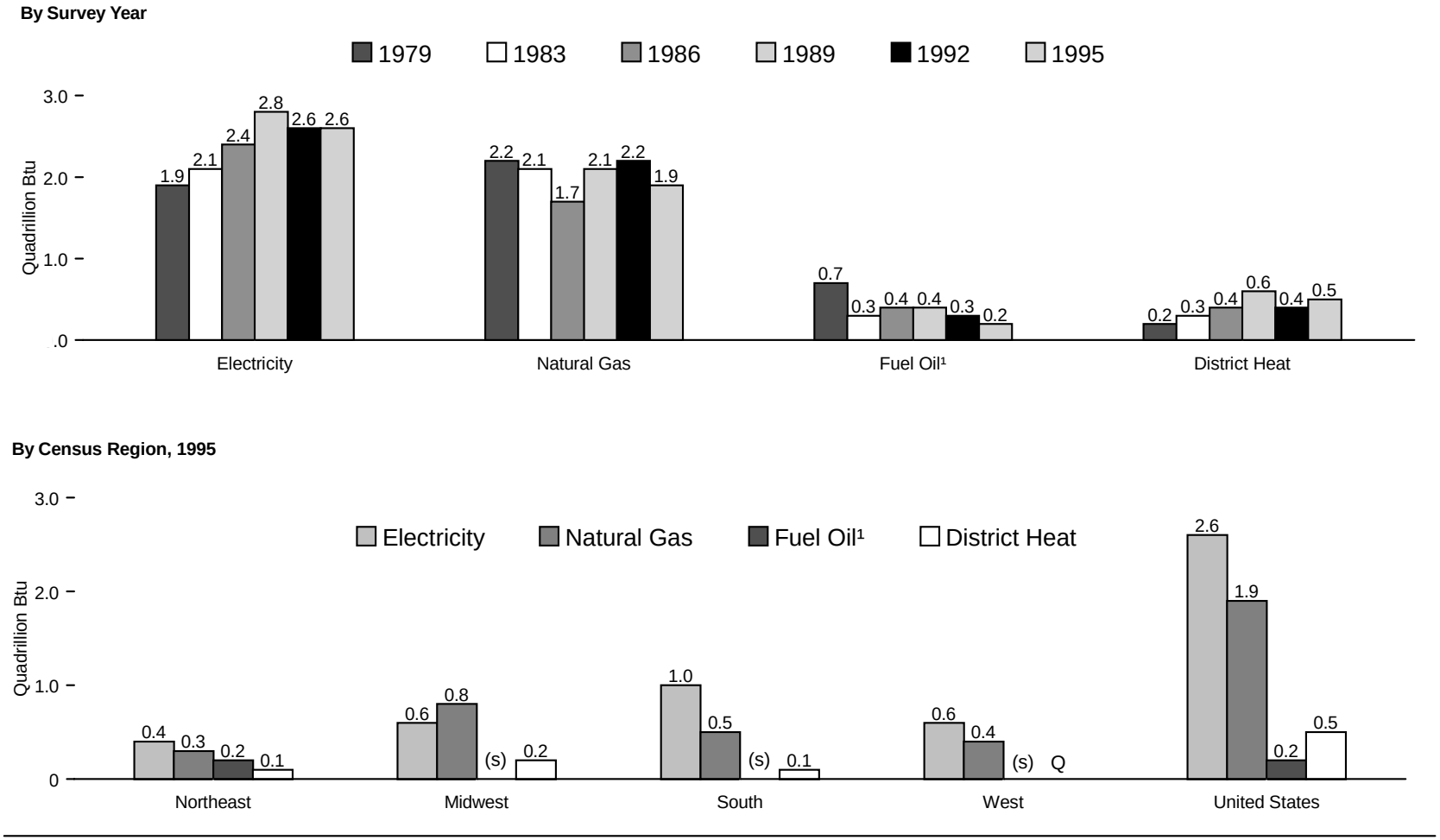
Table 2.9 Motor Vehicle Mileage, Fuel Consumption, and Fuel Rates, 1949-1998

