

Table C27. Natural gas consumption and conditional energy intensity by census division (part 1), 2018

	Total natural gas consumption (billion cubic feet)			Total floorspace of buildings using natural gas (million square feet)			Natural gas energy intensity (cubic feet/square foot)		
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	75	334	580	1,861	9,470	14,491	40.5	35.2	40.1
Number of floors									
1	24	90	282	411	2,550	5,911	57.4	35.5	47.7
2	14	83	135	315	2,336	3,973	44.3	35.5	34.0
3	16	52	67	483	1,242	2,004	33.9	42.0	33.6
4 to 9	17	75	74	521	2,157	1,793	33.3	34.9	41.1
10 or more	Q	33	22	Q	1,184	809	Q	27.7	27.6
Number of workers (main shift)									
Fewer than 5	Q	44	92	Q	1,246	2,397	Q	35.5	38.2
5 to 9	Q	21	64	Q	586	1,598	Q	36.2	40.3
10 to 19	Q	30	88	Q	850	2,046	Q	35.2	43.3
20 to 49	14	48	107	270	1,209	2,495	50.8	39.9	43.0
50 to 99	15	60	80	356	1,525	1,992	40.8	39.2	40.2
100 to 249	17	69	90	415	1,981	2,252	41.9	34.8	39.9
250 or more	7	61	59	215	2,073	1,711	32.3	29.6	34.3
Weekly operating hours									
Fewer than 40	Q	29	45	Q	833	1,417	Q	34.7	31.9
40 to 48	12	36	91	416	1,139	2,782	29.9	32.0	32.7
49 to 60	9	68	124	425	2,305	3,291	21.2	29.3	37.8
61 to 84	16	66	100	266	1,853	2,421	59.2	35.8	41.1
85 to 167	Q	52	85	Q	1,231	1,867	Q	42.4	45.7
Open continuously	23	82	135	435	2,108	2,712	52.3	38.9	49.7
Ownership and occupancy									
Nongovernment owned	57	242	463	1,399	7,376	11,294	40.8	32.8	41.0
Owner occupied	34	137	292	929	4,211	7,185	36.2	32.6	40.6
Leased to tenant or tenants	23	102	170	462	3,079	4,091	50.5	33.3	41.6
Unoccupied	Q	Q	Q	Q	Q	Q	Q	Q	Q
Government owned	18	92	118	463	2,094	3,197	39.7	43.9	36.8
Federal	Q	Q	Q	Q	Q	Q	Q	Q	Q
State	Q	29	26	Q	618	853	Q	46.8	31.1
Local	12	56	85	284	1,319	2,147	41.0	42.4	39.7
Party responsible for operation of energy systems									
Building owner	56	278	467	1,531	7,883	12,032	36.5	35.2	38.9
Business owner or tenant	Q	48	96	Q	1,325	1,803	Q	36.1	53.2
Property management	Q	Q	Q	Q	Q	Q	Q	Q	Q
Other	Q	Q	11	Q	Q	400	Q	Q	27.2
Provider of direct input on energy-related equipment purchases									
Building owner	62	290	499	1,581	8,194	12,678	39.2	35.4	39.3
Business owner or tenant	Q	26	57	Q	837	1,022	Q	31.4	55.5
Property management	Q	Q	Q	Q	Q	Q	Q	Q	Q
Other	Q	15	21	Q	313	663	Q	46.4	31.0

