

Table B7. Consumption of Natural Gas by End Use, 1989

Building Characteristics RSE Column Factor:	Natural Gas Consumption (trillion Btu)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other ^a	
	1.0	NF	NF	NF	NF	
All Buildings	2,073	1,265	320	198	290	7.27
Building Floorspace (Square Feet)						
1,001 to 5,000	302	183	62	35	23	7.78
5,001 to 10,000	265	174	43	11	37	12.17
10,001 to 25,000	278	200	43	12	24	8.90
25,001 to 50,000	309	207	31	15	56	12.87
50,001 to 100,000	249	186	31	12	20	12.43
100,001 to 200,000	238	153	42	28	16	18.86
200,001 to 500,000	228	110	43	17	Q	31.35
Over 500,000	203	53	26	Q	Q	37.56
Year Constructed						
1899 or Before	53	43	5	2	2	27.79
1900 to 1919	123	74	12	Q	Q	26.02
1920 to 1945	244	155	20	19	Q	20.89
1946 to 1959	411	234	71	Q	46	16.84
1960 to 1969	458	309	62	25	62	13.09
1970 to 1979	441	261	87	50	44	13.05
1980 to 1983	117	61	21	10	25	14.15
1984 to 1986	141	79	29	14	19	15.60
1987 to 1989	85	50	14	10	Q	22.82
BUILDING USE						
Principal Building Activity						
Assembly	174	135	13	17	8	9.72
Education	323	237	15	Q	20	19.04
Food Sales	27	14	1	12	1	23.80
Food Service	128	37	44	41	7	11.93
Health Care	186	45	71	29	Q	25.43
Lodging	187	78	84	17	9	13.83
Mercantile and Service	417	275	47	19	76	12.80
Office	238	171	27	4	36	11.63
Parking Garage	Q	Q	Q	Q	Q	NF
Public Order and Safety	25	21	1	Q	1	33.20
Warehouse	206	156	4	Q	Q	24.47
Other	102	57	6	Q	34	33.01
Vacant	49	31	Q	Q	Q	45.09
Weekly Operating Hours						
39 or Fewer	100	85	8	2	5	10.94
40 to 48	388	309	28	7	44	8.24
49 to 60	326	245	23	Q	46	10.76
61 to 84	342	212	47	34	49	10.77
85 to 167	360	193	44	Q	37	20.22
168 (Open Continuously)	557	222	171	56	108	13.40
Workers						
4 or Fewer	300	220	51	12	16	8.34
5 to 9	218	145	38	18	17	8.16
10 to 19	248	157	40	18	33	8.65
20 to 49	332	228	49	22	34	9.18
50 to 99	253	179	19	14	42	16.71
100 to 249	358	216	38	29	75	20.83
250 or More	364	121	85	Q	73	23.29

See footnotes at end of table.

Table B7. Consumption of Natural Gas by End Use, 1989 (Continued)

Building Characteristics RSE Column Factor:	Natural Gas Consumption (trillion Btu)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other ^a	
	1.0	NF	NF	NF	NF	
Ownership and Occupancy						
Nongovernment Owned	1,601	950	257	130	264	8.01
Owner Occupied.....	1,292	749	213	103	228	8.64
Single Establishment	1,083	622	181	83	197	10.40
Multiple Establishment.....	210	127	32	20	31	11.20
Nonowner Occupied.....	309	201	44	27	36	14.72
Single Establishment	176	123	18	15	20	22.17
Multiple Establishment.....	102	62	21	12	7	16.89
Vacant	Q	17	Q	Q	Q	NF
Government Owned	472	315	63	Q	26	15.34
Federal	Q	16	5	Q	Q	NF
State	112	79	18	4	11	21.52
Local	290	220	40	17	13	12.64
Multibuilding Facility						
Not on Multibuilding Facility.....	1,168	765	175	80	147	7.35
Part of Multibuilding Facility	905	500	145	118	143	12.68
On Facility with Central Plant	423	182	66	Q	90	24.78
Percent Vacant at Least Three Months						
0	1,562	988	257	119	198	7.65
1 to 50	324	178	41	29	76	17.42
51 to 99	Q	47	5	Q	4	NF
100	82	52	16	1	Q	29.05
Months in Use Out of Past 12 Months						
0 to 8	72	42	16	9	4	18.41
9 to 11	138	106	16	2	Q	21.43
12	1,863	1,117	288	187	271	7.43
LOCATION						
Census Region						
Northeast.....	353	235	52	30	Q	17.15
Midwest	831	579	101	46	105	10.12
South.....	498	263	84	42	108	17.83
West.....	391	189	82	Q	41	14.77
Census Division						
Northeast						
New England.....	39	19	Q	Q	4	22.84
Middle Atlantic	314	215	40	26	Q	19.38
Midwest						
East North Central.....	561	398	73	36	54	12.18
West North Central	270	180	28	11	Q	20.01
South						
South Atlantic.....	198	106	24	15	Q	31.50
East South Central.....	126	64	Q	9	28	29.22
West South Central	174	94	34	19	27	19.57
West						
Mountain.....	197	97	28	Q	13	25.75
Pacific	195	91	54	21	28	14.77
Metropolitan Status						
Metropolitan	1,608	939	254	176	239	7.68
Nonmetropolitan.....	465	326	66	22	51	18.83

See footnotes at end of table.