Year	Passenger Cars			Vans, Pickup Trucks, and Sport Utility Vehicles [1]			Trucks [2]			All Motor Vehicles [3]		
	Mileage (miles per vehicle)	Fuel Consumption (gallons per vehicle)	Fuel Rate (miles per gallon)	Mileage (miles per vehicle)	Fuel Consumption (gallons per vehicle)	Fuel Rate (miles per gallon)	Mileage (miles per vehicle)	Fuel Consumption (gallons per vehicle)	Fuel Rate (miles per gallon)	Mileage (miles per vehicle)	Fuel Consumption (gallons per vehicle)	Fuel Rate (miles per gallon)
1949	[4]9,388	[4]627	[4]15.0	([5])	([5])	([5])	[6]9,712	[6]1,080	[6]9.0	9,498	726	13.1
1950	[4]9,060	[4]603	[4]15.0	([5])	([5])	([5])	[6]10,316	[6]1,229	[6]8.4	9,321	725	12.8
1951	[4]9,186	[4]614	[4]15.0	([5])	([5])	([5])	[6]10,545	[6]1,242	[6]8.5	9,460	735	12.9
1952	[4]9,360	[4]639	[4]14.7	([5])	([5])	([5])	[6]10,769	[6]1,288	[6]8.4	9,642	762	12.7
1953	[4]9,377	[4]640	[4]14.6	([5])	([5])	([5])	[6]10,963	[6]1,283	[6]8.5	9,684	760	12.7
1954	[4]9,349	[4]641	[4]14.6	([5])	([5])	([5])	[6]10,682	[6]1,281	[6]8.3	9,605	758	12.7
1955	[4]9,447	[4]645	[4]14.6	([5])	([5])	([5])	[6]10,576	[6]1,293	[6]8.2	9,661	761	12.7
1956	[4]9,496	[4]654	[4]14.5	([5])	([5])	([5])	[6]10,511	[6]1,309	[6]8.0	9,688	771	12.6
1957	[4]9,348	[4]658	[4]14.2	([5])	([5])	([5])	[6]10,774	[6]1,304	[6]8.3	9,609	773	12.4
1958	[4]9,500	[4]670	[4]14.2	([5])	([5])	([5])	[6]10,768	[6]1,303	[6]8.3	9,732	782	12.4
1959	[4]9,615	[4]674	[4]14.3	([5])	([5])	([5])	[6]10,702	[6]1,328	[6]8.1	9,817	789	12.4
1960	[4]9,518	[4]668	[4]14.3	([5])	([5])	([5])	[6]10,693	[6]1,333	[6]8.0	9,732	784	12.4
1961	[4]9,521	[4]663	[4]14.4	([5])	([5])	([5])	[6]10,537	[6]1,341	[6]7.9	9,708	781	12.4
1962	[4]9,494	[4]662	[4]14.3	([5])	([5])	([5])	[6]10,554	[6]1,337	[6]7.9	9,687	779	12.4
1963	[4]9,587	[4]655	[4]14.6	([5])	([5])	([5])	[6]10,395	[6]1,380	[6]7.5	9,737	780	12.5
1964	[4]9,665	[4]661	[4]14.6	([5])	([5])	([5])	[6]10,408	[6]1,389	[6]7.5	9,805	787	12.5
1965	[4]9,603	[4]661	[4]14.5	([5])	([5])	([5])	[6]10,851	[6]1,387	[6]7.8	9,826	787	12.5
1966	[4]9,733	[4]688	[4]14.1	8,077	833	9.7	12,537	2,250	5.6	9,675	780	12.4
1967	[4]9,849	[4]699	[4]14.1	7,877	801	9.8	12,789	2,294	5.6	9,751	786	12.4
1968	[4]9,922	[4]714	[4]13.9	8,376	849	9.9	12,402	2,240	5.5	9,864	805	12.2
1969	[4]9,921	[4]727	[4]13.6	8,355	851	9.8	13,484	2,459	5.5	9,885	821	12.0
1970	[4]9,989	[4]737	[4]13.5	8,676	866	10.0	13,565	2,467	5.5	9,976	830	12.0
1971	[4]10,097	[4]743	[4]13.6	9,082	888	10.2	14,117	2,519	5.6	10,133	839	12.1
1972	[4]10,171	[4]754	[4]13.5	9,534	922	10.3	14,780	2,657	5.6	10,279	857	12.0
1973	[4]9,884	[4]737	[4]13.4	9,779	931	10.5	15,370	2,775	5.5	10,099	850	11.9
1974	[4]9,221	[4]677	[4]13.6	9,452	862	11.0	14,995	2,708	5.5	9,493	788	12.0
1975	[4]9,309	[4]665	[4]14.0	9,829	934	10.5	15,167	2,722	5.6	9,627	790	12.2
1976	[4]9,418	[4]681	[4]13.8	10,127	934	10.8	15,438	2,764	5.6	9,774	806	12.1
1977	[4]9,517	[4]676	[4]14.1	10,607	947	11.2	16,700	3,002	5.6	9,978	814	12.3
1978	[4]9,500	[4]665	[4]14.3	10,968	948	11.6	18,045	3,263	5.5	10,077	816	12.4
1979	[4]9,062	[4]620	[4]14.6	10,802	905	11.9	18,502	3,380	5.5	9,722	776	12.5
1980	[4]8,813	[4]551	[4]16.0	10,437	854	12.2	18,736	3,447	5.4	9,458	712	13.3
1981	[4]8,873	[4]538	[4]16.5	10,244	819	12.5	19,016	3,565	5.3	9,477	697	13.6
1982	[4]9,050	[4]535	[4]16.9	10,276	762	13.5	19,931	3,647	5.5	9,644	686	14.1
1983	[4]9,118	[4]534	[4]17.1	10,497	767	13.7	21,083	3,769	5.6	9,760	686	14.2
1984	[4]9,248	[4]530	[4]17.4	11,151	797	14.0	22,550	3,967	5.7	10,017	691	14.5
1985	[4]9,419	[4]538	[4]17.5	10,506	735	14.3	20,597	3,570	5.8	10,020	685	14.6
1986	[4]9,464	[4]543	[4]17.4	10,764	738	14.6	22,143	3,821	5.8	10,143	692	14.7
1987	[4]9,720	[4]539	[4]18.0	11,114	744	14.9	23,349	3,937	5.9	10,453	694	15.1
1988	[4]9,972	[4]531	[4]18.8	11,465	745	15.4	22,485	3,736	6.0	10,721	688	15.6
1989	[4]10,157	[4]533	[4]19.0	11,676	724	16.1	22,926	3,776	6.1	10,932	688	15.9
1990	[R]10,504	[R]520	[R]20.2	11,902	738	16.1	23,603	3,953	6.0	11,107	677	16.4
1991	[R]10,571	[R]501	[R]21.1	12,245	721	17.0	24,229	4,047	6.0	11,294	669	16.9
1992	[R]10,857	[R]517	21.0	12,381	717	17.3	25,373	4,210	6.0	11,558	683	16.9
1993	[R]10,804	[R]527	[R]20.5	12,430	714	17.4	26,262	4,309	6.1	11,595	693	16.7
1994	[R]10,992	[R]531	[R]20.7	12,156	701	17.3	25,838	4,202	6.1	11,683	698	16.7
1995	11,203	530	21.1	12,018	694	17.3	26,514	4,315	6.1	11,793	700	16.8
1996	[R]11,330	534	21.2	11,811	685	17.2	26,092	4,221	6.2	11,813	700	16.9
1997	[R]11,581	[R]539	21.5	12,115	703	17.2	27,032	4,218	6.4	[R]12,107	711	17.0
1998[P]	11,725	548	21.4	12,061	704	17.1	27,064	4,257	6.4	12,183	719	17.0

