	Total natural consumption (billion cubic	b	otal floorsp ouildings usi million squa	ng natural ga	is e	Natural gas energy intensity (cubic feet/square foot)			
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	206	285	122	5,919	10,285	4,122	34.8	27.7	29.5
Building floorspace (square feet)									
1,001 to 5,000	12	26	10	262	437	191	46.8	60.3	50.3
5,001 to 10,000	17	16	19	588	406	473	28.4	38.9	39.5
10,001 to 25,000	40	31	16	890	1,124	672	45.0	27.9	23.8
25,001 to 50,000	39	36	Q	1,092	1,422	Q	35.6	25.6	Q
50,001 to 100,000	39	50	31	1,037	2,072	803	37.3	24.0	39.1
100,001 to 200,000	27	48	20	889	1,852	926	30.5	26.0	21.5
200,001 to 500,000	17	54	11	567	1,783	384	30.6	30.1	28.2
Over 500,000	15	23	Q	595	1,189	Q	24.8	19.4	Q
Principal building activity									
Education	38	37	15	1,121	1,546	698	33.8	23.6	21.1
Food sales	Q	Q	Q	Q	_,,, , , , , , , , , , , , , , , , , ,	Q	Q	Q	Q
Food service	Q	22	Q	Q	139	Q	Q	159.9	Q
Health care	13	34	7	204	436	178	65.9	78.3	41.3
Inpatient	Q	32	Q	Q	353	Q	Q	90.3	Q
Outpatient	Q	Q	Q	Q	Q	Q	Q	Q	Q
Lodging	19	27	6	436	961	282	44.0	28.3	20.3
Mercantile	26	46	15	775	1,559	585	33.0	29.8	26.0
Retail (other than mall)	13	10	7	488	505	372	27.3	20.6	18.6
Enclosed and strip malls	Q	36	Q	Q	1,054	Q	Q	34.2	Q
Office	31	26	12	998	1,580	368	30.7	16.3	32.0
Public assembly	14	28	Q	357	978	Q	38.2	28.2	Q
Public order and safety	Q	Q	Q	Q	Q	Q	Q	Q	Q
Religious worship	Q	13	Q	Q	704	Q	Q	19.0	14.6
Service	Q	14	Q	Q	342	Q	Q	42.3	Q
Warehouse and storage	25	22	14	902	1,421	902	27.8	15.2	15.5
Other	Q	7	Q	Q	356	Q	Q	20.8	Q
Vacant	Q	Q	Q	Q	Q	Q	Q	Q	Q
Year constructed									
Before 1920	Q	9	Q	Q	250	Q	Q	37.2	Q
1920 to 1945	Q	6	Q	Q	247	Q	Q	23.4	Q
1946 to 1959	14	19	10	552	724	404	26.1	26.0	23.8
1960 to 1969	22	39	17	569	1,358	635	39.6	28.6	26.9
1970 to 1979	31	31	13	1,037	1,110	586	30.0	27.7	21.4
1980 to 1989	38	40	15	916	1,103	448	41.2	36.5	32.5
1990 to 1999	29	44	16	985	1,937	646	29.9	22.6	25.2
2000 to 2009	45	60	38	1,012	2,231	863	44.2	26.7	43.5
2010 to 2018	15	38	Q	512	1,323	Q	29.0	28.4	25.3
Climate zone ^a									
Cold or very cold	77	N	N	1,952	N	N	39.3	N	N
Cool	70	N	N	2,294	N	N	30.7	N	N
Mixed mild	59	101	Q	1,674	3,445	Q	35.0	29.2	27.5
Warm	N	155	104	1,074 N	5,559	3,476	N	27.8	29.9
Hot or very hot	N	29	104 Q	N	1,281	Q	N	27.8	23.5 Q
	IN	29	ų	IN	1,201	ų	IN	22.3	ų

	Total natura consumptior (billion cubic	1	b	otal floorsp wildings usi million squa	ng natural ga	s e	latural gas nergy inten cubic feet/s	-	
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	206	285	122	5,919	10,285	4,122	34.8	27.7	29.5
Number of floors									
1	87	109	75	2,316	3,901	2,061	37.4	28.0	36.2
2	63	68	20	1,835	2,336	1,059	34.3	29.2	19.1
3	29	40	12	976	1,238	496	29.7	31.9	25.2
4 to 9	22	56	13	628	2,002	372	35.0	28.0	33.8
10 or more	5	12	Q	163	807	Q	31.8	14.7	Q
Number of workers (main shift)									
Fewer than 5	25	30	18	871	1,105	902	28.2	26.8	19.6
5 to 9	23	22	15	546	804	582	41.9	27.3	25.3
10 to 19	32	30	15	946	968	408	34.0	30.6	35.8
20 to 49	61	47	26	1,555	1,895	946	39.5	24.9	27.3
50 to 99	25	52	29	691	1,875	509	35.6	27.7	57.3