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All buildings	75	334	580	1,861	9,470	14,491	40.5	35.2	40.1
Renovations since 2000 (more than one may apply)									
Any type of renovation	38	197	304	852	5,173	7,783	45.1	38.1	39.1
Addition or annex	13	57	106	144	1,131	2,451	89.4	50.5	43.2
Reduction in floorspace	Q	13	14	Q	279	459	Q	45.6	30.3
Roof replacement	16	112	151	326	2,817	3,726	50.3	39.9	40.6
Interior wall reconfiguration	19	87	148	441	2,626	4,159	43.9	33.2	35.6
Window replacement	13	67	74	249	1,698	2,138	54.2	39.7	34.4
HVAC equipment upgrade	32	146	187	700	3,904	4,596	46.1	37.3	40.6
Lighting upgrade	31	135	203	683	3,709	5,300	44.9	36.3	38.4
Electrical upgrade	23	95	118	465	2,471	3,073	49.9	38.6	38.4
Plumbing system upgrade	19	92	100	425	2,418	2,609	44.6	38.0	38.3
Insulation upgrade	Q	55	53	Q	1,495	1,422	Q	37.0	37.2
Fire, safety, or security upgrade	26	117	146	536	2,795	3,590	48.4	41.7	40.6
Structural upgrade	Q	33	27	Q	739	846	Q	45.2	32.5
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q
No renovations	35	121	233	944	3,785	5,559	36.8	31.9	41.9
Buildings constructed 2013 or later	Q	16	43	Q	512	1,148	Q	30.8	37.9
Energy sources (more than one may apply)									
Electricity	75	334	580	1,861	9,470	14,491	40.5	35.2	40.1
Natural gas	75	334	580	1,861	9,470	14,491	40.5	35.2	40.1
Fuel oil	31	89	92	707	2,854	2,448	43.7	31.3	37.6
District heat	Q	21	14	Q	859	983	Q	24.6	14.7
District chilled water	Q	6	9	Q	223	532	Q	28.3	17.8
Propane	Q	33	30	Q	871	849	Q	38.2	35.5
Solar	6	22	14	208	896	393	29.7	24.8	35.4
Wood, coal, and other	Q	Q	Q	Q	Q	Q	Q	Q	Q
Space-heating energy sources									
Natural gas	67	311	550	1,654	8,331	13,385	40.5	37.3	41.1
Natural gas main	60	291	521	1,430	7,463	12,096	41.9	39.0	43.1
Natural gas secondary	Q	20	29	Q	868	1,289	Q	23.0	22.5
Other excluding natural gas	9	23	30	208	1,118	1,101	40.9	20.3	27.4
Buildings without heating	N	Q	Q	N	Q	Q	N	Q	Q
Primary space-heating energy source									
Electricity	11	24	46	285	1,006	1,488	38.8	23.8	30.9
Natural gas	60	291	521	1,430	7,463	12,096	41.9	39.0	43.1
Fuel oil	Q	Q	N	Q	232	N	Q	15.9	N
District heat	Q	15	13	Q	749	888	Q	20.2	14.5
Propane	N	N	N	N	N	N	N	N	N
Other sources ^b	N	N	Q	N	N	Q	N	N	Q

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All buildings	75	334	580	1,861	9,470	14,491	40.5	35.2	40.1
Cooling equipment (more than one may apply)									
Packaged air-conditioning units	56	232	397	1,343	6,164	8,844	41.5	37.6	44.9
Residential-type central air conditioners	21	73	151	421	1,767	4,019	49.5	41.1	37.7
Individual air conditioners	27	90	98	459	2,142	2,261	59.2	42.1	43.3
Central chillers	15	99	120	382	2,708	3,023	39.2	36.4	39.8
Heat pumps	11	47	37	309	1,466	954	34.6	31.8	39.2
District chilled water	Q	6	9	Q	223	532	Q	28.3	17.8
Swamp coolers	Q	Q	Q	Q	Q	Q	Q	Q	Q
Other	N	N	N	N	N	N	N	N	N
HVAC features (more than one may apply)									
Economizer cycle	39	168	263	1,024	4,618	6,204	37.8	36.4	42.4
Variable air volume (VAV) system	27	121	201	721	3,652	5,072	37.4	33.1	39.7
Dedicated outside air system (DOAS)	8	56	54	190	1,151	1,245	42.9	49.1	43.0
Demand controlled ventilation (DCV)	13	65	59	371	1,879	1,667	36.1	34.5	35.2
Regular HVAC maintenance	69	297	507	1,645	8,285	12,135	42.1	35.8	41.8
Building automation system (BAS) controls heating or cooling	45	169	269	1,100	4,979	6,413	41.2	34.0	42.0
Internet-connected or smart thermostat	Q	16	21	Q	386	815	Q	41.2	25.7
Programmable thermostat	17	88	144	381	2,315	3,406	44.7	37.9	42.4
Main equipment replaced since 2000 (more than one may apply)									
Heating	41	149	227	817	3,941	5,562	50.2	37.7	40.8
Cooling	24	133	158	558	3,544	4,008	43.6	37.5	39.4
Water-heating equipment									
Centralized system	52	225	402	1,290	5,852	10,332	40.1	38.4	38.9
Distributed system	Q	58	84	242	1,992	1,763	39.6	29.3	47.7
Combination of centralized and distributed systems	13	46	89	305	1,394	2,216	43.1	32.6	40.0
Generation technologies (more than one may apply)									
Reciprocating engine generators	39	134	181	877	3,594	4,203	44.0	37.4	43.1
Solar panels	6	22	14	204	896	393	29.9	24.8	35.4
Other generation technology	Q	15	Q	Q	306	Q	Q	48.0	Q