[1] Includes a small number of trucks with 2 axles and 4 tires, such as step vans.
[2] Single-unit trucks with 2 axles and 6 or more tires, and combination trucks.
[3] Includes buses and motorcycles, which are not shown separately.
[4] Includes motorcycles.
[5] Included in "Trucks."
[6] Includes vans, pickup trucks, and sport utility vehicles.
R=Revised. P=Preliminary.

Note: For vehicle registrations data see the "Sources" or the "Web Page."
Web Page: http://www.fhwa.dot.gov/ohim.
Sources: **Passenger Cars:** • 1990-1994—U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics 1998,* Table 4-13. **All Other Data:** • 1949-1994—Federal Highway Administration (FHWA), *Highway Statistics Summary to 1995,* Table VM-201A. • 1995 forward—FHWA, *Highway Statistics,* annual reports, Table VM-1.

Figure 2.10 Commercial Buildings Consumption by Energy Source



[1] Distillate fuel oil, residual fuel oil, and kerosene.

Q=Data withheld because either the relative standard error was greater than 50 percent or fewer than 20 buildings were sampled.

(s)=Less than 0.05 quadrillion Btu.

Source: Table 2.10. See Appendix D for Census regions.

Table 2.10 Commercial Buildings Consumption by Energy Source, Selected Years, 1979-1995

(Trillion Btu)

