

Table E8. Natural Gas Consumption (cubic feet) and Energy Intensities by End Use for Non-Mall Buildings, 2003

	Total Natural Gas Consumption (billion cubic feet)					Natural Gas Energy Intensity (cubic feet/square foot)				
	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,870	1,276	322	138	133	43.0	29.4	7.4	3.2	3.1
Building Floorspace (Square Feet)										
1,001 to 5,000	243	151	34	40	18	78.7	48.9	11.1	13.0	5.7
5,001 to 10,000	202	139	31	29	Q	54.8	37.6	8.5	7.9	Q
10,001 to 25,000	300	240	31	21	7	42.5	34.1	4.4	3.0	1.1
25,001 to 50,000	250	182	40	11	Q	41.5	30.2	6.6	1.9	Q
50,001 to 100,000	236	169	41	8	19	35.4	25.2	6.2	1.2	2.8
100,001 to 200,000	241	165	54	7	16	36.3	24.8	8.1	1.0	2.4
200,001 to 500,000	199	130	42	11	16	35.0	22.8	7.5	1.9	2.8
Over 500,000	198	101	48	11	38	43.0	22.0	10.4	2.3	8.3
Principal Building Activity										
Education	260	201	36	5	18	36.9	28.6	5.1	0.7	2.6
Food Sales	37	26	2	8	Q	50.2	34.5	3.1	10.9	Q
Food Service	197	53	54	89	Q	141.2	37.8	38.8	63.5	Q
Health Care	235	132	71	9	22	92.5	51.9	28.1	3.7	8.8
Inpatient	198	99	69	9	21	109.8	55.1	38.2	5.0	11.5
Outpatient	37	33	2	Q	Q	50.2	44.3	3.4	Q	Q
Lodging	208	62	121	14	Q	48.9	14.6	28.3	3.2	Q
Retail (Other Than Mall).....	89	81	3	2	2	30.9	28.4	1.0	0.8	0.7
Office	261	223	13	2	22	31.8	27.2	1.6	0.3	2.7
Public Assembly	99	89	2	3	Q	36.4	32.8	0.9	1.0	Q
Public Order and Safety	28	15	9	Q	Q	43.7	23.3	14.7	Q	Q
Religious Worship	80	74	2	3	Q	30.3	28.3	0.9	1.0	Q
Service	135	116	2	Q	17	54.1	46.3	0.9	Q	Q
Warehouse and Storage	128	108	4	Q	Q	23.4	19.6	0.7	Q	Q
Other	85	70	2	Q	11	67.6	56.1	1.6	Q	9.1
Vacant	27	25	Q	Q	Q	23.0	21.3	Q	Q	Q
Year Constructed										
Before 1920	139	110	12	15	Q	50.3	39.9	4.3	5.3	Q
1920 to 1945	223	145	23	18	36	47.6	31.1	5.0	3.8	7.7
1946 to 1959	210	154	33	11	12	45.1	33.0	7.1	2.3	2.6
1960 to 1969	248	181	44	10	13	44.0	32.1	7.8	1.8	2.3
1970 to 1979	341	237	66	21	17	44.5	30.9	8.7	2.8	2.2
1980 to 1989	282	174	66	21	22	43.7	26.9	10.1	3.2	3.4
1990 to 1999	305	198	53	29	25	37.2	24.2	6.5	3.5	3.0
2000 to 2003	123	77	26	14	6	35.8	22.3	7.5	4.1	1.8
Census Region and Division										
Northeast	415	301	47	29	38	45.2	32.8	5.1	3.2	4.1
New England	73	58	Q	Q	4	49.5	39.3	4.4	2.8	Q
Middle Atlantic	343	243	41	25	33	44.4	31.6	5.3	3.3	4.3
Midwest	683	538	78	28	40	51.9	40.9	5.9	2.1	3.0
East North Central	512	411	58	20	23	53.5	42.9	6.1	2.1	2.4
West North Central	171	127	19	8	Q	47.6	35.4	5.4	2.3	4.6
South	460	255	119	56	30	34.6	19.2	8.9	4.2	2.2
South Atlantic	210	111	54	27	18	33.2	17.6	8.6	4.2	2.8
East South Central	99	64	24	6	4	43.3	28.2	10.6	2.5	1.9
West South Central	151	80	40	23	8	32.2	17.0	8.6	5.0	1.6
West	311	182	78	24	26	39.8	23.3	10.0	3.1	3.3
Mountain	162	116	32	4	Q	57.9	41.6	11.6	1.3	Q
Pacific	149	66	46	21	17	29.7	13.1	9.2	4.1	3.3