Table B7. Consumption of Natural Gas by End Use, 1989 (Continued)

Building Characteristics RSE Column Factor:	Natural Gas Consumption (trillion Btu)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other ^a	
	1.0	NF	NF	NF	NF	
Climate Zone: 45-Year Average						
Under 2,000 CDD and --						
Over 7,000 HDD	252	178	39	11	25	21.64
5,500-7,000 HDD	850	579	94	Q	81	12.19
4,000-5,499 HDD	407	224	67	38	Q	19.13
Under 4,000 HDD	350	189	67	31	63	20.00
2,000 CDD or More and --						
Under 4,000 HDD	213	96	54	22	42	20.93
1989 Degree-Days						
Under 2,000 CDD and --						
Over 7,000 HDD	375	279	44	21	32	19.70
5,500-7,000 HDD	953	593	123	Q	139	13.89
4,000-5,499 HDD	209	124	39	31	16	14.77
Under 4,000 HDD	339	184	64	28	63	22.18
2,000 CDD or More and --						
Under 4,000 HDD	197	85	50	20	41	21.84
STRUCTURE						
Floors						
1	732	485	104	53	90	9.75
2	560	360	75	31	95	12.14
3	252	192	26	11	24	8.21
4 to 6	331	161	70	Q	32	22.31
7 or More	197	68	46	34	Q	26.51
Wall Materials						
Masonry	1,509	943	238	122	205	7.85
Siding or Shingles	120	73	26	10	11	12.43
Metal Panels	185	129	15	3	38	30.61
Concrete Panels	180	75	22	Q	30	31.77
Window Glass	49	28	Q	Q	4	34.55
Other	30	17	Q	2	Q	41.46
Roof Materials						
Built-Up	1,052	630	164	121	137	10.12
Shingles (Not Wood)	333	216	56	25	35	13.38
Metal Surfacing	226	160	16	7	43	25.15
Synthetic or Rubber	259	155	50	20	35	15.37
Slate or Tile	86	51	15	16	5	17.67
Concrete	23	12	9	1	1	29.11
Wooden Materials	29	19	5	3	2	24.30
Other	Q	22	Q	Q	Q	NF
Building Shell Conservation						
Features (Solely or in Combination)						
Roof or Ceiling Insulation	1,571	943	257	161	209	8.65
Wall Insulation	1,096	629	170	127	170	10.85
Storm or Multiple Glazing	959	577	181	85	116	8.43
Tinted, Reflective, or Shading Glass	769	414	119	Q	130	12.15
Exterior or Interior Shadings or Awnings	878	498	136	124	119	10.00
Weather Stripping or Caulking	1,553	950	251	173	179	7.32
None of the Above	141	76	23	9	Q	21.93

See footnotes at end of table.

Table B7. Consumption of Natural Gas by End Use, 1989 (Continued)

Building Characteristics RSE Column Factor:	Natural Gas Consumption (trillion Btu)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other ^a	
	1.0	NF	NF	NF	NF	
ENERGY SOURCES AND END USES						
Energy Sources (Solely or in Combination)						
Electricity	2,068	1,264	319	198	288	7.38
Natural Gas.....	2,073	1,265	320	198	290	7.27
Fuel Oil.....	427	206	94	42	85	20.36
District Heat	Q	Q	11	Q	Q	NF
Other	198	94	21	Q	Q	39.94
Energy End Uses (Solely or in Combination)						
Heated Buildings.....	2,051	1,262	309	195	286	7.36
Air-Conditioned Buildings.....	1,780	1,045	285	191	260	7.46
Buildings with Water Heating	1,960	1,171	320	196	273	7.40
Buildings with Cooking	975	478	199	198	100	9.69
Buildings with Manufacturing	286	144	12	Q	81	28.43
Space-Heating Energy Source						
Natural Gas.....	1,856	1,236	257	102	261	7.44
Main.....	1,778	1,195	247	98	238	7.62
With Secondary	560	318	99	26	116	16.72
Electricity Only.....	156	100	17	5	Q	19.84
Other Energy Sources or Combinations.....	360	192	78	20	70	20.36
With No Secondary	1,218	877	148	72	122	6.47
Secondary	78	41	Q	4	23	30.02
Other Excluding Natural Gas	195	26	51	Q	25	29.19
Building Not Heated	22	Q	11	Q	4	27.76
Main Space-Heating Energy Source						
Electricity	170	54	51	29	36	17.17
Natural Gas.....	1,778	1,195	247	98	238	7.62
Fuel Oil.....	25	8	Q	4	2	NF
District Heat	Q	Q	9	Q	Q	99.99
Other	6	Q	*	Q	Q	42.65
Water-Heating Energy Source						
Natural Gas.....	1,451	878	320	100	153	7.09
Other Excluding Natural Gas	509	293	NC	Q	120	17.70
Water Heating Not Performed.....	113	94	NC	2	Q	18.63
HEATING AND COOLING						
Percent Heated						
Not Heated	23	Q	12	Q	4	26.91
1 to 50	128	80	19	5	25	11.38
51 to 99	274	170	44	19	41	19.77
100	1,648	1,011	245	171	220	7.63
Percent Cooled						
Not Cooled	293	220	35	7	30	22.25
1 to 50	616	451	46	17	103	13.11
51 to 99	424	219	96	56	54	11.23
100	740	375	143	118	103	11.26

See footnotes at end of table.