Energy Source and Year	Square Footage Category			Principal Building Activity				Census Region [1]				All Buildings
	1,001 to 10,000	10,001 to 100,000	Over 100,000	Mercantile and Service	Office	Education	All Other	Northeast	Midwest	South	West	
Major Sources [2]												
1979	1,255	2,202	1,508	894	861	511	2,699	1,217	1,826	1,395	526	4,965
1983	1,242	1,935	1,646	812	1,018	480	2,513	858	1,821	1,462	682	4,823
1986	1,273	2,008	1,696	985	1,008	633	2,351	1,037	1,585	1,459	896	4,977
1989	1,259	2,402	2,127	1,048	1,230	704	2,806	1,354	1,659	1,648	1,126	5,788
1992	1,258	2,301	1,932	892	1,247	637	2,714	1,090	1,578	1,825	998	5,490
1995 [3]	1,332	2,152	1,838	973	1,019	614	2,716	1,035	1,497	1,684	1,106	5,321
Electricity												
1979	429	872	608	361	424	163	961	425	593	662	227	1,908
1983	469	903	758	426	509	152	1,041	324	673	801	331	2,129
1986	654	927	809	536	641	179	1,035	430	584	867	510	2,390
1989	572	1,145	1,056	550	781	217	1,225	586	609	975	604	2,773
1992	586	991	1,033	444	704	235	1,226	419	622	1,002	566	2,609
1995 [3]	618	1,064	926	508	676	221	1,204	436	558	1,027	587	2,608
Natural Gas												
1979	646	996	532	422	272	214	1,266	443	1,007	470	255	2,174
1983	684	809	597	327	365	246	1,152	278	978	523	311	2,091
1986	485	715	523	332	258	254	879	244	742	426	311	1,723
1989	568	836	670	417	238	323	1,095	353	831	498	391	2,073
1992	572	1,017	586	381	388	291	1,115	354	747	697	376	2,174
1995 [3]	535	830	580	395	239	245	1,066	297	750	528	371	1,946
Fuel Oil [4]												
1979	177	272	231	103	107	107	364	285	133	237	26	681
1983	85	140	90	43	75	61	135	172	28	104	Q	314
1986	114	206	121	105	39	103	194	270	63	86	23	442
1989	101	170	86	76	43	71	167	237	61	50	Q	357
1992	86	111	75	55	47	62	109	194	26	48	Q	272
1995 [3]	71	104	60	49	28	57	101	168	16	45	7	235
District Heat [5]												
1979	Q	61	136	Q	58	27	108	64	93	Q	Q	201
1983	Q	83	202	Q	68	21	184	84	141	34	30	289
1986	Q	159	243	12	71	97	243	94	196	81	51	422
1989	19	252	315	Q	167	Q	319	179	159	126	121	585
1992	Q	182	238	Q	109	49	264	123	183	78	51	435
1995 [3]	Q	154	271	Q	75	91	346	135	173	83	Q	533
Propane												
1979	23	15	5	10	Q	2	29	Q	16	15	10	43
1983	20	12	2	6	Q	2	24	Q	7	21	Q	34
1986	44	18	1	17	Q	3	42	9	19	26	Q	63

[1] See Appendix D for Census regions.

[2] For 1979, 1983, and 1986 includes electricity, natural gas, fuel oil, district heat, and propane. For 1989, 1992, and 1995 includes electricity, natural gas, fuel oil, and district heat. Propane consumption statistics were not collected after 1986.

[3] Commercial buildings on multibuilding manufacturing facilities and parking garages were excluded in the 1995 survey.

[4] Distillate fuel oil, residual fuel oil, and kerosene.

[5] For 1979 and 1983, includes only purchased steam. For 1986, 1989, 1992, and 1995 includes purchased and nonpurchased steam and purchased and nonpurchased hot water.

