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Table E7. Natural Gas Consumption (Btu) and Energy Intensities by End Use for Non-Mall Buildings, 2003

	Total Natural Gas Consumption (trillion Btu)					Natural Gas Energy Intensity (thousand Btu/square foot)				
	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,928	1,316	332	142	137	44.3	30.3	7.6	3.3	3.2
Building Floorspace (Square Feet)										
1,001 to 5,000	250	155	35	41	18	81.1	50.4	11.5	13.4	5.9
5,001 to 10,000	209	143	32	30	Q	56.5	38.8	8.7	8.2	Q
10,001 to 25,000	309	248	32	22	8	43.9	35.1	4.6	3.1	1.1
25,001 to 50,000	258	188	41	12	Q	42.7	31.1	6.8	2.0	Q
50,001 to 100,000	244	174	43	8	19	36.5	26.0	6.4	1.2	2.9
100,001 to 200,000	249	170	56	7	16	37.5	25.6	8.4	1.0	2.5
200,001 to 500,000	205	134	44	11	16	36.1	23.5	7.7	2.0	2.9
Over 500,000	204	105	49	11	40	44.3	22.7	10.7	2.4	8.6
Principal Building Activity										
Education	268	207	37	5	19	38.1	29.5	5.2	0.7	2.7
Food Sales	39	27	2	8	Q	51.7	35.6	3.2	11.2	Q
Food Service	203	54	56	91	Q	145.6	39.0	40.0	65.4	Q
Health Care	243	136	74	10	23	95.3	53.6	28.9	3.8	9.1
Inpatient	204	103	71	9	21	113.2	56.8	39.4	5.2	11.9
Outpatient	38	34	3	Q	Q	51.8	45.6	3.5	Q	Q
Lodging	215	64	124	14	Q	50.4	15.0	29.2	3.3	Q
Retail (Other Than Mall)	91	84	3	3	2	31.9	29.3	1.0	0.9	0.7
Office	269	230	13	3	23	32.8	28.1	1.6	0.3	2.8
Public Assembly	102	92	2	3	Q	37.5	33.8	0.9	1.0	Q
Public Order and Safety	29	15	10	Q	Q	45.0	24.1	15.1	Q	Q
Religious Worship	82	77	2	3	Q	31.2	29.1	0.9	1.0	Q
Service	139	119	2	Q	17	55.8	47.8	0.9	Q	Q
Warehouse and Storage	132	111	4	Q	Q	24.1	20.2	0.7	Q	Q
Other	87	72	2	Q	12	69.7	57.9	1.7	Q	9.4
Vacant	28	26	Q	Q	Q	23.7	22.0	Q	Q	Q
Year Constructed										
Before 1920	143	114	12	15	Q	51.9	41.2	4.4	5.5	Q
1920 to 1945	229	150	24	18	37	49.0	32.0	5.1	3.9	8.0
1946 to 1959	216	159	34	11	13	46.5	34.0	7.3	2.3	2.7
1960 to 1969	255	187	45	10	13	45.3	33.1	8.0	1.8	2.4
1970 to 1979	351	244	68	22	17	45.9	31.9	8.9	2.8	2.2
1980 to 1989	291	180	68	21	23	45.0	27.8	10.5	3.3	3.5
1990 to 1999	314	204	54	30	26	38.4	25.0	6.7	3.6	3.1
2000 to 2003	127	79	26	15	6	36.9	23.0	7.7	4.3	1.9
Census Region and Division										
Northeast	428	310	49	30	39	46.6	33.8	5.3	3.3	4.2
New England	75	59	Q	Q	5	51.1	40.5	4.5	2.9	Q
Middle Atlantic	353	251	42	26	34	45.8	32.5	5.4	3.4	4.4
Midwest	705	555	80	29	41	53.5	42.1	6.1	2.2	3.1
East North Central	528	424	60	20	24	55.2	44.3	6.3	2.1	2.5
West North Central	177	131	20	8	Q	49.1	36.5	5.5	2.4	4.8
South	474	263	123	58	31	35.6	19.8	9.2	4.3	2.3
South Atlantic	217	115	56	28	18	34.2	18.1	8.9	4.4	2.9
East South Central	102	66	25	6	5	44.6	29.1	11.0	2.6	2.0
West South Central	156	83	42	24	8	33.2	17.6	8.8	5.1	1.7
West	320	187	81	25	27	41.0	24.0	10.3	3.2	3.5
Mountain	167	120	33	4	Q	59.7	42.9	12.0	1.4	Q
Pacific	153	68	47	21	17	30.6	13.5	9.4	4.3	3.4