Table B7. Consumption of Natural Gas by End Use, 1989 (Continued)

Building Characteristics	Natural Gas Consumption (trillion Btu)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other ^a	
	1.0	NF	NF	NF	NF	
RSE Column Factor:						
Heating Equipment (Solely or in Combination)						
Furnaces.....	680	455	84	38	103	12.58
Boilers.....	1,043	667	178	55	144	9.35
Individual Space Heaters	787	455	103	Q	148	13.62
Packaged Heating Units.....	593	336	83	56	117	11.11
Heat Pumps	248	118	44	19	67	18.67
Air Ducts	1,367	771	220	161	216	9.79
Heating or Reheating Coils	629	303	113	Q	117	15.71
Fan-Coil Units.....	551	281	99	Q	80	14.63
Steam or Hot Water Radiators or Baseboards.....	776	453	107	Q	116	NF
Other	Q	35	10	3	Q	99.99
Cooling Equipment (Solely or in Combination)						
Central Chillers	574	253	118	Q	95	15.44
Individual Air Conditioners	719	455	122	52	90	10.36
Packaged Cooling Units.....	1,257	758	191	156	152	8.58
Heat Pumps	239	114	36	22	68	20.17
Air Ducts	1,268	709	216	157	185	9.01
Fan-Coil Units.....	452	187	98	Q	71	NF
Other	Q	12	Q	Q	Q	99.99
ENERGY MANAGEMENT						
Occupant Control						
Any Control of Heating.....	895	535	153	78	129	8.28
With Thermostats	825	486	143	70	126	8.81
Any Control of Cooling.....	868	510	157	79	122	8.45
With Thermostats	784	452	138	74	119	9.13
Reduced Use During Off-Hours						
Heating Only	279	208	32	10	29	21.37
Cooling Only	150	73	16	Q	Q	20.03
Heating and Cooling	1,214	767	149	128	171	8.89
Computerized Energy Management and Control System						
Present in Building.....	495	242	82	Q	87	15.47
Controls Heating and Cooling	481	237	77	Q	84	16.09
Controls Lighting	143	49	14	Q	Q	40.75
Controls Other	120	50	17	8	Q	45.83
Other Energy Management						
Regular HVAC Maintenance.....	1,631	964	258	161	248	8.43
Participated in Utility Conservation Program.....	404	235	74	37	58	15.03

^a Includes cooling.

* = Value rounds to zero in the units displayed.

NF = No cases in responding sample.

NF = No applicable RSE row/column factor.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B8. Energy End-Use Intensities for Natural Gas, 1989

Building Characteristics RSE Column Factor:	Energy Intensity for Natural Gas (thousand Btu per sq. ft.)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other ^a	
	1.0	NF	NF	NF	NF	
All Buildings	50.4	30.7	7.8	4.8	7.0	5.91
Building Floorspace (Square Feet)						
1,001 to 5,000	88.3	53.5	18.0	10.2	6.7	4.96
5,001 to 10,000	67.1	43.9	11.0	2.9	9.3	11.63
10,001 to 25,000	48.3	34.7	7.4	2.0	4.1	6.51
25,001 to 50,000	56.7	38.0	5.7	2.7	10.2	11.69
50,001 to 100,000	40.1	29.9	5.0	1.9	3.3	9.67
100,001 to 200,000	39.6	25.4	7.0	4.6	2.6	18.17
200,001 to 500,000	45.2	21.8	8.4	3.3	Q	26.13
Over 500,000	38.5	10.0	4.9	Q	Q	29.95
Year Constructed						
1899 or Before	52.3	42.6	5.1	2.3	2.3	19.97
1900 to 1919	40.2	24.0	3.8	Q	Q	30.69
1920 to 1945	42.5	27.0	3.4	3.4	Q	15.03
1946 to 1959	56.8	32.3	9.8	Q	6.4	11.28
1960 to 1969	54.0	36.4	7.3	3.0	7.3	10.14
1970 to 1979	54.4	32.2	10.7	6.1	5.4	13.87
1980 to 1983	53.6	27.8	9.4	4.8	11.6	12.66
1984 to 1986	40.9	22.9	8.4	4.0	5.6	18.94
1987 to 1989	45.4	26.8	7.7	5.5	Q	19.37
BUILDING USE						
Principal Building Activity						
Assembly	40.4	31.4	3.0	4.0	1.9	11.33
Education	48.7	35.6	2.2	Q	3.0	11.47
Food Sales	49.8	24.6	1.5	22.6	1.0	16.88
Food Service	156.4	44.8	53.3	49.9	8.5	9.53
Health Care	116.3	28.4	44.5	18.2	Q	10.48
Lodging	73.7	30.7	33.0	6.6	3.4	11.94
Mercantile and Service	47.4	31.3	5.4	2.2	8.6	10.21
Office	33.0	23.7	3.7	.6	4.9	11.19
Parking Garage	37.6	28.2	Q	Q	Q	47.02
Public Order and Safety	55.7	48.8	Q	Q	2.6	33.93
Warehouse	40.2	30.5	.7	Q	Q	22.86
Other	109.1	61.2	6.3	Q	36.9	18.36
Vacant	Q	16.2	Q	Q	Q	NF
Weekly Operating Hours						
39 or Fewer	38.0	32.4	2.9	.9	1.8	9.06
40 to 48	42.3	33.7	3.0	.8	4.8	8.15
49 to 60	38.5	28.9	2.7	Q	5.5	9.40
61 to 84	43.0	26.6	5.9	4.3	6.2	11.28
85 to 167	54.8	29.3	6.7	13.1	5.7	16.39
168 (Open Continuously)	87.7	34.9	26.8	8.8	17.1	11.18
Workers						
4 or Fewer	44.6	32.7	7.6	1.8	2.4	11.29
5 to 9	42.0	28.0	7.3	3.4	3.3	9.37
10 to 19	55.7	35.3	8.9	4.0	7.4	9.10
20 to 49	50.2	34.4	7.3	3.3	5.2	9.29
50 to 99	47.3	33.4	3.6	2.6	7.8	16.09
100 to 249	71.0	42.8	7.6	5.8	14.8	14.03
250 or More	46.9	15.5	10.9	Q	9.4	14.93