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	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	75	334	580	1,861	9,470	14,491	40.5	35.2	40.1
Food preparation or serving areas in non-food service buildings (more than one may apply)									
Snack bar, concession stand, or coffee shop	11	53	85	222	1,171	1,862	50.7	45.1	45.4
Fast food or small restaurant	Q	57	91	Q	1,192	1,880	Q	48.2	48.2
Cafeteria or large restaurant	17	84	116	424	2,200	2,832	39.6	38.0	40.8
Commercial kitchen or food preparation area	25	113	154	437	2,469	3,215	58.1	45.9	47.8
Small kitchen area	19	94	153	531	2,428	3,888	35.2	38.9	39.5
Annual consumption (hundred cubic feet)									
1,000 or less	Q	3	10	Q	292	640	Q	11.1	15.1
1,001 to 5,000	Q	36	86	Q	1,329	3,058	Q	27.1	28.1
5,001 to 10,000	Q	36	77	Q	1,236	2,118	Q	29.0	36.2
10,001 to 25,000	17	48	112	434	1,630	2,800	38.5	29.2	40.1
25,001 to 50,000	15	54	108	339	1,884	2,045	45.1	28.5	52.6
50,001 to 100,000	10	68	60	205	1,436	1,400	49.7	47.7	43.2
Over 100,000	17	89	128	282	1,662	2,431	61.2	53.4	52.5

Data source: U.S. Energy Information Administration, Forms EIA-871A and C of the 2018 Commercial Buildings Energy Consumption Survey

Notes: Because of rounding, data may not sum to totals. The *Guide to the 2018 CBECS Tables* and *CBECS Terminology* contain definitions of terms used in these tables and comparisons between previous CBECS tables. You can access both references from <http://www.eia.gov/consumption/commercial/data/2018/>.

Data are sample survey estimates with relative standard errors published in a tab on the Excel worksheet for this table.

Estimates in the *energy end uses* category represent total consumption in buildings that have the end use but not the consumption specifically for that end use.

HVAC = Heating, ventilation, and air conditioning.

^aClimate zones are based on ASHRAE Standard 169-2021; see <https://www.eia.gov/consumption/commercial/maps.php#defined>.

^bOther sources includes wood, coal, solar, and all other energy sources.

Q = Data withheld either because the relative standard error was greater than 50% or the reporting sample had fewer than 20 buildings.

N = No buildings in reporting sample.

Relative standard errors (RSEs) for Table C27. Natural gas consumption and conditional energy intensity by census division (part 1), 2018