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Table E7. Natural Gas Consumption (Btu) and Energy Intensities by End Use for Non-Mall Buildings, 2003

	Total Natural Gas Consumption (trillion Btu)					Natural Gas Energy Intensity (thousand Btu/square foot)				
	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,928	1,316	332	142	137	44.3	30.3	7.6	3.3	3.2
Climate Zone: 30-Year Average										
Under 2,000 CDD and --										
More than 7,000 HDD	431	356	46	15	15	56.4	46.5	6.0	2.0	2.0
5,500-7,000 HDD	679	511	92	36	39	52.8	39.8	7.2	2.8	3.1
4,000-5,499 HDD	337	214	52	28	43	41.5	26.3	6.5	3.4	5.3
Fewer than 4,000 HDD	358	193	91	41	32	34.1	18.4	8.7	3.9	3.1
2,000 CDD or More and --										
Fewer than 4,000 HDD	122	42	51	22	8	28.1	9.7	11.6	5.1	1.8
Number of Floors										
One	664	471	91	71	30	44.4	31.5	6.1	4.8	2.0
Two	491	366	60	27	37	42.9	32.0	5.3	2.4	3.2
Three	241	178	38	13	11	42.5	31.4	6.8	2.4	1.9
Four to Nine	378	233	91	20	35	49.3	30.3	11.8	2.6	4.5
Ten or More	154	68	52	10	25	41.0	18.0	13.8	2.6	6.6
Number of Workers (main shift)										
Fewer than 5	272	213	25	15	19	38.8	30.4	3.5	2.2	2.6
5 to 9	198	136	32	26	Q	48.5	33.2	7.8	6.4	Q
10 to 19	242	166	37	34	5	45.5	31.3	6.9	6.4	1.0
20 to 49	395	280	58	31	25	48.1	34.2	7.1	3.8	3.0
50 to 99	241	167	46	12	16	39.2	27.1	7.5	1.9	2.6
100 to 249	235	161	49	8	16	45.8	31.5	9.6	1.6	3.0
250 or More	344	192	85	15	53	45.6	25.4	11.2	2.0	7.0
Weekly Operating Hours										
Fewer than 40	107	94	Q	4	3	32.9	28.9	Q	1.3	0.8
40 to 48	249	220	11	6	13	36.1	31.8	1.5	0.8	1.8
49 to 60	374	304	26	18	26	36.7	29.8	2.6	1.8	2.6
61 to 84	314	231	30	30	23	42.1	30.9	4.0	4.1	3.1
85 to 167	257	161	36	45	15	49.2	30.7	7.0	8.7	2.8
Open Continuously	626	306	224	38	58	60.1	29.4	21.5	3.7	5.5
Ownership and Occupancy										
Nongovernment Owned.....	1,503	995	274	131	103	45.1	29.9	8.2	3.9	3.1
Owner Occupied	708	506	106	42	53	42.8	30.6	6.4	2.5	3.2
Nonowner Occupied	779	472	168	89	50	49.0	29.7	10.6	5.6	3.1
Unoccupied	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Government Owned	425	321	58	11	35	41.9	31.7	5.7	1.1	3.4
Federal	35	27	4	Q	2	32.4	24.9	4.0	Q	2.0
State	98	76	11	2	10	40.4	31.0	4.6	0.8	3.9
Local	291	219	43	7	23	43.9	33.0	6.4	1.1	3.5
Vacancy Status										
Completely Vacant	18	17	(*)	Q	Q	19.4	18.5	0.1	Q	Q
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Partially Vacant	318	231	41	15	31	37.6	27.3	4.9	1.8	3.7
Not At All Vacant	1,582	1,059	291	127	105	46.7	31.3	8.6	3.7	3.1
Number of Establishments										
One	1,462	971	275	118	98	47.9	31.8	9.0	3.9	3.2
2 to 5	307	231	41	18	16	40.4	30.5	5.5	2.4	2.1
6 to 10	48	38	5	Q	Q	35.4	27.9	3.7	1.7	Q
11 to 20	34	26	Q	Q	Q	27.0	20.7	3.4	0.7	Q
More than 20	58	32	7	2	Q	32.4	17.9	3.7	1.1	Q
Currently Unoccupied	18	17	(*)	Q	Q	19.4	18.5	0.1	Q	Q