See footnote at end of table.

Table B8. Energy End-Use Intensities for Natural Gas, 1989 (Continued)

Building Characteristics RSE Column Factor:	Energy Intensity for Natural Gas (thousand Btu per sq. ft.)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other ^a	
	1.0	NF	NF	NF	NF	
Ownership and Occupancy						
Nongovernment Owned	50.5	30.0	8.1	4.1	8.3	6.61
Owner Occupied.....	54.7	31.7	9.0	4.4	9.6	7.13
Single Establishment	63.1	36.2	10.6	4.8	11.5	8.68
Multiple Establishment.....	32.4	19.6	4.9	3.1	4.7	13.59
Nonowner Occupied.....	38.3	24.9	5.4	3.4	4.5	14.39
Single Establishment	41.0	28.7	4.3	3.5	4.6	20.79
Multiple Establishment.....	29.0	17.6	5.9	3.4	2.1	15.42
Vacant	Q	60.2	Q	Q	Q	NF
Government Owned	50.0	33.4	6.7	Q	2.8	10.45
Federal	76.3	17.3	5.4	51.8	Q	17.88
State	48.3	34.0	7.8	1.7	4.8	18.59
Local	46.8	35.5	6.4	2.7	2.1	10.58
Multibuilding Facility						
Not on Multibuilding Facility.....	44.7	29.3	6.7	3.1	5.6	7.06
Part of Multibuilding Facility	60.3	33.3	9.6	7.9	9.5	7.85
On Facility with Central Plant	91.4	39.4	14.3	18.3	19.5	13.32
Percent Vacant at Least Three Months						
0	56.9	36.0	9.4	4.3	7.2	6.21
1 to 50	35.1	19.3	4.5	3.1	8.3	15.18
51 to 99	36.8	16.6	1.7	Q	1.3	36.19
100	51.6	32.9	10.3	.7	Q	27.59
Months in Use Out of Past 12 Months						
0 to 8	41.3	24.2	9.4	5.3	2.4	16.22
9 to 11	52.4	40.2	5.9	.7	Q	17.23
12	50.7	30.4	7.8	5.1	7.4	6.57
LOCATION						
Census Region						
Northeast.....	41.5	27.5	6.1	3.5	4.2	15.13
Midwest	64.8	45.1	7.9	3.6	8.2	8.71
South.....	42.7	22.6	7.2	3.6	9.3	13.83
West.....	48.0	23.1	10.1	Q	5.1	7.97
Census Division						
Northeast						
New England.....	31.8	15.7	Q	Q	3.6	24.95
Middle Atlantic	43.1	29.5	5.6	3.6	4.3	17.07
Midwest						
East North Central.....	63.8	45.3	8.3	4.1	6.2	11.99
West North Central	67.2	44.9	7.1	2.7	12.5	11.90
South						
South Atlantic.....	46.7	24.9	5.8	3.4	12.6	22.34
East South Central.....	61.8	31.4	Q	4.3	13.6	22.35
West South Central	32.3	17.4	6.3	3.5	5.0	18.59
West						
Mountain.....	63.0	31.1	9.0	Q	4.2	10.42
Pacific	38.7	18.2	10.8	4.1	5.6	8.85
Metropolitan Status						
Metropolitan	46.9	27.4	7.4	5.1	7.0	6.90
Nonmetropolitan.....	67.7	47.5	9.7	3.2	7.4	9.34

See footnote at end of table.