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Table E8. Natural Gas Consumption (cubic feet) and Energy Intensities by End Use for Non-Mall Buildings, 2003

	Total Natural Gas Consumption (billion cubic feet)					Natural Gas Energy Intensity (cubic feet/square foot)				
	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,870	1,276	322	138	133	43.0	29.4	7.4	3.2	3.1
Climate Zone: 30-Year Average										
Under 2,000 CDD and --										
More than 7,000 HDD	418	345	44	15	15	54.7	45.1	5.8	1.9	1.9
5,500-7,000 HDD	659	496	90	35	38	51.3	38.6	7.0	2.7	3.0
4,000-5,499 HDD	327	207	51	27	42	40.3	25.5	6.3	3.3	5.1
Fewer than 4,000 HDD	347	187	89	40	31	33.0	17.8	8.4	3.8	3.0
2,000 CDD or More and --										
Fewer than 4,000 HDD	119	41	49	21	7	27.3	9.4	11.3	4.9	1.7
Number of Floors										
One	644	457	88	69	29	43.1	30.6	5.9	4.6	2.0
Two	476	355	59	26	36	41.6	31.1	5.1	2.3	3.1
Three	234	173	37	13	11	41.2	30.5	6.6	2.3	1.9
Four to Nine	367	226	88	20	34	47.9	29.4	11.5	2.6	4.4
Ten or More	149	66	50	9	24	39.8	17.5	13.3	2.5	6.4
Number of Workers (main shift)										
Fewer than 5	264	207	24	15	18	37.6	29.5	3.4	2.1	2.6
5 to 9	192	132	31	25	Q	47.1	32.2	7.6	6.2	Q
10 to 19	235	161	36	33	5	44.2	30.3	6.7	6.2	0.9
20 to 49	383	272	57	30	24	46.6	33.1	6.9	3.7	2.9
50 to 99	234	162	45	11	16	38.0	26.3	7.3	1.8	2.5
100 to 249	228	156	48	8	15	44.4	30.5	9.4	1.6	2.9
250 or More	334	186	82	15	51	44.2	24.6	10.9	1.9	6.8
Weekly Operating Hours										
Fewer than 40	104	91	Q	4	3	31.9	28.1	Q	1.3	0.8
40 to 48	242	213	10	6	12	35.0	30.9	1.5	0.8	1.8
49 to 60	363	295	25	17	25	35.6	28.9	2.5	1.7	2.5
61 to 84	305	224	29	29	23	40.8	30.0	3.8	3.9	3.0
85 to 167	249	156	35	44	14	47.7	29.8	6.8	8.4	2.7
Open Continuously	607	297	217	37	56	58.3	28.5	20.8	3.6	5.4
Ownership and Occupancy										
Nongovernment Owned.....	1,458	965	266	127	100	43.7	29.0	8.0	3.8	3.0
Owner Occupied	686	491	103	41	52	41.5	29.7	6.2	2.5	3.1
Nonowner Occupied	756	458	163	86	48	47.6	28.8	10.3	5.4	3.0
Unoccupied	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Government Owned	412	312	56	10	34	40.6	30.7	5.6	1.0	3.3
Federal	34	26	4	Q	2	31.4	24.2	3.9	Q	2.0
State	95	73	11	2	9	39.1	30.1	4.5	0.8	3.8
Local	283	212	41	7	22	42.6	32.0	6.2	1.1	3.3
Vacancy Status										
Completely Vacant	18	17	(*)	Q	Q	18.8	18.0	0.1	Q	Q
Mostly Vacant	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Partially Vacant	308	224	40	14	30	36.5	26.5	4.7	1.7	3.5
Not At All Vacant	1,534	1,027	282	123	102	45.3	30.4	8.3	3.6	3.0
Number of Establishments										
One	1,418	942	267	115	95	46.5	30.9	8.7	3.8	3.1
2 to 5	298	224	40	18	15	39.2	29.5	5.3	2.3	2.0
6 to 10	47	37	5	Q	Q	34.4	27.1	3.6	1.6	Q
11 to 20	33	26	Q	Q	Q	26.2	20.1	3.3	0.7	Q
More than 20	56	31	7	2	Q	31.4	17.3	3.6	1.1	Q
Currently Unoccupied	18	17	(*)	Q	Q	18.8	18.0	0.1	Q	Q