100 to 249	24	57	11	795	2,023	489	30.4	27.9	23.0
250 or more	16	48	8	517	1,615	286	31.2	29.5	29.4
Weekly operating hours									
Fewer than 40	14	12	Q	559	751	Q	25.9	15.4	16.9
40 to 48	38	30	23	1,190	1,377	1,055	31.6	21.8	21.8
49 to 60	41	60	22	1,197	2,751	978	33.9	21.8	22.5
61 to 84	43	46	13	1,213	1,692	310	35.7	26.9	42.6
85 to 167	24	46	27	718	1,110	338	32.9	41.8	Q
Open continuously	46	91	26	1,042	2,604	834	44.4	35.0	31.6
Ownership and occupancy									
Nongovernment owned	159	224	93	4,610	7,596	2,955	34.5	29.4	31.6
Owner occupied	94	145	66	2,946	4,923	2,059	31.8	29.5	32.1
Leased to tenant or tenants	65	78	27	1,651	2,631	896	39.3	29.7	30.6
Unoccupied	Q	Q	N	Q	Q	N	Q	Q	N
Government owned	47	61	28	1,310	2,689	1,167	35.8	22.7	24.2
Federal	Q	Q	Q	Q	Q	Q	Q	13.4	Q
State	5	28	14	226	996	499	22.6	28.3	27.2
Local	36	28	Q	967	1,339	550	36.8	21.0	24.0
Party responsible for operation of energy systems									
Building owner	166	231	100	4,827	8,549	3,351	34.4	27.0	29.7
Business owner or tenant	29	39	20	685	1,190	610	42.2	32.5	32.7
Property management	Q	Q	Q	Q	260	Q	Q	28.7	Q
Other	Q	7	Q	Q	286	Q	Q	26.1	Q
Provider of direct input on energy-									
related equipment purchases									
Building owner	170	234	104	4,967	8,898	3,583	34.3	26.3	28.9
Business owner or tenant	20	29	Q	511	760	Q	38.4	37.6	Q
Property management	Q	Q	Q	Q	Q	Q	Q	Q	Q
Other	14	18	Q	345	513	Q	41.1	34.5	Q

	West North Central								
	Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	206	285	122	5,919	10,285	4,122	34.8	27.7	29.5
Number of establishments									
1	154	190	92	4,340	6,590	2,953	35.4	28.8	31.1
2 to 5	22	50	14	775	1,708	621	28.7	29.0	23.1
6 to 10	Q	15	Q	Q	798	Q	Q	18.9	Q
11 to 20	Q	16	Q	Q	553	Q	Q	28.9	Q
More than 20	Q	14	Q	Q	584	Q	Q	23.5	Q
Currently unoccupied	Q	Q	Q	Q	Q	Q	Q	Q	Q
Predominant exterior wall material									
Brick, stone, or stucco	116	179	65	2,999	5,897	2,517	38.6	30.4	25.8
Concrete (block or poured)	35	44	16	1,035	1,826	574	33.8	24.3	28.6
Concrete panels	13	27	Q	439	1,184	331	29.8	22.7	Q
Siding or shingles	17	Q	Q	Q	_, Q	Q	Q	Q	Q
Metal panels	23	16	10	877	739	505	26.1	21.9	19.4
Window glass	23 Q	Q	Q	Q	Q	Q	20.1 Q	Q	13.4 Q
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q Q
	~	4		<u>~</u>	~	~~~~~	<u> </u>	~	<u>ч</u>
Predominant roof material	20	50	22	4 000	4 000	0.62	26.0	26.4	
Metal surfacing	29	50	23	1,082	1,899	963	26.8	26.4	23.4
Synthetic or rubber	85	109	44	2,421	4,010	1,114	35.2	27.1	39.3
Built-up	49	70	22	1,250	2,394	784	39.0	29.2	28.3
Slate or tile shingles	Q	7	Q	Q	289	Q	Q	23.4	Q
Wooden materials (including									
shingles)	Q	Q	Q	Q	Q	Q	Q	Q	Q
Asphalt, fiberglass, or									
other shingles	28	33	21	826	1,026	812	33.8	32.5	26.0
Concrete	Q	8	Q	Q	334	Q	Q	24.3	Q
Other	Q	5	Q	Q	292	Q	Q	18.4	Q
Roof tilt									
Flat	123	186	75	3,266	6,260	2,008	37.8	29.6	37.4
Shallow pitch	56	66	25	1,898	2,710	1,266	29.7	24.3	19.4
Steeper pitch	26	33	22	755	1,315	848	34.4	25.3	25.9
Cool roof characteristics (more than one may apply)	2								
White or reflective coating or paint	62	116	53	1,714	4,231	1,510	36.2	27.3	35.3