Table B8. Energy End-Use Intensities for Natural Gas, 1989 (Continued)

Building Characteristics RSE Column Factor:	Energy Intensity for Natural Gas (thousand Btu per sq. ft.)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other ^a	
	1.0	NF	NF	NF	NF	
Climate Zone: 45-Year Average						
Under 2,000 CDD and --						
Over 7,000 HDD	82.4	57.9	12.6	3.6	8.2	9.60
5,500-7,000 HDD	61.2	41.6	6.8	Q	5.8	8.27
4,000-5,499 HDD	42.1	23.1	6.9	3.9	8.2	14.31
Under 4,000 HDD	41.5	22.5	7.9	3.6	7.5	16.17
2,000 CDD or More and --						
Under 4,000 HDD	35.1	15.7	8.8	3.6	7.0	14.18
1989 Degree-Days						
Under 2,000 CDD and --						
Over 7,000 HDD	73.3	54.5	8.5	4.0	6.2	7.61
5,500-7,000 HDD	57.4	35.7	7.4	Q	8.4	9.10
4,000-5,499 HDD	35.1	20.8	6.5	5.2	2.6	14.74
Under 4,000 HDD	42.8	23.3	8.1	3.6	7.9	14.87
2,000 CDD or More and --						
Under 4,000 HDD	35.5	15.4	9.1	3.6	7.4	14.95
STRUCTURE						
Floors						
1	52.9	35.1	7.5	3.8	6.5	7.95
2	51.0	32.8	6.8	2.8	8.7	11.59
3	44.1	33.5	4.5	2.0	4.2	12.14
4 to 6	54.8	26.6	11.5	Q	5.3	12.43
7 or More	43.0	14.9	10.1	7.5	Q	22.83
Wall Materials						
Masonry	51.4	32.1	8.1	4.2	7.0	6.74
Siding or Shingles	51.0	31.2	11.1	4.2	4.5	16.44
Metal Panels	69.6	48.5	5.6	1.2	14.4	27.30
Concrete Panels	36.9	15.3	4.5	Q	6.0	19.00
Window Glass	Q	22.5	Q	Q	Q	NF
Other	45.1	25.6	12.3	3.5	Q	30.14
Roof Materials						
Built-Up	47.9	28.7	7.5	5.5	6.2	9.53
Shingles (Not Wood)	47.5	30.8	8.0	3.6	5.1	9.81
Metal Surfacing	59.6	42.1	4.1	2.0	11.4	21.21
Synthetic or Rubber	58.4	35.0	11.2	4.4	7.8	10.03
Slate or Tile	46.5	27.3	8.1	8.5	2.6	14.87
Concrete	Q	Q	Q	Q	Q	NF
Wooden Materials	59.4	39.0	9.4	Q	4.7	17.71
Other	115.7	39.7	Q	Q	57.3	14.38
Building Shell Conservation						
Features (Solely or in Combination)						
Roof or Ceiling Insulation	52.8	31.7	8.7	5.4	7.0	6.34
Wall Insulation	55.8	32.0	8.7	6.5	8.6	7.33
Storm or Multiple Glazing	56.2	33.8	10.6	5.0	6.8	6.97
Tinted, Reflective, or Shading Glass	49.7	26.7	7.7	6.9	8.4	8.94
Exterior or Interior Shadings or Awnings	47.7	27.0	7.4	6.8	6.5	6.29
Weather Stripping or Caulking	51.3	31.4	8.3	5.7	5.9	5.60
None of the Above	36.5	19.5	5.9	2.2	Q	26.50

See footnote at end of table.

Table B8. Energy End-Use Intensities for Natural Gas, 1989 (Continued)

Building Characteristics RSE Column Factor:	Energy Intensity for Natural Gas (thousand Btu per sq. ft.)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other ^a	
	1.0	NF	NF	NF	NF	
ENERGY SOURCES AND END USES						
Energy Sources (Solely or in Combination)						
Electricity	50.3	30.7	7.8	4.8	7.0	6.08
Natural Gas.....	50.4	30.7	7.8	4.8	7.0	5.91
Fuel Oil.....	54.3	26.2	11.9	5.4	10.8	15.95
District Heat	48.1	Q	3.2	Q	Q	29.19
Other	59.7	28.3	6.2	Q	Q	23.41
Energy End Uses (Solely or in Combination)						
Heated Buildings.....	50.3	30.9	7.6	4.8	7.0	5.96
Air-Conditioned Buildings.....	48.5	28.5	7.8	5.2	7.1	6.74
Buildings with Water Heating	51.0	30.5	8.3	5.1	7.1	5.94
Buildings with Cooking	51.7	25.3	10.5	10.5	5.3	7.77
Buildings with Manufacturing	75.8	38.1	3.2	Q	21.6	20.56
Space-Heating Energy Source						
Natural Gas.....	56.2	37.4	7.8	3.1	7.9	6.26
Main.....	57.2	38.4	7.9	3.1	7.7	6.34
With Secondary	71.0	40.4	12.6	3.3	14.7	13.12
Electricity Only.....	43.1	27.7	4.6	1.5	Q	18.22
Other Energy Sources or Combinations.....	87.0	46.4	18.8	5.0	16.8	15.17
With No Secondary	52.5	37.8	6.4	3.1	5.2	6.89
Secondary	41.0	21.5	Q	2.3	11.9	22.95
Other Excluding Natural Gas	25.0	3.3	6.6	Q	3.3	22.18
Building Not Heated	63.4	Q	33.0	9.2	Q	32.96
Main Space-Heating Energy Source						
Electricity	33.2	10.7	10.0	5.6	7.0	16.51
Natural Gas.....	57.2	38.4	7.9	3.1	7.7	6.34
Fuel Oil.....	12.3	4.0	Q	2.0	1.1	20.40
District Heat	37.7	Q	3.1	23.8	Q	30.92
Other	21.0	Q	Q	Q	Q	39.84
Water-Heating Energy Source						
Natural Gas.....	56.0	33.9	12.3	3.9	5.9	5.93
Other Excluding Natural Gas	40.7	23.4	NC	Q	9.6	12.92
Water Heating Not Performed.....	41.7	34.7	NC	Q	6.4	15.03
HEATING AND COOLING						
Percent Heated						
Not Heated	56.8	Q	29.7	7.8	9.4	27.51
1 to 50	21.4	13.4	3.1	.8	4.1	15.30
51 to 99	46.1	28.5	7.5	3.1	7.0	16.28
100	57.2	35.1	8.5	5.9	7.6	5.78
Percent Cooled						
Not Cooled	65.5	49.3	7.9	1.6	6.7	16.40
1 to 50	46.6	34.1	3.5	1.3	7.8	13.34
51 to 99	46.3	23.9	10.5	6.1	5.9	10.16
100	51.8	26.2	10.0	8.3	7.2	8.57