	RSEs for total natural gas consumption			RSEs for total floorspace of buildings using natural gas			RSEs for natural gas energy intensity		
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	12.6	7.4	9.7	11.8	9.6	9.3	5.1	5.8	3.1
Number of floors									
1	34.7	10.9	10.6	19.6	13.4	11.6	26.9	9.8	4.4
2	28.8	14.6	19.0	19.6	14.2	14.6	12.1	8.0	6.5
3	29.4	17.6	20.8	32.4	19.0	20.7	19.2	12.4	7.7
4 to 9	40.5	14.9	14.0	26.1	13.8	14.1	20.6	7.9	7.4
10 or more	37.0	16.7	12.2	34.1	19.1	36.2	26.6	11.6	43.6
Number of workers (main shift)									
Fewer than 5	28.8	21.3	15.2	31.2	23.3	16.0	26.3	6.9	7.9
5 to 9	34.0	25.2	22.2	45.0	17.7	24.5	20.0	24.0	8.3
10 to 19	74.2	15.8	20.7	64.4	16.4	23.4	24.6	14.6	9.2
20 to 49	22.0	12.3	13.3	15.3	12.4	12.5	17.9	9.3	7.7
50 to 99	35.7	16.1	17.4	25.1	15.4	15.8	12.5	10.1	6.4
100 to 249	37.8	13.7	15.8	41.0	17.4	11.6	9.9	10.6	9.0
250 or more	31.7	12.5	10.3	22.9	12.9	17.1	24.6	8.4	19.2
Weekly operating hours									
Fewer than 40	52.7	25.9	17.9	52.5	29.8	12.6	18.4	6.6	9.8
40 to 48	34.0	22.6	15.5	31.1	19.7	12.3	11.4	10.0	7.5
49 to 60	27.4	11.4	19.9	31.5	11.9	16.5	14.5	4.3	9.2
61 to 84	23.3	17.0	13.5	16.3	14.6	12.8	15.0	12.2	7.9
85 to 167	47.7	13.3	17.0	44.5	11.3	14.3	10.6	12.1	9.1
Open continuously	21.5	8.9	12.9	16.8	13.0	13.4	12.9	7.3	6.1
Ownership and occupancy									
Nongovernment owned	14.9	9.6	9.8	13.3	10.9	10.1	6.3	7.3	4.1
Owner occupied	16.6	12.2	9.3	14.4	14.4	9.0	13.2	6.7	5.0
Leased to tenant or tenants	33.7	13.1	15.6	21.4	12.5	14.4	23.5	10.7	5.2
Unoccupied	71.8	78.7	74.6	71.8	78.5	76.5	0.0	18.6	55.1
Government owned	20.2	10.9	13.2	22.4	12.8	13.0	7.2	4.0	4.8
Federal	60.5	37.8	38.0	54.1	45.2	35.1	44.7	16.5	10.9
State	26.4	30.0	28.0	34.9	30.1	29.3	20.1	6.4	12.4
Local	23.5	14.0	12.9	19.5	14.4	11.1	6.9	4.8	4.4
Party responsible for operation of energy systems									
Building owner	11.4	8.4	10.3	11.9	10.3	10.1	9.3	5.5	3.7
Business owner or tenant	48.3	26.2	21.1	27.1	22.2	20.3	33.2	12.0	7.4
Property management	59.7	38.3	43.0	62.4	30.4	43.4	9.0	18.2	33.3
Other	75.2	38.0	15.9	38.2	35.7	15.9	48.5	15.5	11.8
Provider of direct input on energy-related equipment purchases									
Building owner	16.0	8.4	10.7	13.5	10.4	10.2	6.6	5.4	3.5
Business owner or tenant	32.9	25.9	18.4	8.7	21.0	18.4	28.7	16.5	10.1
Property management	70.6	51.4	58.4	70.6	35.6	56.0	0.0	32.0	18.5
Other	46.7	33.5	22.2	20.5	34.8	18.9	41.2	18.5	15.5

Relative standard errors (RSEs) for Table C27. Natural gas consumption and conditional energy intensity by census division (part 1), 2018