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	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,928	1,316	332	142	137	44.3	30.3	7.6	3.3	3.2
Predominant Exterior Wall Material										
Brick, Stone or Stucco	1,127	750	204	93	80	47.9	31.8	8.6	4.0	3.4
Concrete (Block or Poured)	351	242	62	22	24	47.9	33.0	8.5	3.1	3.3
Concrete Panels	180	126	Q	8	16	38.4	26.9	6.2	1.8	3.5
Siding or Shingles	85	55	18	10	2	42.7	27.7	9.2	4.9	1.0
Metal Panels	130	106	7	5	12	32.4	26.3	1.8	1.2	3.0
Window Glass	14	10	2	Q	Q	20.8	13.8	3.6	Q	Q
Other	35	23	9	2	Q	38.8	26.0	10.0	1.7	Q
No One Major Type	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Predominant Roof Material										
Built-Up	743	489	138	47	68	48.8	32.2	9.1	3.1	4.5
Shingles (Not Wood)	310	213	52	29	Q	47.6	32.7	8.0	4.5	Q
Metal Surfacing	194	151	15	14	14	33.6	26.1	2.6	2.4	2.5
Synthetic or Rubber	542	378	96	32	36	45.8	31.9	8.1	2.7	3.1
Slate or Tile	67	41	16	9	Q	42.3	25.7	9.9	6.0	Q
Wooden Materials	21	11	7	Q	(*)	39.8	21.7	Q	Q	0.4
Concrete	24	11	6	Q	Q	Q	Q	Q	4.5	Q
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
No One Major Type	16	12	1	Q	Q	43.3	31.8	3.5	Q	Q
Renovations in Buildings Constructed Before 1980 (more than one may apply)										
Any Type of Renovation										
Since 1980	684	474	118	40	52	51.5	35.7	8.9	3.0	3.9
Addition or Annex	304	202	65	13	24	60.4	40.2	12.9	2.6	4.8
Reduction In Floorspace	52	34	11	2	4	53.5	35.5	11.7	2.5	3.8
Cosmetic Improvements	497	344	84	33	37	49.3	34.1	8.3	3.2	3.7
Wall or Roof Replacement	278	197	46	13	22	44.0	31.2	7.3	2.0	3.5
Interior Wall										
Re-Configuration	342	243	56	14	28	48.7	34.6	7.9	2.1	4.0
HVAC Equipment Upgrade.....	467	316	88	24	39	55.1	37.2	10.4	2.9	4.6
Lighting Upgrade	397	286	65	21	25	49.0	35.3	8.0	2.6	3.1
Window Replacement	242	179	37	10	16	48.5	35.8	7.4	2.0	3.2
Plumbing System Upgrade	287	198	48	17	24	50.2	34.6	8.4	2.9	4.3
Insulation Upgrade	132	95	18	9	9	44.5	32.3	6.1	3.1	3.0
Other Renovation	26	16	Q	Q	Q	59.1	35.9	Q	Q	Q
No Renovations Since 1980.....	512	379	66	36	31	42.3	31.3	5.4	3.0	2.6
Building Newer than 1980	732	463	149	66	55	40.5	25.6	8.2	3.6	3.0
Energy Sources (more than one may apply)										
Electricity	1,927	1,316	332	142	137	44.3	30.3	7.6	3.3	3.2
Natural Gas	1,928	1,316	332	142	137	44.3	30.3	7.6	3.3	3.2
Fuel Oil	507	281	145	27	53	48.8	27.1	14.0	2.6	5.1
District Heat	47	24	10	7	6	19.2	9.9	4.1	2.7	2.5
District Chilled Water	35	20	8	Q	Q	19.8	11.5	4.7	Q	Q
Propane	106	64	27	6	9	43.0	25.9	10.8	2.6	3.8
Other	47	33	9	2	Q	52.3	36.7	10.0	1.7	Q
Space-Heating Energy Source										
Natural Gas	1,803	1,316	270	98	118	48.8	35.6	7.3	2.7	3.2
Natural Gas Main	1,687	1,250	240	86	111	51.2	37.9	7.3	2.6	3.4
Natural Gas Secondary	116	66	30	12	8	29.1	16.6	7.5	3.1	1.9
Other Excluding Natural Gas	106	(*)	57	38	11	17.7	(*)	9.5	6.4	1.8
Buildings without Heating	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q