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	Total Natural Gas Consumption (billion cubic feet)					Natural Gas Energy Intensity (cubic feet/square foot)				
	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,870	1,276	322	138	133	43.0	29.4	7.4	3.2	3.1
Predominant Exterior Wall Material										
Brick, Stone or Stucco	1,093	728	197	91	78	46.4	30.9	8.4	3.8	3.3
Concrete (Block or Poured)	340	234	60	22	23	46.4	32.0	8.3	3.0	3.2
Concrete Panels	174	122	Q	8	16	37.3	26.1	6.0	1.7	3.4
Siding or Shingles	83	54	18	9	2	41.4	26.9	8.9	4.7	1.0
Metal Panels	126	103	7	5	12	31.4	25.5	1.7	1.2	2.9
Window Glass	14	9	2	Q	Q	20.2	13.4	3.5	Q	Q
Other	34	23	9	1	Q	37.6	25.2	9.7	1.6	Q
No One Major Type	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Predominant Roof Material										
Built-Up	720	475	134	46	66	47.4	31.2	8.8	3.0	4.4
Shingles (Not Wood)	301	207	51	28	Q	46.1	31.7	7.8	4.3	Q
Metal Surfacing	188	147	14	14	14	32.6	25.4	2.5	2.3	2.4
Synthetic or Rubber	526	366	93	31	35	44.4	30.9	7.9	2.6	3.0
Slate or Tile	65	39	15	9	Q	41.1	25.0	9.6	5.8	Q
Wooden Materials	20	11	7	Q	(*)	38.6	21.0	Q	Q	0.4
Concrete	23	11	5	Q	Q	Q	Q	Q	Q	Q
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
No One Major Type	16	12	1	Q	Q	42.0	30.8	3.4	Q	Q
Renovations in Buildings Constructed Before 1980 (more than one may apply)										
Any Type of Renovation										
Since 1980	663	460	114	39	50	50.0	34.7	8.6	2.9	3.8
Addition or Annex	295	196	63	13	23	58.6	38.9	12.5	2.5	4.7
Reduction In Floorspace	50	33	11	2	4	51.8	34.4	11.4	2.4	3.7
Cosmetic Improvements	482	333	81	32	36	47.8	33.1	8.1	3.1	3.5
Wall or Roof Replacement	270	191	45	12	21	42.6	30.2	7.1	2.0	3.4
Interior Wall										
Re-Configuration	331	236	54	14	27	47.2	33.6	7.7	2.0	3.9
HVAC Equipment Upgrade.....	453	306	85	24	38	53.4	36.1	10.1	2.8	4.4
Lighting Upgrade	386	278	63	20	25	47.6	34.3	7.7	2.5	3.0
Window Replacement	235	174	36	10	16	47.0	34.7	7.2	2.0	3.1
Plumbing System Upgrade	278	192	47	16	24	48.7	33.5	8.1	2.8	4.1
Insulation Upgrade	128	93	17	9	9	43.1	31.3	5.9	3.0	2.9
Other Renovation	25	15	Q	Q	Q	57.4	34.8	Q	Q	Q
No Renovations Since 1980.....	497	368	64	35	30	41.0	30.3	5.3	2.9	2.5
Building Newer than 1980	710	449	144	64	53	39.3	24.8	8.0	3.5	2.9
Energy Sources (more than one may apply)										
Electricity	1,869	1,276	322	138	133	43.0	29.4	7.4	3.2	3.1
Natural Gas	1,870	1,276	322	138	133	43.0	29.4	7.4	3.2	3.1
Fuel Oil	492	273	141	27	51	47.3	26.3	13.6	2.6	4.9
District Heat	46	23	10	6	6	18.7	9.6	4.0	2.6	2.4
District Chilled Water	34	20	8	Q	Q	19.2	11.2	4.5	Q	Q
Propane	103	62	26	6	9	41.7	25.1	10.5	2.5	3.7
Other	46	32	9	1	Q	50.7	35.6	9.7	1.6	Q
Space-Heating Energy Source^a										
Natural Gas	1,749	1,276	262	95	115	47.3	34.5	7.1	2.6	3.1
Natural Gas Main	1,636	1,212	233	83	107	49.6	36.8	7.1	2.5	3.3
Natural Gas Secondary	112	64	29	12	7	28.2	16.1	7.3	3.0	1.9
Other Excluding Natural Gas	103	(*)	56	37	10	17.2	(*)	9.3	6.2	1.7
Buildings without Heating	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q