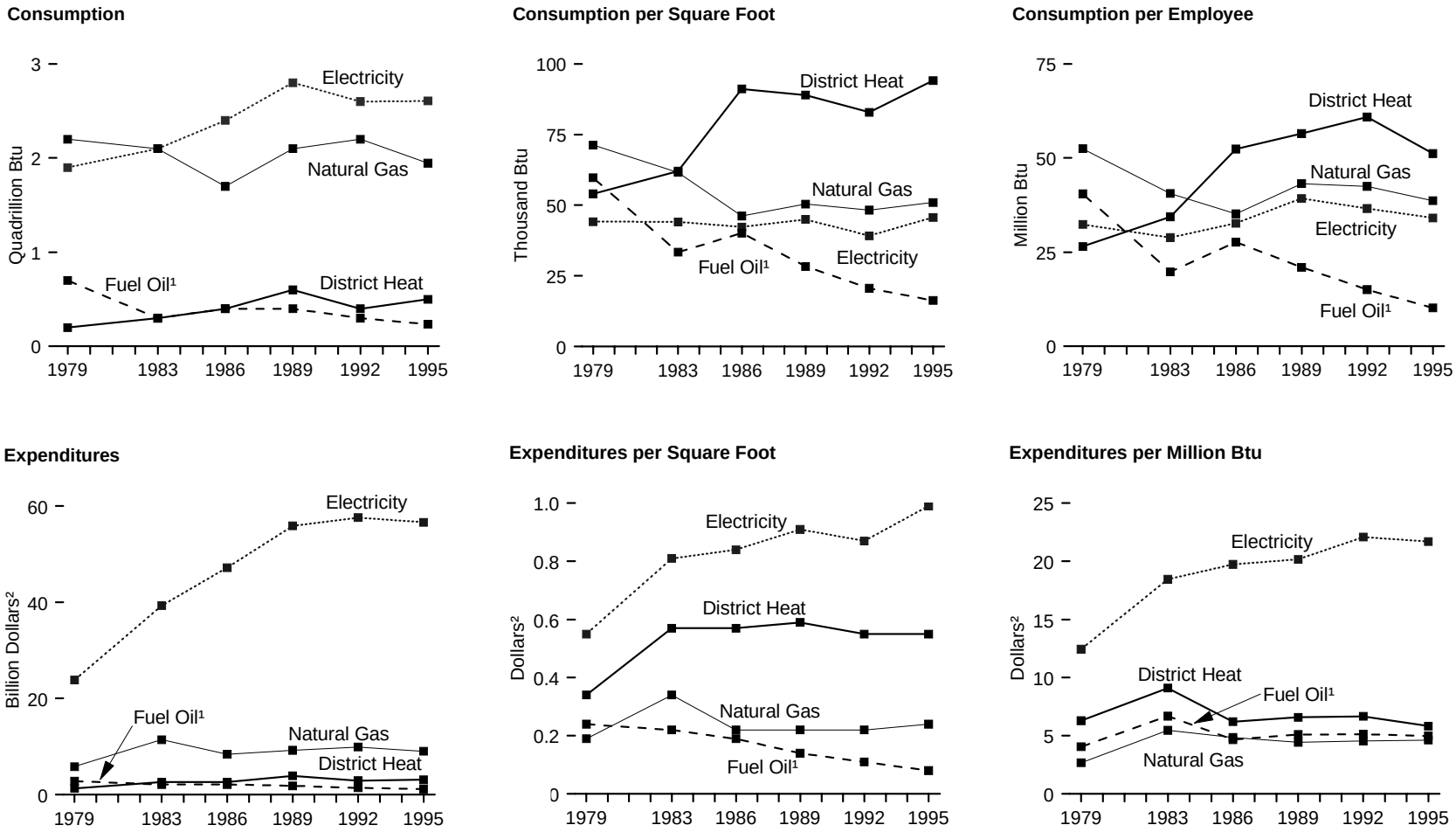
Q=Data withheld because either the relative standard error was greater than 50 percent or fewer than 20 buildings were sampled.

Note: Statistics for individual fuels are for all buildings using each fuel. Statistics for major sources are for the sum of electricity, natural gas, fuel oil, and district heat, across all buildings using any of those fuels.

Web Page: http://www.eia.doe.gov/emeu/consumption.

Sources: • 1979—Energy Information Administration (EIA), Form EIA-143, "Nonresidential Buildings Energy Consumption Survey."• 1983—EIA, Form EIA-788, "Nonresidential Buildings Energy Consumption Survey." • 1986—EIA, Form EIA-871, "Nonresidential Buildings Energy Consumption Survey." • 1989, 1992, and 1995—EIA, Form EIA-871A-F, "Commercial Buildings Energy Consumption Survey."

Figure 2.11 Commercial Buildings Energy Consumption and Expenditure Indicators, Selected Years, 1979-1995



¹ Distillate fuel oil, residual fuel oil, and kerosene.
² Nominal dollars.

Notes: • No data are available for 1980-1982, 1984, 1985, 1987, 1988, 1990, 1991, 1993, and 1994. • Because vertical scales differ, graphs should not be compared.
Source: Table 2.11.