See footnotes at end of table.

Table B8. Energy End-Use Intensities for Natural Gas, 1989 (Continued)

Building Characteristics RSE Column Factor:	Energy Intensity for Natural Gas (thousand Btu per sq. ft.)					RSE Row Factor
	Total	Space Heating	Water Heating	Cooking	Other ^a	
	1.0	NF	NF	NF	NF	
Heating Equipment (Solely or in Combination)						
Furnaces.....	54.3	36.3	6.7	3.0	8.3	9.16
Boilers.....	64.0	40.9	10.9	3.4	8.8	7.63
Individual Space Heaters	48.3	27.9	6.3	Q	9.1	10.28
Packaged Heating Units.....	49.5	28.1	7.0	4.7	9.8	10.39
Heat Pumps	50.6	24.0	8.9	3.9	13.7	19.19
Air Ducts	50.4	28.4	8.1	5.9	8.0	7.20
Heating or Reheating Coils	55.2	26.6	9.9	Q	10.3	10.94
Fan-Coil Units.....	56.9	29.0	10.2	Q	8.3	9.84
Steam or Hot Water Radiators or Baseboards.....	62.7	36.6	8.6	Q	9.4	11.87
Other	76.5	32.0	8.8	2.8	Q	27.31
Cooling Equipment (Solely or in Combination)						
Central Chillers	51.9	22.8	10.6	9.9	8.6	11.23
Individual Air Conditioners	49.6	31.4	8.4	3.6	6.2	12.42
Packaged Cooling Units.....	47.6	28.7	7.2	5.9	5.8	8.07
Heat Pumps	52.6	25.0	7.9	4.8	14.9	16.86
Air Ducts	50.4	28.2	8.6	6.3	7.4	7.27
Fan-Coil Units.....	54.8	22.6	11.9	11.8	8.6	11.97
Other	71.2	11.3	Q	46.6	Q	16.81
ENERGY MANAGEMENT						
Occupant Control						
Any Control of Heating.....	46.9	28.0	8.0	4.1	6.8	9.26
With Thermostats	47.2	27.7	8.2	4.0	7.2	9.69
Any Control of Cooling.....	45.7	26.8	8.3	4.2	6.4	9.70
With Thermostats	45.5	26.2	8.0	4.3	6.9	10.05
Reduced Use During Off-Hours						
Heating Only	63.6	47.5	7.3	2.3	6.6	14.68
Cooling Only	62.5	30.5	6.5	Q	Q	26.27
Heating and Cooling	42.9	27.1	5.2	4.5	6.0	8.07
Computerized Energy Management and Control System						
Present in Building.....	46.6	22.8	7.7	Q	8.2	10.11
Controls Heating and Cooling	47.3	23.4	7.6	Q	8.3	9.93
Controls Lighting	45.5	15.7	4.6	Q	Q	19.83
Controls Other	62.1	25.6	8.5	3.9	24.1	25.24
Other Energy Management						
Regular HVAC Maintenance.....	54.7	32.3	8.7	5.4	8.3	6.21
Participated in Utility Conservation Program.....	55.7	32.5	10.2	5.1	8.0	12.22

^a Includes cooling.

NC = No cases in responding sample.

NF = No applicable RSE row/column factor.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.