	RSEs for total natural gas consumption			RSEs for total floorspace of buildings using natural gas			RSEs for natural gas energy intensity		
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	12.6	7.4	9.7	11.8	9.6	9.3	5.1	5.8	3.1
Number of establishments									
1	12.5	8.0	10.1	13.6	11.4	9.9	4.3	6.4	5.1
2 to 5	43.6	19.2	15.7	30.9	18.2	12.1	28.3	7.1	9.3
6 to 10	40.5	22.9	29.4	34.9	23.5	26.0	11.8	18.0	9.9
11 to 20	66.3	34.8	23.4	41.6	25.4	17.1	42.2	17.9	11.1
More than 20	51.6	20.9	53.4	51.7	19.0	31.9	43.4	20.3	33.4
Currently unoccupied	71.8	62.6	42.7	71.8	67.1	39.6	0.0	21.9	18.8
Predominant exterior wall material									
Brick, stone, or stucco	20.4	8.9	10.1	10.0	11.4	10.1	15.3	6.9	4.4
Concrete (block or poured)	26.3	13.3	18.5	26.1	13.2	19.1	19.0	10.8	11.9
Concrete panels	45.8	28.6	29.0	55.0	29.7	25.9	31.8	17.9	5.8
Siding or shingles	32.1	27.9	22.7	34.5	30.3	23.4	12.1	11.5	17.1
Metal panels	38.1	30.0	20.5	22.0	26.1	17.9	23.6	16.9	10.9
Window glass	63.2	38.6	41.4	43.6	40.5	24.3	57.2	8.7	25.0
Other	92.3	52.3	50.0	92.8	47.0	48.8	6.0	15.6	12.7
Predominant roof material									
Metal surfacing	62.6	25.1	14.3	38.6	24.4	17.0	44.8	9.0	10.2
Synthetic or rubber	18.7	10.3	9.1	16.5	10.9	9.1	10.4	7.1	5.6
Built-up	36.4	9.2	18.1	36.2	11.7	15.7	9.9	9.5	8.6
Slate or tile shingles	40.6	37.4	38.2	36.5	23.6	37.0	12.3	24.6	9.7
Wooden materials (including shingles)	83.7	59.3	51.2	98.4	59.1	55.5	112.7	2.1	30.8
Asphalt, fiberglass, or other shingles	29.9	10.6	16.2	37.5	17.0	16.2	15.1	13.8	5.5
Concrete	81.6	30.5	52.5	83.9	20.0	43.8	5.1	25.6	42.2
Other	57.3	27.3	31.1	58.1	21.4	20.8	1.2	14.5	35.0
Roof tilt									
Flat	19.0	7.6	10.3	18.3	9.4	8.7	9.2	6.1	5.1
Shallow pitch	25.5	15.3	13.9	30.6	15.1	16.6	16.2	11.0	7.0
Steeper pitch	16.6	22.7	13.8	19.0	26.6	13.6	10.9	9.2	5.2
Cool roof characteristics (more than one may apply)									
White or reflective coating or paint	15.9	11.4	11.5	19.4	12.0	11.5	11.6	8.7	4.6
White or reflective tiles or shingles	65.7	38.1	29.4	48.0	25.3	26.7	41.0	28.4	13.9
Aluminum coating	48.8	31.0	29.1	54.4	19.2	34.5	99.4	21.5	13.5
Ballasted roof system	26.8	14.2	23.9	26.7	13.9	22.9	29.6	7.9	7.4
Other cool roof property	54.6	55.9	55.1	36.5	49.7	39.7	19.8	15.4	21.6

Relative standard errors (RSEs) for Table C27. Natural gas consumption and conditional energy intensity by census division (part 1), 2018