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	Total Natural Gas Consumption (trillion Btu)					Natural Gas Energy Intensity (thousand Btu/square foot)				
	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,928	1,316	332	142	137	44.3	30.3	7.6	3.3	3.2
Primary Space-Heating Energy Source										
Electricity	177	48	79	36	13	28.6	7.8	12.8	5.9	2.2
Natural Gas	1,687	1,250	240	86	111	51.2	37.9	7.3	2.6	3.4
Fuel Oil	20	8	3	Q	Q	Q	Q	Q	4.9	Q
District Heat	23	Q	6	6	3	10.9	Q	Q	3.0	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	92	38	15	2	37	90.3	37.6	14.8	1.9	36.0
Other Excluding Natural Gas	1,729	1,197	305	136	91	43.2	29.9	7.6	3.4	2.3
Buildings without Cooling	107	81	12	4	Q	43.7	33.0	5.0	1.6	Q
Water-Heating Energy Source										
Natural Gas	1,509	963	332	105	108	52.4	33.4	11.5	3.7	3.7
Other Excluding Natural Gas	361	299	(*)	36	26	29.3	24.3	(*)	2.9	2.1
Bldgs without Water Heating	57	54	(*)	Q	Q	24.6	23.1	(*)	Q	Q
Cooking Energy Source										
Natural Gas	856	422	232	142	61	55.5	27.3	15.0	9.2	3.9
Other Excluding Natural Gas	141	107	22	(*)	11	43.7	33.4	6.8	(*)	3.5
Buildings without Cooking	931	787	78	(*)	65	37.5	31.7	3.2	(*)	2.6
Energy End Uses (more than one may apply)										
Buildings with Space Heating	1,909	1,316	328	137	129	44.4	30.6	7.6	3.2	3.0
Buildings with Cooling	1,821	1,235	320	138	127	44.4	30.1	7.8	3.4	3.1
Buildings with Water Heating	1,870	1,262	332	142	134	45.5	30.7	8.1	3.4	3.3
Buildings with Cooking	997	529	254	142	72	53.4	28.4	13.6	7.6	3.9
Buildings with Manufacturing	100	63	4	Q	30	43.6	27.2	1.9	Q	13.2
Buildings with Electricity Generation	534	293	141	19	81	51.3	28.2	13.6	1.8	7.8
Percent of Floorspace Heated										
Not Heated	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
1 to 50	97	64	9	9	15	24.3	16.0	2.2	2.3	3.8
51 to 99	268	174	47	26	Q	44.9	29.2	8.0	4.3	Q
100	1,544	1,077	272	102	94	46.8	32.6	8.2	3.1	2.8
Percent of Floorspace Cooled										
Not Cooled	107	81	12	4	Q	43.7	33.0	5.0	1.6	Q
1 to 50	452	371	26	16	38	37.2	30.6	2.2	1.4	3.1
51 to 99	451	297	82	40	32	46.4	30.5	8.4	4.1	3.3
100	918	567	212	82	57	47.9	29.6	11.1	4.3	3.0
Heating Equipment (more than one may apply)										
Heat Pumps	224	109	75	17	24	40.3	19.7	13.5	3.0	4.2
Packaged Heat Pumps	140	65	51	11	Q	42.0	19.4	15.3	3.2	Q
Split-System Heat Pumps	42	24	11	Q	Q	29.0	16.4	7.9	Q	Q
Individual Room Heat Pumps ..	84	40	31	6	7	38.1	18.1	14.1	2.7	3.2
Furnaces	673	500	87	50	36	44.0	32.6	5.7	3.3	2.4
Individual Space Heaters	379	270	61	16	32	42.3	30.2	6.8	1.8	3.6
District Heat	39	18	10	7	Q	17.1	7.9	4.3	2.8	Q
Boilers	1,040	709	197	44	89	57.2	39.0	10.8	2.4	4.9
Packaged Heating Units	582	383	115	54	30	42.7	28.1	8.4	4.0	2.2
Other	47	39	5	2	3	26.3	21.4	2.5	0.9	1.4