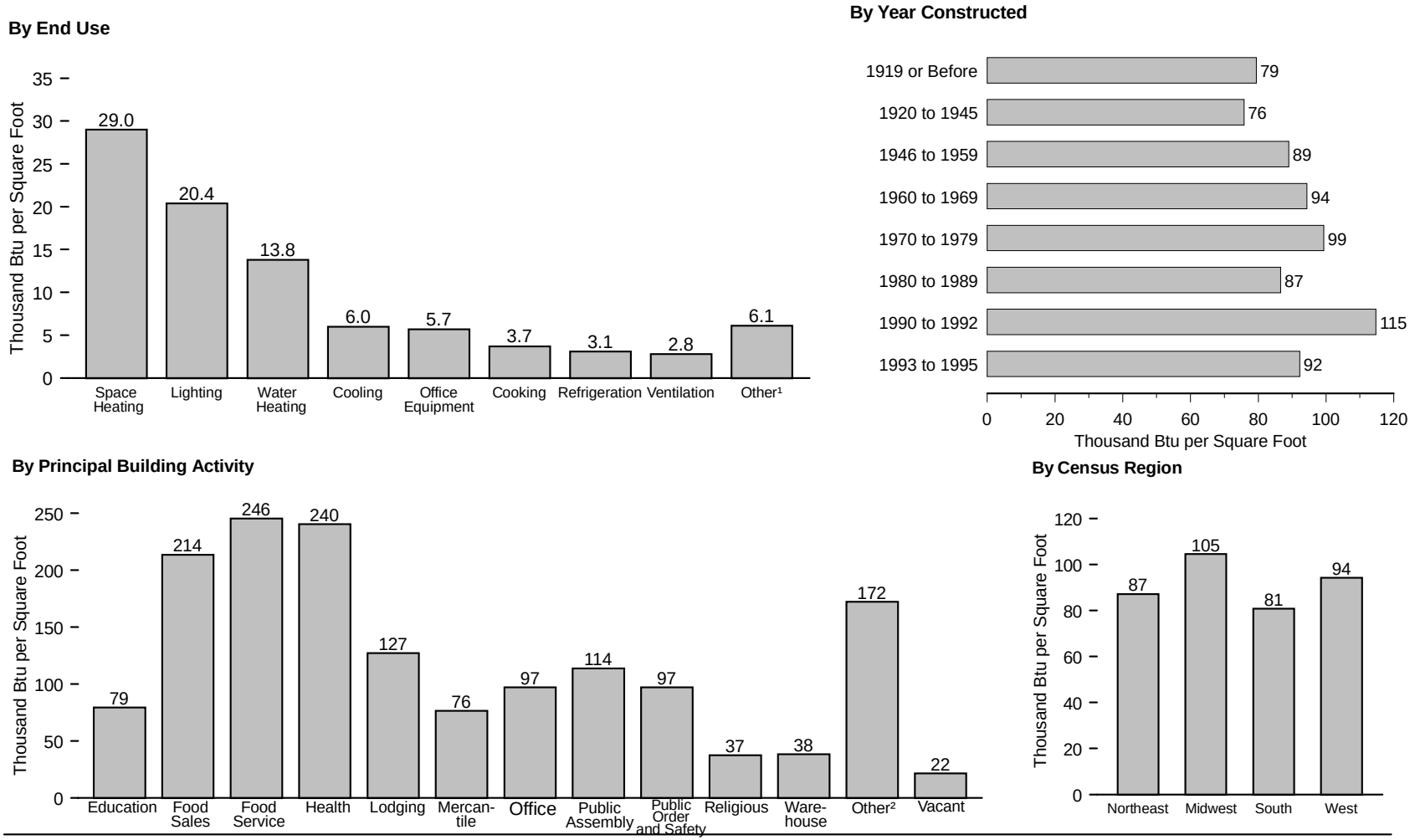
Table 2.11 Commercial Buildings Energy Consumption and Expenditure Indicators, Selected Years, 1979-1995