	RSEs for total natural gas consumption			RSEs for total floorspace of buildings using natural gas			RSEs for natural gas energy intensity		
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	12.6	7.4	9.7	11.8	9.6	9.3	5.1	5.8	3.1
Renovations since 2000 (more than one may apply)									
Any type of renovation	10.7	9.0	8.8	13.7	9.8	9.8	11.8	5.8	4.6
Addition or annex	35.7	14.8	16.0	32.0	13.2	16.5	21.2	8.9	7.2
Reduction in floorspace	109.9	45.3	33.4	74.3	34.6	29.6	181.1	31.9	19.2
Roof replacement	21.8	13.3	9.8	19.4	12.7	9.9	11.5	7.7	6.6
Interior wall reconfiguration	31.3	17.7	11.0	24.0	15.0	10.0	12.1	10.1	6.5
Window replacement	26.3	14.4	11.2	16.3	12.0	14.5	18.8	9.7	12.1
HVAC equipment upgrade	12.7	12.3	8.6	16.0	12.1	9.0	14.6	7.4	4.9
Lighting upgrade	9.1	12.1	11.0	16.3	12.2	9.1	12.4	7.3	4.2
Electrical upgrade	18.5	13.9	13.0	23.9	13.5	12.6	16.7	9.9	9.3
Plumbing system upgrade	27.0	15.4	11.4	27.8	15.2	16.2	13.6	9.8	14.0
Insulation upgrade	41.8	18.7	14.6	41.5	19.3	20.0	11.8	14.9	19.9
Fire, safety, or security upgrade	21.8	11.0	13.6	20.8	12.6	11.1	10.8	8.4	8.7
Structural upgrade	67.6	22.1	14.2	48.5	18.9	27.4	37.3	18.6	35.2
Other	78.4	33.0	58.8	74.9	32.3	59.7	32.9	14.4	18.2
No renovations	26.1	9.9	13.4	25.5	13.0	11.7	7.6	8.0	3.2
Buildings constructed 2013 or later	47.4	27.0	23.3	44.0	29.5	22.7	22.0	14.6	9.7
Energy sources (more than one may apply)									
Electricity	12.6	7.4	9.7	11.8	9.6	9.3	5.1	5.8	3.1
Natural gas	12.6	7.4	9.7	11.8	9.6	9.3	5.1	5.8	3.1
Fuel oil	27.6	12.2	14.7	19.9	14.2	16.5	12.3	8.3	11.9
District heat	47.2	20.0	23.1	49.2	14.2	30.2	46.3	22.4	36.7
District chilled water	51.6	34.3	45.7	52.3	29.5	29.5	36.2	32.2	34.1
Propane	76.1	21.4	21.7	49.9	23.3	24.9	44.1	8.4	10.3
Solar	24.0	35.2	32.2	21.8	31.5	23.2	10.6	12.7	19.8
Wood, coal, and other	80.1	46.6	42.5	68.3	56.3	38.7	60.6	35.2	25.6
Space-heating energy sources									
Natural gas	11.7	7.6	9.8	11.6	10.1	10.0	4.9	6.0	3.3
Natural gas main	13.5	7.8	10.1	10.4	9.9	11.0	5.2	5.9	3.0
Natural gas secondary	24.5	19.7	21.4	35.1	17.8	21.1	34.8	9.8	25.6
Other excluding natural gas	40.0	21.4	24.2	30.7	15.6	17.2	32.1	20.8	17.6
Buildings without heating	0.0	51.2	70.5	0.0	51.2	70.5	0.0	0.0	0.0
Primary space-heating energy source									
Electricity	35.0	21.5	17.7	31.7	20.2	12.3	21.0	9.7	13.0
Natural gas	13.5	7.8	10.1	10.4	9.9	11.0	5.2	5.9	3.0
Fuel oil	93.0	62.4	0.0	78.9	39.8	0.0	78.7	45.8	0.0
District heat	47.5	28.1	23.2	51.6	20.4	32.5	49.0	25.4	43.0
Propane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other sources ^b	0.0	0.0	41.2	0.0	0.0	45.9	0.0	0.0	19.4

Relative standard errors (RSEs) for Table C27. Natural gas consumption and conditional energy intensity by census division (part 1), 2018