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	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,928	1,316	332	142	137	44.3	30.3	7.6	3.3	3.2
Cooling Equipment (more than one may apply)										
Residential-Type Central										
Air Conditioners	391	269	57	36	29	49.0	33.7	7.2	4.5	3.7
Heat Pumps	234	119	74	18	24	40.1	20.3	12.7	3.1	4.0
Packaged Heat Pumps	145	71	50	11	Q	43.4	21.3	14.9	3.2	Q
Split-System Heat Pumps	45	25	11	Q	Q	29.9	16.8	7.6	Q	Q
Individual Room Heat Pumps ..	85	41	31	6	7	35.8	17.3	13.0	2.5	3.0
Individual Air Conditioners	410	280	92	16	22	45.0	30.8	10.1	1.8	2.4
District Chilled Water	35	20	8	Q	Q	19.8	11.5	4.7	Q	Q
Central Chillers	501	296	121	18	66	55.0	32.5	13.3	2.0	7.3
Packaged Air Conditioning										
Units	1,090	763	171	88	67	45.8	32.1	7.2	3.7	2.8
Swamp Coolers	81	48	19	7	Q	63.6	38.1	14.7	5.4	Q
Other	52	33	Q	Q	3	64.8	41.3	Q	2.2	Q
Main Equipment Replaced Since 1990 (more than one may apply)										
Heating	605	427	104	36	38	49.3	34.8	8.5	2.9	3.1
Cooling	779	528	144	50	56	48.5	32.9	9.0	3.1	3.5
Water Heating Equipment										
Centralized System	1,226	822	220	106	78	48.4	32.4	8.7	4.2	3.1
Distributed System	254	201	20	21	13	33.7	26.6	2.6	2.7	1.7
Combination of Centralized and Distributed System	390	239	92	15	43	47.4	29.1	11.2	1.9	5.2
Energy-Related Space Functions (more than one may apply)										
Commercial Food Preparation....	996	529	254	142	71	53.4	28.4	13.6	7.6	3.8
Activities with Large Amounts of Hot Water	931	498	254	97	83	58.1	31.1	15.8	6.1	5.1
Separate Computer Area	875	589	169	36	81	42.4	28.6	8.2	1.7	3.9
HVAC Conservation Features (more than one may apply)										
Variable Air-Volume System.....	710	455	140	40	75	48.6	31.2	9.6	2.7	5.2
Economizer Cycle	805	543	154	39	70	48.3	32.6	9.3	2.3	4.2
HVAC Maintenance	1,659	1,114	308	120	117	44.9	30.1	8.3	3.3	3.2
Energy Management and Control System (EMCS)	477	312	93	21	51	41.1	26.9	8.0	1.8	4.4
Equipment Usage Reduced When Building Not In Full Use (more than one may apply)										
Heating	1,292	903	200	94	95	41.4	29.0	6.4	3.0	3.1
Cooling	1,288	882	203	105	98	41.0	28.1	6.4	3.3	3.1
Lighting	1,250	968	106	100	77	40.2	31.1	3.4	3.2	2.5
Office Equipment	476	380	38	28	30	37.6	30.0	3.0	2.2	2.3

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	Total	Space Heating	Water Heating	Cooking	Other	Total	Space Heating	Water Heating	Cooking	Other
All Buildings*	1,928	1,316	332	142	137	44.3	30.3	7.6	3.3	3.2
Annual Consumption (hundred cubic feet)										
1,000 or Less	37	30	4	1	Q	8.4	7.0	1.0	0.3	Q
1,001 to 5,000	249	206	23	16	4	25.6	21.2	2.4	1.6	0.4
5,001 to 10,000	247	174	34	31	8	39.4	27.7	5.5	5.0	1.2
10,001 to 25,000	360	239	61	42	18	46.3	30.7	7.8	5.4	2.3
25,001 to 50,000	293	199	45	26	22	52.9	36.0	8.2	4.7	4.0
50,001 to 100,000	218	144	40	8	26	54.8	36.3	10.0	2.0	6.5
Over 100,000	525	324	125	17	59	89.4	55.1	21.3	2.9	10.1
Provider of Natural Gas (more than one may apply)										
Local Utility	1,631	1,120	278	133	99	42.5	29.2	7.2	3.5	2.6
Some Other Provider	389	256	76	13	44	61.0	40.2	11.9	2.0	6.8

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.

(*)=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.