Table B9. End-Use Consumption Percentages for Natural Gas, 1989

Building Characteristics	Percent of Natural Gas Consumption				
	Total	Space Heating	Water Heating	Cooking	Other ^a
All Buildings	100	61	15	10	14
Building Floorspace (Square Feet)					
1,001 to 5,000	100	61	20	12	8
5,001 to 10,000	100	65	16	4	14
10,001 to 25,000	100	72	15	4	9
25,001 to 50,000	100	67	10	5	18
50,001 to 100,000	100	75	12	5	8
100,001 to 200,000	100	64	18	12	7
200,001 to 500,000	100	48	19	7	26
Over 500,000	100	26	13	34	27
Year Constructed					
1899 or Before	100	81	10	4	4
1900 to 1919	100	60	10	6	Q
1920 to 1945	100	64	8	8	20
1946 to 1959	100	57	17	Q	11
1960 to 1969	100	67	14	5	14
1970 to 1979	100	59	20	11	10
1980 to 1983	100	52	18	9	22
1984 to 1986	100	56	21	10	14
1987 to 1989	100	59	17	12	12
BUILDING USE					
Principal Building Activity					
Assembly	100	78	7	10	5
Education	100	73	5	Q	6
Food Sales	100	49	3	45	2
Food Service	100	29	34	32	5
Health Care	100	24	38	16	Q
Lodging	100	42	45	9	5
Mercantile and Service	100	66	11	5	18
Office	100	72	11	2	15
Parking Garage	100	75	Q	Q	Q
Public Order and Safety	100	88	5	Q	5
Warehouse	100	76	2	*	22
Other	100	56	6	Q	34
Vacant	100	63	12	Q	23
Weekly Operating Hours					
39 or Fewer	100	85	8	2	5
40 to 48	100	80	7	2	11
49 to 60	100	75	7	4	14
61 to 84	100	62	14	10	14
85 to 167	100	53	12	24	10
168 (Open Continuously)	100	40	31	10	19
Workers					
4 or Fewer	100	73	17	4	5
5 to 9	100	67	17	8	8
10 to 19	100	63	16	7	13
20 to 49	100	69	15	6	10
50 to 99	100	71	8	5	16
100 to 249	100	60	11	8	21
250 or More	100	33	23	24	20

See footnotes at end of table.

Table B9. End-Use Consumption Percentages for Natural Gas, 1989 (Continued)

Building Characteristics	Percent of Natural Gas Consumption				
	Total	Space Heating	Water Heating	Cooking	Other ^a
Ownership and Occupancy					
Nongovernment Owned	100	59	16	8	16
Owner Occupied.....	100	58	16	8	18
Single Establishment	100	57	17	8	18
Multiple Establishment.....	100	61	15	10	15
Nonowner Occupied.....	100	65	14	9	12
Single Establishment	100	70	10	9	11
Multiple Establishment.....	100	61	20	12	7
Vacant	100	54	16	Q	30
Government Owned	100	67	13	Q	6
Federal	100	23	Q	68	Q
State	100	70	16	Q	10
Local	100	76	14	6	5
Multibuilding Facility					
Not on Multibuilding Facility.....	100	66	15	7	13
Part of Multibuilding Facility	100	55	16	13	16
On Facility with Central Plant	100	43	16	20	21
Percent Vacant at Least Three Months					
0	100	63	16	8	13
1 to 50	100	55	13	9	23
51 to 99	100	45	5	47	4
100	100	64	20	1	15
Months in Use Out of Past 12 Months					
0 to 8	100	59	23	13	6
9 to 11	100	77	11	1	11
12	100	60	15	10	15
LOCATION					
Census Region					
Northeast.....	100	66	15	9	10
Midwest	100	70	12	6	13
South.....	100	53	17	9	22
West.....	100	48	21	20	11
Census Division					
Northeast					
New England	100	49	30	9	11
Middle Atlantic	100	69	13	8	10
Midwest					
East North Central.....	100	71	13	6	10
West North Central	100	67	11	4	19
South					
South Atlantic.....	100	53	12	7	27
East South Central.....	100	51	20	7	22
West South Central	100	54	19	11	16
West					
Mountain.....	100	49	14	Q	7
Pacific	100	47	28	11	14
Metropolitan Status					
Metropolitan	100	58	16	11	15
Nonmetropolitan.....	100	70	14	5	11

See footnotes at end of table.

Table B9. End-Use Consumption Percentages for Natural Gas, 1989 (Continued)

Building Characteristics	Percent of Natural Gas Consumption				
	Total	Space Heating	Water Heating	Cooking	Other ^a
Climate Zone: 45-Year Average					
Under 2,000 CDD and --					
Over 7,000 HDD	100	70	15	4	10
5,500-7,000 HDD	100	68	11	11	9
4,000-5,499 HDD	100	55	16	9	19
Under 4,000 HDD	100	54	19	9	18
2,000 CDD or More and --					
Under 4,000 HDD	100	45	25	10	20
1989 Degree-Days					
Under 2,000 CDD and --					
Over 7,000 HDD	100	74	12	5	9
5,500-7,000 HDD	100	62	13	10	15
4,000-5,499 HDD	100	59	19	15	7
Under 4,000 HDD	100	54	19	8	18
2,000 CDD or More and --					
Under 4,000 HDD	100	43	26	10	21
STRUCTURE					
Floors					
1	100	66	14	7	12
2	100	64	13	5	17
3	100	76	10	4	9
4 to 6	100	49	21	Q	10
7 or More	100	35	23	17	25
Wall Materials					
Masonry	100	62	16	8	14
Siding or Shingles	100	61	22	8	9
Metal Panels	100	70	8	2	21
Concrete Panels	100	41	12	30	16
Window Glass	100	58	Q	13	8
Other	100	57	27	Q	Q
Roof Materials					
Built-Up	100	60	16	12	13
Shingles (Not Wood)	100	65	17	8	11
Metal Surfacing	100	71	7	3	19
Synthetic or Rubber	100	60	19	8	13
Slate or Tile	100	59	17	18	6
Concrete	100	53	37	5	4
Wooden Materials	100	66	16	Q	8
Other	100	34	Q	Q	49
Building Shell Conservation					
Features (Solely or in Combination)					
Roof or Ceiling Insulation	100	60	16	10	13
Wall Insulation	100	57	16	12	15
Storm or Multiple Glazing	100	60	19	9	12
Tinted, Reflective, or Shading					
Glass	100	54	15	14	17
Exterior or Interior Shadings					
or Awnings	100	57	16	14	14
Weather Stripping or Caulking	100	61	16	11	11
None of the Above	100	53	16	6	Q