	RSEs for total natural gas consumption			RSEs for total floorspace of buildings using natural gas			RSEs for natural gas energy intensity		
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	12.6	7.4	9.7	11.8	9.6	9.3	5.1	5.8	3.1
Cooling energy sources									
Natural gas	47.2	44.3	55.4	45.6	36.2	54.0	47.3	23.4	14.5
Other excluding natural gas	14.6	7.5	9.5	13.1	9.9	9.3	6.1	5.9	3.2
Buildings without cooling	68.2	29.3	26.4	54.6	36.8	28.2	44.3	19.4	7.9
Water-heating energy sources									
Natural gas	14.7	7.7	11.2	15.5	9.9	10.4	5.6	7.0	2.7
Other excluding natural gas	21.3	13.9	9.9	12.0	13.9	10.4	18.5	7.3	10.0
Buildings without water heating	60.3	62.9	28.3	51.9	52.5	29.1	19.0	29.8	8.8
Cooking energy sources									
Natural gas	19.8	9.1	9.6	17.8	9.6	8.5	7.5	6.2	3.5
Other excluding natural gas	25.3	16.9	17.2	19.5	14.7	17.2	15.4	12.5	11.5
Buildings without cooking	16.6	11.1	11.8	17.3	13.8	11.7	8.3	6.0	4.3
Energy end uses (more than one may apply)									
Buildings with space heating	12.6	7.4	9.7	11.8	9.6	9.3	5.1	5.8	3.1
Buildings with cooling	13.3	7.3	9.6	12.6	9.8	9.3	5.4	5.8	3.2
Buildings with water heating	13.0	7.1	9.7	12.3	9.4	9.2	5.2	6.0	3.1
Buildings with cooking	16.6	7.8	10.1	15.8	8.5	9.8	6.4	6.4	4.9
Buildings with manufacturing	18.1	28.2	16.8	27.2	29.1	15.8	21.6	21.0	8.5
Buildings with electricity generation	19.8	8.0	9.7	16.6	11.3	9.0	7.8	7.5	7.5
Buildings with lighting	12.6	7.3	9.7	11.8	9.5	9.3	5.1	5.8	3.1
Percentage of floorspace heated									
Not heated	0.0	51.2	70.5	0.0	51.2	70.5	0.0	0.0	0.0
1% to 50%	95.0	36.3	16.7	84.5	30.6	20.0	71.9	22.9	14.1
51% to 99%	36.5	14.4	15.8	28.8	14.4	13.7	13.3	7.5	10.1
100%	14.0	8.6	10.9	13.3	9.7	9.9	9.6	6.8	3.8
Percentage of floorspace cooled									
Not cooled	68.2	29.3	26.4	54.6	36.8	28.2	44.3	19.4	7.9
1% to 50%	31.3	13.7	15.3	31.8	15.9	12.8	21.6	11.1	5.5
51% to 99%	18.4	9.2	14.9	14.0	11.5	13.4	13.1	6.1	7.3
100%	12.9	10.7	10.2	21.6	11.7	9.5	21.1	7.3	6.4
Heating equipment (more than one may apply)									
Packaged heating units	24.8	11.0	10.6	23.2	9.3	9.7	7.6	9.3	4.6
Furnaces	46.1	16.8	12.3	35.0	22.1	13.7	27.9	10.3	7.9
Individual space heaters	38.9	12.0	15.4	29.0	13.3	13.7	15.7	6.8	5.2
Boilers	22.0	8.6	10.5	15.5	13.0	10.4	10.4	7.3	3.5
Heat pumps	25.8	12.0	17.0	22.7	15.8	15.3	23.8	10.5	15.8
District heat	47.2	22.4	22.9	49.2	16.1	31.2	46.3	22.8	40.9
Duct reheat	56.0	31.5	20.8	37.9	24.0	16.6	33.1	18.9	11.2
Other	63.1	84.5	44.6	62.2	89.1	45.1	2.9	22.6	5.6

Relative standard errors (RSEs) for Table C27. Natural gas consumption and conditional energy intensity by census division (part 1), 2018