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	Total Natural Gas Consumption (billion cubic feet)					Natural Gas Energy Intensity (cubic feet/square foot)				
	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,870	1,276	322	138	133	43.0	29.4	7.4	3.2	3.1
Primary Space-Heating Energy Source										
Electricity	171	46	76	35	13	27.8	7.5	12.4	5.7	2.1
Natural Gas	1,636	1,212	233	83	107	49.6	36.8	7.1	2.5	3.3
Fuel Oil	20	8	3	Q	Q	Q	Q	Q	Q	Q
District Heat	22	Q	5	6	3	10.5	Q	Q	2.9	Q
Propane	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Cooling Energy Source										
Natural Gas	89	37	15	2	36	87.6	36.5	14.3	1.9	34.9
Other Excluding Natural Gas	1,677	1,161	296	132	88	41.9	29.0	7.4	3.3	2.2
Buildings without Cooling	104	78	12	4	Q	42.4	32.0	4.9	1.6	Q
Water-Heating Energy Source										
Natural Gas	1,463	934	322	102	105	50.8	32.4	11.2	3.5	3.6
Other Excluding Natural Gas	350	290	(*)	35	25	28.5	23.5	(*)	2.8	2.1
Bldgs without Water Heating	56	52	(*)	Q	Q	23.9	22.4	(*)	Q	Q
Cooking Energy Source										
Natural Gas	830	409	225	138	59	53.8	26.5	14.6	8.9	3.8
Other Excluding Natural Gas	137	104	21	(*)	11	42.4	32.4	6.6	(*)	3.4
Buildings without Cooking	903	763	76	(*)	63	36.4	30.8	3.1	(*)	2.6
Energy End Uses (more than one may apply)										
Buildings with Space Heating	1,852	1,276	318	133	125	43.1	29.7	7.4	3.1	2.9
Buildings with Cooling	1,766	1,198	310	134	124	43.0	29.2	7.6	3.3	3.0
Buildings with Water Heating	1,814	1,224	322	137	130	44.1	29.8	7.8	3.3	3.2
Buildings with Cooking	967	513	246	138	70	51.8	27.5	13.2	7.4	3.7
Buildings with Manufacturing	97	61	4	Q	29	42.3	26.4	1.8	Q	12.8
Buildings with Electricity Generation	518	284	137	19	78	49.8	27.3	13.2	1.8	7.5
Percent of Floorspace Heated										
Not Heated	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
1 to 50	94	62	9	9	15	23.5	15.6	2.2	2.2	3.6
51 to 99	260	169	46	25	Q	43.6	28.4	7.7	4.2	Q
100	1,498	1,045	263	99	91	45.4	31.7	8.0	3.0	2.8
Percent of Floorspace Cooled										
Not Cooled	104	78	12	4	Q	42.4	32.0	4.9	1.6	Q
1 to 50	438	360	25	16	37	36.1	29.7	2.1	1.3	3.0
51 to 99	438	288	79	38	32	45.0	29.6	8.2	3.9	3.2
100	890	550	206	80	55	46.5	28.7	10.7	4.2	2.9
Heating Equipment (more than one may apply)										
Heat Pumps	217	106	73	16	23	39.1	19.1	13.1	2.9	4.1
Packaged Heat Pumps	135	63	49	10	Q	40.8	18.8	14.9	3.1	Q
Split-System Heat Pumps	41	23	11	Q	Q	28.2	15.9	7.6	Q	Q
Individual Room Heat Pumps ..	81	39	30	6	7	37.0	17.6	13.7	2.6	3.1
Furnaces	653	485	85	48	35	42.7	31.7	5.5	3.2	2.3
Individual Space Heaters	368	262	59	15	31	41.0	29.3	6.6	1.7	3.5
District Heat	38	18	10	6	Q	16.6	7.6	4.2	2.8	Q
Boilers	1,009	688	191	43	87	55.5	37.9	10.5	2.4	4.8
Packaged Heating Units	564	371	111	52	29	41.4	27.3	8.2	3.8	2.2
Other	46	37	4	2	2	25.5	20.8	2.5	0.9	1.4