White or reflective tiles or shingles	Q	8	Q	Q	383	Q	Q	21.4	Q
Aluminum coating	Q	14	Q	Q	586	Q	Q	24.4	Q
Ballasted roof system	16	21	Q	450	784	Q	34.8	27.4	Q
Other cool roof property	Q	7	Q	Q	437	Q	Q	16.2	Q

	Total natural consumption (billion cubic	1	b	otal floorsp wildings usin million squa	ng natural ga	s e	Natural gas energy intensity (cubic feet/square foot)			
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	
All buildings	206	285	122	5,919	10,285	4,122	34.8	27.7	29.5	
Renovations since 2000 (more than one may apply)										
Any type of renovation	105	144	65	2,960	5,134	1,784	35.5	28.1	36.2	
Addition or annex	35	33	31	1,088	1,146	448	32.2	28.4	68.5	
Reduction in floorspace	Q	Q	Q	Q	Q	Q	Q	Q	Q	
Roof replacement	51	67	25	1,360	2,256	840	37.8	29.7	29.5	
Interior wall reconfiguration	41	71	16	1,291	2,339	605	31.5	30.5	27.1	
Window replacement	26	27	12	751	1,069	336	34.5	25.1	34.9	
HVAC equipment upgrade	56	91	30	1,669	3,201	1,093	33.8	28.4	27.3	
Lighting upgrade	65	95	27	2,027	3,501	948	32.0	27.2	28.9	
Electrical upgrade	34	57	17	1,011	1,679	552	33.4	33.9	30.7	
Plumbing system upgrade	35	56	14	974	1,724	478	36.2	32.5	30.2	
Insulation upgrade	14	25	Q	435	780	Q	31.5	32.5	Q	
Fire, safety, or security upgrade	48	69	19	1,401	2,245	610	34.6	30.9	30.3	
Structural upgrade	Q	15	Q	Q	415	Q	Q	36.3	Q	
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	
No renovations	92	117	51	2,626	4,409	2,058	35.0	26.5	24.5	
Buildings constructed 2013 or later	9	24	Q	334	742	Q	26.4	31.9	Q	
Energy sources (more than one may apply)										
Electricity	206	285	122	5,919	10,285	4,122	34.8	27.7	29.5	
Natural gas	206	285	122	5,919	10,285	4,122	34.8	27.7	29.5	
Fuel oil	45	89	18	1,270	2,791	563	35.7	31.8	31.6	
District heat	Q	12	Q	Q	762	Q	Q	16.4	Q	
District chilled water	Q	16	Q	Q	702	Q	Q	22.4	Q	
Propane	Q	15	Q	Q	573	Q	Q	25.8	Q	
Solar	Q	7	Q	Q	321	Q	Q	22.4	Q	
Wood, coal, and other	Q	Q	Q	Q	Q	Q	Q	Q	Q	
Space-heating energy sources										
Natural gas	195	236	108	5,430	7,888	3,664	36.0	30.0	29.4	
Natural gas main	185	194	95	4,986	6,017	3,131	37.1	32.3	30.3	
Natural gas secondary	Q	42	13	444	1,871	533	23.8	22.4	24.4	
Other excluding natural gas	10	46	14	489	2,278	458	21.1	20.1	30.4	
Buildings without heating	N	Q	N	N	Q	N	N	Q	N	
Primary space-heating										
energy source										
Electricity	20	77	23	805	3,425	809	25.0	22.5	28.2	
Natural gas	185	194	95	4,986	6,017	3,131	37.1	32.3	30.3	
Fuel oil	N	Q	N	N	Q	N	N	Q	N	
District heat	Q	10	Q	Q	682	Q	Q	15.1	Q	
Propane	N	N	N	N	N	N	N	N	N	
Other sources ^b	N	Ν	N	N	N	N	N	N	N	

	Total natural consumption (billion cubic	1	b	otal floorsp uildings usi million squa	ng natural gas	s e	latural gas nergy inten cubic feet/s	-	
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	206	285	122	5,919	10,285	4,122	34.8	27.7	29.5
Cooling energy sources									
Natural gas	Q	Q	Q	Q	Q	Q	Q	Q	Q
Other excluding natural gas	201	279	121	5,693	10,147	4,068	35.3	27.4	29.7
Buildings without cooling	Q	Q	Q	Q	Q	Q	Q	Q	Q
Water-heating energy sources									