	RSEs for total natural gas consumption			RSEs for total floorspace of buildings using natural gas			RSEs for natural gas energy intensity		
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	12.6	7.4	9.7	11.8	9.6	9.3	5.1	5.8	3.1
Cooling equipment (more than one may apply)									
Packaged air-conditioning units	14.0	7.6	9.4	13.6	9.5	10.2	6.1	6.6	3.6
Residential-type central air conditioners	29.6	15.1	10.0	23.8	16.1	10.7	9.9	8.1	6.6
Individual air conditioners	35.7	14.9	15.9	25.7	15.2	14.5	13.3	7.8	6.3
Central chillers	29.9	9.2	13.0	21.3	11.4	14.8	16.0	7.2	10.9
Heat pumps	24.7	18.1	20.8	28.2	19.4	17.8	18.8	8.2	12.1
District chilled water	51.6	34.3	45.7	52.3	29.5	29.5	36.2	32.2	34.1
Swamp coolers	70.8	64.7	44.6	65.3	76.9	40.2	36.0	66.9	9.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HVAC features (more than one may apply)									
Economizer cycle	18.4	9.7	9.0	13.7	11.2	8.2	9.6	7.7	4.8
Variable air volume (VAV) system	14.2	9.5	9.6	17.4	13.6	8.4	21.5	8.5	7.3
Dedicated outside air system (DOAS)	26.5	14.0	22.0	26.9	12.0	22.0	19.8	10.2	8.3
Demand controlled ventilation (DCV)	31.6	13.8	13.6	30.0	16.0	13.8	13.6	6.0	8.4
Regular HVAC maintenance	13.2	6.9	10.0	11.9	10.3	9.4	5.7	6.4	3.6
Building automation system (BAS) controls heating or cooling	16.1	7.7	7.6	13.6	9.1	6.7	4.6	7.6	4.4
Internet-connected or smart thermostat	50.8	23.0	45.0	49.6	24.4	37.2	37.8	17.4	36.6
Programmable thermostat	21.2	14.9	16.5	28.1	15.6	15.0	20.2	8.3	6.6
Main equipment replaced since 2000 (more than one may apply)									
Heating	26.0	12.4	9.9	21.5	12.2	11.1	10.1	9.2	4.1
Cooling	23.9	15.1	10.6	16.2	15.7	11.3	19.4	6.2	6.6
Water-heating equipment									
Centralized system	19.2	7.5	11.5	18.7	9.6	10.6	9.8	5.7	4.1
Distributed system	50.6	12.1	21.1	21.2	12.2	19.8	48.2	12.4	11.3
Combination of centralized and distributed systems	21.6	19.0	12.7	18.2	15.7	10.5	7.1	8.7	7.7
Generation technologies (more than one may apply)									
Reciprocating engine generators	17.5	7.6	12.6	16.0	11.8	10.6	7.5	9.2	9.0
Solar panels	24.2	35.2	32.2	22.1	31.5	23.2	10.7	12.7	19.8
Other generation technology	60.4	44.4	43.0	52.8	27.9	33.2	9.3	26.4	26.1

Relative standard errors (RSEs) for Table C27. Natural gas consumption and conditional energy intensity by census division (part 1), 2018

	RSEs for total natural gas consumption			RSEs for total floorspace of buildings using natural gas			RSEs for natural gas energy intensity		
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	12.6	7.4	9.7	11.8	9.6	9.3	5.1	5.8	3.1
Food preparation or serving areas in non-food service buildings (more than one may apply)									
Snack bar, concession stand, or coffee shop	34.8	13.9	14.6	30.7	15.8	18.2	9.5	10.0	14.0
Fast food or small restaurant	46.8	14.7	13.0	37.3	11.5	12.9	13.0	9.4	9.0
Cafeteria or large restaurant	26.2	10.9	10.1	20.9	9.8	10.2	14.5	9.8	10.0
Commercial kitchen or food preparation area	12.5	12.3	11.2	12.5	13.5	14.1	10.1	5.7	10.4
Small kitchen area	29.3	8.4	15.4	19.7	9.4	14.9	22.6	7.0	8.2
Annual consumption (hundred cubic feet)									
1,000 or less	43.8	28.8	13.6	39.0	21.0	17.3	15.7	18.0	14.6
1,001 to 5,000	16.9	13.7	20.8	17.9	12.4	19.1	23.1	10.9	12.8
5,001 to 10,000	39.0	19.5	19.8	44.0	20.9	14.7	18.8	9.4	8.7
10,001 to 25,000	28.9	17.4	13.1	15.8	17.2	11.2	20.8	7.4	4.8
25,001 to 50,000	24.1	15.2	15.9	19.2	19.2	16.2	19.6	12.3	6.4
50,001 to 100,000	44.5	15.2	15.3	28.2	14.7	14.6	24.0	7.2	8.9
Over 100,000	30.5	10.2	11.4	24.1	13.6	13.3	21.1	7.4	7.1

Data source: U.S. Energy Information Administration, Forms EIA-871A and C of the 2018 *Commercial Buildings Energy Consumption Survey*

Note: RSE is a measure of the reliability or precision of a survey statistic. Variability occurs in survey statistics because the different samples that could be drawn would each produce different values for the survey statistics. *Estimation of Standard Errors* and *What is a Relative Standard Error (RSE)?* contain more information on how RSEs are estimated and used. Both references can be accessed from <https://www.eia.gov/consumption/commercial/survey-background-technical-information.php>.

^aClimate zones are based on ASHRAE Standard 169-2021; see <https://www.eia.gov/consumption/commercial/maps.php#defined>.

^bOther sources includes wood, coal, solar, and all other energy sources.