Energy Source and Year	Building Characteristics			Energy Consumption				Energy Expenditures			
	Number of Buildings (thousand)	Total Square Feet (million)	Square Feet per Building (thousand)	Total (trillion Btu)	Per Building (million Btu)	Per Square Foot (thousand Btu)	Per Employee (million Btu)	Total (million dollars[1])	Per Building (thousand dollars[1])	Per Square Foot (dollars[1])	Per Million Btu (dollars[1])
Major Sources [2]											
1979	3,073	43,546	14.2	5,008	1,630	115.0	85.0	33,821	11.0	0.78	6.75
1983	3,185	49,471	15.5	4,856	1,525	98.2	65.7	55,764	17.5	1.13	11.48
1986	4,154	58,199	14.0	5,040	1,213	86.6	68.6	60,762	14.6	1.04	12.06
1989	4,528	63,184	14.0	5,788	1,278	91.6	81.9	70,826	15.6	1.12	12.24
1992	4,806	67,876	14.1	5,490	1,142	80.9	77.1	71,821	14.9	1.06	13.08
1995 [3]	4,579	58,772	12.8	5,321	1,162	90.5	69.3	69,918	15.3	1.19	13.14
Electricity											
1979	3,001	43,153	14.4	1,908	636	44.2	32.4	23,751	7.9	0.55	12.45
1983	3,052	48,327	15.8	2,129	697	44.1	28.9	39,279	12.9	0.81	18.45
1986	3,965	56,508	14.3	2,390	603	42.3	32.7	47,186	11.9	0.84	19.74
1989	4,294	61,563	14.3	2,773	646	45.0	39.3	55,943	13.0	0.91	20.17
1992	4,611	66,525	14.4	2,609	566	39.2	36.6	57,619	12.5	0.87	22.09
1995 [3]	4,343	57,076	13.1	2,608	600	45.7	34.1	56,621	13.0	0.99	21.71
Natural Gas											
1979	1,864	30,477	16.4	2,174	1,167	71.3	52.5	5,814	3.1	0.19	2.67
1983	1,904	33,935	17.8	2,091	1,098	61.6	40.6	11,443	6.0	0.34	5.47
1986	2,214	37,263	16.8	1,723	778	46.2	35.2	8,355	3.8	0.22	4.85
1989	2,420	41,143	17.0	2,073	857	50.4	43.2	9,204	3.8	0.22	4.44
1992	2,657	44,994	16.9	2,174	818	48.3	42.5	9,901	3.7	0.22	4.55
1995 [3]	2,478	38,145	15.4	1,946	785	51.0	38.7	9,018	3.6	0.24	4.63
Fuel Oil [4]											
1979	641	11,397	17.8	681	1,063	59.7	40.5	2,765	4.3	0.24	4.06
1983	441	9,409	21.3	314	714	33.4	19.8	2,102	4.8	0.22	6.68
1986	534	11,005	20.6	442	827	40.1	27.7	2,059	3.9	0.19	4.66
1989	581	12,600	21.7	357	614	28.3	21.0	1,822	3.1	0.14	5.11
1992	560	13,215	23.6	272	487	20.6	15.1	1,400	2.5	0.11	5.14
1995 [3]	607	14,421	23.7	235	387	16.3	10.2	1,175	1.9	0.08	5.00
District Heat [5]											
1979	47	3,722	79.0	201	4,267	54.0	26.5	1,267	26.9	0.34	6.30
1983	64	4,643	72.9	289	4,530	62.1	34.4	2,627	41.2	0.57	9.10
1986	77	4,625	59.7	422	5,446	91.2	52.4	2,620	33.8	0.57	6.21
1989	98	6,578	67.0	585	5,964	89.0	56.5	3,857	39.3	0.59	6.59
1992	95	5,245	55.4	435	4,596	82.9	60.9	2,901	30.7	0.55	6.67
1995 [3]	110	5,658	51.5	533	4,849	94.1	51.2	3,103	28.3	0.55	5.83
Propane											
1979	214	2,797	13.1	43	202	15.5	12.9	225	1.1	0.08	5.19
1983	191	2,562	13.4	34	176	13.1	8.5	313	1.6	0.12	9.29
1986	344	3,213	9.3	63	184	19.7	17.6	543	1.6	0.17	8.59
1989	348	4,695	13.5	NA	NA	NA	NA	NA	NA	NA	NA
1992	337	3,393	10.1	NA	NA	NA	NA	NA	NA	NA	NA
1995	589	5,344	9.1	NA	NA	NA	NA	NA	NA	NA	NA

[1] Nominal dollars.
[2] For 1979, 1983, and 1986 includes electricity, natural gas, fuel oil, district heat, and propane. For 1989, 1992, and 1995 includes electricity, natural gas, fuel oil, and district heat. Propane consumption statistics were not collected after 1986.
[3] Commercial buildings on multibuilding manufacturing facilities and parking garages were excluded in the 1995 survey.
[4] Distillate fuel oil, residual fuel oil, and kerosene.
[5] For 1979 and 1983, includes only purchased steam. For 1986, 1989, 1992, and 1995 includes purchased and nonpurchased steam and purchased and nonpurchased hot water.

NA=Not available.
Note: Statistics for individual fuels are for all buildings using each fuel. Statistics for major sources are for all buildings, even buildings using no major fuel.
Web Page: http://www.eia.doe.gov/emeu/consumption.
Sources: • 1979—Energy Information Administration (EIA), Form EIA-143, "Nonresidential Buildings Energy Consumption Survey."• 1983—EIA, Form EIA-788, "Nonresidential Buildings Energy Consumption Survey." • 1986—EIA, Form EIA-871, "Nonresidential Buildings Energy Consumption Survey." • 1989, 1992, and 1995—EIA, Form EIA-871A-F, "Commercial Buildings Energy Consumption Survey."

Figure 2.12 Commercial Buildings Energy Intensities by Building Characteristic, 1995



[1] See Table 2.12, footnote 1, for description of "Other."

[2] Includes buildings that do not fit into any of the other categories.

Notes: • See Appendix D for Census Regions. • Because vertical scales differ, graphs should not be compared.

Source: Table 2.12.