See footnotes at end of table.

Table B9. End-Use Consumption Percentages for Natural Gas, 1989 (Continued)

Building Characteristics	Percent of Natural Gas Consumption				
	Total	Space Heating	Water Heating	Cooking	Other ^a
ENERGY SOURCES AND END USES					
Energy Sources					
(Solely or in Combination)					
Electricity	100	61	15	10	14
Natural Gas.....	100	61	15	10	14
Fuel Oil.....	100	48	22	10	20
District Heat	100	25	7	42	26
Other.....	100	47	10	Q	14
Energy End Uses					
(Solely or in Combination)					
Heated Buildings.....	100	61	15	9	14
Air-Conditioned Buildings.....	100	59	16	11	15
Buildings with Water Heating.....	100	60	16	10	14
Buildings with Cooking.....	100	49	20	20	10
Buildings with Manufacturing.....	100	50	4	Q	28
Space-Heating Energy Source					
Natural Gas.....	100	67	14	6	14
Main.....	100	67	14	6	13
With Secondary	100	57	18	5	21
Electricity Only.....	100	64	11	3	Q
Other Energy Sources or					
Combinations.....	100	53	22	6	19
With No Secondary	100	72	12	6	10
Secondary	100	52	Q	6	29
Other Excluding Natural Gas	100	13	26	47	13
Building Not Heated	100	16	52	14	17
Main Space-Heating Energy Source					
Electricity	100	32	30	17	21
Natural Gas.....	100	67	14	6	13
Fuel Oil.....	100	32	44	16	9
District Heat	100	Q	8	63	10
Other.....	100	60	Q	Q	Q
Water-Heating Energy Source					
Natural Gas.....	100	60	22	7	11
Other Excluding Natural Gas	100	58	NC	19	24
Water Heating Not Performed.....	100	83	NC	Q	15
HEATING AND COOLING					
Percent Heated					
Not Heated	100	17	52	14	17
1 to 50	100	63	15	4	19
51 to 99	100	62	16	7	15
100	100	61	15	10	13
Percent Cooled					
Not Cooled	100	75	12	2	10
1 to 50	100	73	7	3	17
51 to 99	100	52	23	13	13
100	100	51	19	16	14
Heating Equipment					
(Solely or in Combination)					
Furnaces.....	100	67	12	6	15
Boilers.....	100	64	17	5	14
Individual Space Heaters	100	58	13	Q	19
Packaged Heating Units.....	100	57	14	9	20
Heat Pumps	100	48	18	8	27
Air Ducts	100	56	16	12	16
Heating or Reheating Coils	100	48	18	15	19
Fan-Coil Units.....	100	51	18	16	15
Steam or Hot Water Radiators					
or Baseboards.....	100	58	14	13	15
Other.....	100	42	11	4	43

See footnotes at end of table.

Table B9. End-Use Consumption Percentages for Natural Gas, 1989 (Continued)

Building Characteristics	Percent of Natural Gas Consumption				
	Total	Space Heating	Water Heating	Cooking	Other ^a
Cooling Equipment					
(Solely or in Combination)					
Central Chillers	100	44	20	19	17
Individual Air Conditioners	100	63	17	7	12
Packaged Cooling Units.....	100	60	15	12	12
Heat Pumps	100	48	15	9	28
Air Ducts	100	56	17	12	15
Fan-Coil Units	100	41	22	21	16
Other	100	16	Q	65	Q
ENERGY MANAGEMENT					
Occupant Control					
Any Control of Heating	100	60	17	9	14
With Thermostats	100	59	17	8	15
Any Control of Cooling.....	100	59	18	9	14
With Thermostats	100	58	18	9	15
Reduced Use During Off-Hours					
Heating Only	100	75	11	4	10
Cooling Only	100	49	10	11	30
Heating and Cooling	100	63	12	11	14
Computerized Energy Management and Control System					
Present in Building.....	100	49	16	17	18
Controls Heating and Cooling	100	49	16	17	18
Controls Lighting	100	35	10	41	14
Controls Other	100	41	14	6	39
Other Energy Management					
Regular HVAC Maintenance.....	100	59	16	10	15
Participated in Utility Conservation Program.....	100	58	18	9	14

^a Includes cooling.

* = Value rounds to zero in the units displayed.

NC = No cases in responding sample.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1989 Commercial Buildings Energy Consumption Survey.