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	Total Natural Gas Consumption (billion cubic feet)					Natural Gas Energy Intensity (cubic feet/square foot)				
	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,870	1,276	322	138	133	43.0	29.4	7.4	3.2	3.1
Cooling Equipment (more than one may apply)										
Residential-Type Central										
Air Conditioners	379	261	56	35	28	47.5	32.7	7.0	4.3	3.6
Heat Pumps	227	115	72	17	23	38.9	19.7	12.3	3.0	3.9
Packaged Heat Pumps	141	69	49	10	Q	42.1	20.6	14.5	3.1	Q
Split-System Heat Pumps	43	24	11	Q	Q	29.0	16.3	7.4	Q	Q
Individual Room Heat Pumps ..	83	40	30	6	7	34.7	16.8	12.6	2.4	2.9
Individual Air Conditioners	398	272	89	16	21	43.7	29.8	9.8	1.7	2.3
District Chilled Water	34	20	8	Q	Q	19.2	11.2	4.5	Q	Q
Central Chillers	486	287	117	17	64	53.4	31.5	12.9	1.9	7.1
Packaged Air Conditioning										
Units	1,057	740	166	86	65	44.4	31.1	7.0	3.6	2.7
Swamp Coolers	78	47	18	7	Q	61.7	36.9	14.3	5.3	Q
Other	51	32	Q	Q	3	62.8	40.1	Q	2.2	Q
Main Equipment Replaced Since 1990 (more than one may apply)										
Heating	587	414	101	35	37	47.8	33.7	8.2	2.9	3.0
Cooling	756	512	140	49	55	47.1	31.9	8.7	3.0	3.4
Water Heating Equipment										
Centralized System	1,189	797	214	103	76	46.9	31.4	8.4	4.0	3.0
Distributed System	247	195	19	20	13	32.7	25.8	2.5	2.6	1.7
Combination of Centralized and Distributed System	378	232	89	15	41	46.0	28.3	10.9	1.8	5.0
Energy-Related Space Functions (more than one may apply)										
Commercial Food Preparation....	966	513	246	138	69	51.8	27.5	13.2	7.4	3.7
Activities with Large Amounts of Hot Water	903	483	246	94	80	56.3	30.1	15.3	5.9	5.0
Separate Computer Area	849	571	164	35	79	41.2	27.7	7.9	1.7	3.8
HVAC Conservation Features (more than one may apply)										
Variable Air-Volume System.....	688	441	136	39	73	47.2	30.2	9.3	2.6	5.0
Economizer Cycle	781	526	149	37	68	46.9	31.6	9.0	2.2	4.1
HVAC Maintenance	1,609	1,081	298	117	113	43.5	29.2	8.1	3.2	3.1
Energy Management and Control System (EMCS)	463	303	90	21	49	39.8	26.1	7.8	1.8	4.3
Equipment Usage Reduced When Building Not In Full Use (more than one may apply)										
Heating	1,253	876	194	91	92	40.2	28.1	6.2	2.9	3.0
Cooling	1,249	856	197	101	95	39.7	27.2	6.3	3.2	3.0
Lighting	1,213	939	102	97	75	39.0	30.2	3.3	3.1	2.4
Office Equipment	462	369	37	28	29	36.5	29.1	2.9	2.2	2.3
Annual Consumption (hundred cubic feet)										
1,000 or Less	35	30	4	1	Q	8.2	6.8	0.9	0.3	Q
1,001 to 5,000	242	200	23	15	4	24.8	20.5	2.3	1.6	0.4
5,001 to 10,000	239	168	33	30	7	38.3	26.9	5.3	4.9	1.2
10,001 to 25,000	349	232	59	41	17	44.9	29.8	7.6	5.3	2.2
25,001 to 50,000	284	193	44	25	22	51.3	34.9	7.9	4.6	3.9
50,001 to 100,000	211	140	38	8	25	53.2	35.3	9.7	1.9	6.3
Over 100,000	510	314	121	17	58	86.8	53.5	20.6	2.8	9.8

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Table E8. Natural Gas Consumption (cubic feet) and Energy Intensities by End Use for Non-Mall Buildings, 2003

	Total Natural Gas Consumption (billion cubic feet)					Natural Gas Energy Intensity (cubic feet/square foot)				
	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,870	1,276	322	138	133	43.0	29.4	7.4	3.2	3.1
Provider of Natural Gas (more than one may apply)										
Local Utility	1,582	1,086	270	129	96	41.2	28.3	7.0	3.4	2.5
Some Other Provider	377	249	73	13	42	59.1	39.0	11.5	2.0	6.6

See "Guide to the Tables" or "Glossary" for further explanations of the terms used in this table. Both can be accessed from the CBECS web site - <http://www.eia.doe.gov/emeu/cbecs>.

* Figures in this table do not include enclosed malls and strip malls. In the 1999 CBECS, malls represented 3.8 percent of total natural gas consumption.

^a Total natural gas energy intensity in the "Other Excluding Natural Gas" row has been revised and value does not match published value in consumption Table C24 (http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html).

(*)=Value rounds to zero in the units displayed.

Q=Data withheld because fewer than 20 buildings were sampled for any cell, or because the Relative Standard Error (RSE) was greater than 50 percent for a cell in the "Total" column.

Notes: • Due to rounding, data may not sum to totals. • HVAC = Heating, Ventilation, and Air Conditioning.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A, C, and E of the 2003 Commercial Buildings Energy Consumption Survey.