Table 2.12 Commercial Buildings Energy Intensities by Building Characteristic, 1995

(Thousand Btu per Square Foot)

Building Characteristic	Space Heating	Cooling	Ventilation	Water Heating	Lighting	Cooking	Refrigeration	Office Equipment	Other [1]	All End Uses
All Buildings	**29.0**	**6.0**	**2.8**	**13.8**	**20.4**	**3.7**	**3.1**	**5.7**	**6.1**	**90.5**
Building Floorspace (square feet)										
1,001 to 5,000	39.5	7.0	2.9	9.7	22.7	8.9	10.4	5.4	5.1	111.7
5,001 to 10,000	38.5	4.4	1.7	11.1	13.6	4.3	2.5	3.8	2.9	82.8
10,001 to 25,000	27.4	4.8	1.7	9.1	14.7	2.6	2.5	4.3	3.7	70.9
25,001 to 50,000	28.2	6.7	2.1	11.6	18.5	2.1	2.5	5.0	5.2	82.0
50,001 to 100,000	27.0	7.0	3.2	12.9	21.3	2.0	2.1	6.1	6.0	87.6
100,001 to 200,000	26.6	6.2	3.3	19.6	25.0	3.1	1.4	7.2	8.9	101.4
200,001 to 500,000	24.0	6.7	4.5	25.2	27.4	4.6	1.6	8.5	11.9	114.6
Over 500,000	18.5	6.0	3.9	18.0	28.6	3.5	2.2	7.0	9.1	96.8
Principal Building Activity										
Education	32.8	4.8	1.6	17.4	15.8	1.4	1.0	1.5	2.9	79.3
Food Sales	27.5	13.4	4.4	9.1	33.9	5.6	110.9	1.3	7.4	213.5
Food Service	30.9	19.5	5.3	27.5	37.0	77.5	31.6	2.6	13.7	245.5
Health Care	55.2	9.9	7.2	63.0	39.3	11.2	4.7	15.5	34.4	240.4
Lodging	22.7	8.1	1.7	51.4	23.2	6.6	2.3	3.8	7.5	127.3
Mercantile and Service	30.6	5.8	2.5	5.1	23.4	1.5	0.9	2.9	3.7	76.4
Office	24.3	9.1	5.2	8.7	28.1	1.1	0.4	15.1	5.2	97.2
Public Assembly	53.6	6.3	3.5	17.5	21.9	2.8	1.8	2.4	3.8	113.7
Public Order and Safety	27.8	6.1	2.3	23.4	16.4	Q	0.2	5.8	12.7	97.2
Religious Worship	23.7	1.9	0.9	3.2	5.0	0.5	0.6	0.4	1.1	37.4
Warehouse and Storage	15.7	0.9	0.3	2.0	9.8	0.0	1.7	4.4	3.4	38.3
Other [2]	59.6	9.3	8.3	15.3	26.7	Q	0.7	15.2	35.9	172.2
Vacant	11.9	0.6	0.3	2.4	3.6	Q	0.2	0.5	1.9	21.5
Year Constructed										
1919 or Before	34.2	2.6	1.6	10.0	14.9	4.0	1.3	3.2	7.5	79.4
1920 to 1945	37.0	3.4	1.6	10.7	12.3	1.8	1.6	3.3	4.1	75.7
1946 to 1959	37.2	4.4	2.1	14.1	15.5	3.0	2.7	4.6	5.2	88.9
1960 to 1969	30.2	5.7	2.7	16.8	20.4	4.0	3.0	5.3	6.1	94.3
1970 to 1979	26.0	7.2	3.6	15.8	25.6	3.2	3.7	6.7	7.5	99.3
1980 to 1989	19.8	7.8	3.2	11.5	23.5	4.2	3.0	7.6	5.9	86.5
1990 to 1992	26.6	8.4	3.5	17.2	28.7	9.3	5.6	7.9	7.4	114.6
1993 to 1995	24.3	7.9	3.2	11.7	22.7	3.3	7.4	4.9	6.8	92.2
Census Region [3]										
Northeast	32.4	4.0	2.0	14.2	17.7	2.7	3.0	4.5	6.4	87.1
Midwest	46.7	4.3	2.5	15.6	18.8	3.5	2.4	5.1	5.6	104.5
South	18.0	8.4	3.2	10.5	21.3	4.0	3.4	5.9	6.0	80.8
West	23.4	5.5	3.1	17.0	23.6	4.3	3.4	7.2	6.5	94.2

[1] Examples of "other" include medical, electronic, and testing equipment; conveyors, wrappers, hoists, and compactors; washers, disposals, dryers and cleaning equipment; escalators, elevators, dumb waiters, and window washers; shop tools and electronic testing equipment; sign motors, time clocks, vending machines, phone equipment, and sprinkler controls; scoreboards, fire alarms, intercoms, television sets, radios, projectors, and door operators.

[2] Includes buildings that do not fit into any of the other named categories.

[3] See Appendix D for Census regions.

Q=Data withheld because either the relative standard error was greater than 50 percent or fewer than 20 buildings were sampled.

Web Page: http://www.eia.doe.gov/emeu/consumption.

Source: Energy Information Administration, *A Look at Commercial Buildings in 1995: Characteristics, Energy Consumption, and Energy Expenditures* (October 1998), Table EU-2.