Natural gas	149	228	71	3,926	6,826	2,546	37.8	33.4	27.9
Other excluding natural gas	55	53	46	1,920	3,239	1,291	28.8	16.4	35.4
Buildings without water heating	Q	Q	Q	Q	Q	_,	Q	Q	Q
Cooking energy sources									
Natural gas	91	166	50	2,334	4,731	1,366	39.2	35.0	36.7
Other excluding natural gas	26	29	10	799	1,160	474	32.4	25.1	21.4
Buildings without cooking	88	90	62	2,786	4,394	2,283	31.7	20.5	27.0
Energy end uses (more than one may apply)									
Buildings with space heating	206	282	122	5,919	10,166	4,122	34.8	27.8	29.5
Buildings with cooling	201	280	121	5,697	10,169	4,075	35.3	27.5	29.7
Buildings with water heating	204	281	117	5,845	10,065	3,838	34.9	27.9	30.4
Buildings with cooking	117	195	60	3,133	5,891	1,839	37.5	33.1	32.7
Buildings with manufacturing	24	10	Q	699	517	Q	34.6	20.0	Q
Buildings with electricity									
generation	53	127	29	1,554	4,286	922	33.9	29.6	31.1
Buildings with lighting	205	285	119	5,906	10,285	3,999	34.8	27.7	29.8
Percentage of floorspace heated									
Not heated	N	Q	N	N	Q	N	N	Q	N
1% to 50%	Q	16	10	Q	889	610	Q	17.8	16.9
51% to 99%	30	77	34	809	3,223	1,193	37.6	23.8	28.2
100%	170	190	78	4,852	6,053	2,319	34.9	31.3	33.6
Percentage of floorspace cooled									
Not cooled	Q	Q	Q	Q	Q	Q	Q	Q	Q
1% to 50%	32	24	17	1,238	1,391	945	26.2	17.3	18.2
51% to 99%	59	97	51	1,601	3,833	1,198	37.2	25.3	42.2
100%	109	159	53	2,858	4,946	1,931	38.2	32.1	27.5
Heating equipment (more than one may apply)									
Packaged heating units	129	165	86	3,625	5,889	2,727	35.5	28.1	31.4
Furnaces	60	40	23	1,811	1,136	827	33.2	34.8	27.7
Individual space heaters	39	66	42	1,367	2,405	905	28.7	27.6	46.9
Boilers	94	128	32	2,377	3,759	1,046	39.6	34.0	30.6
Heat pumps	18	71	17	591	2,603	732	31.3	27.3	23.5
District heat	Q	12	Q	Q	760	Q	Q	16.4	Q
Duct reheat	11	41	Q	352	1,616	Q	30.7	25.6	Q
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q

	Total natural consumption (billion cubic	1	b	otal floorsp uildings usi million squa	ng natural gas	۲ و (
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	206	285	122	5,919	10,285	4,122	34.8	27.7	29.5
Cooling equipment (more than one may apply)									
Packaged air-conditioning units	144	197	93	3,887	6,725	3,100	37.0	29.3	30.1
Residential-type central air									
conditioners	67	56	24	1,894	1,715	791	35.3	32.6	30.9
Individual air conditioners	33	39	13	835	1,403	605	39.1	27.8	21.7
Central chillers	38	93	20	954	3,040	666	40.3	30.7	29.8
Heat pumps	13	45	11	477	1,809	440	26.8	25.1	23.9
District chilled water	Q	16	Q	Q	702	Q	Q	22.4	Q
Swamp coolers	Q	Q	Q	Q	Q	Q	Q	Q	Q
Other	N	Q	Q	N	Q	Q	N	Q	Q
HVAC features									
(more than one may apply)									
Economizer cycle	87	114	43	2,498	3,814	982	35.0	30.0	43.9
Variable air volume (VAV) system	60	112	20	1,836	3,950	774	32.7	28.5	25.9
Dedicated outside air system (DOAS)	25	43	9	645	1,508	306	39.0	28.4	29.0
Demand controlled ventilation (DCV)	24	42	12	570	1,231	513	41.9	34.4	22.5
Regular HVAC maintenance	166	268	102	4,939	9,628	3,271	33.6	27.9	31.3
Building automation system (BAS)									
controls heating or cooling	86	162	37	2,337	5,356	1,308	37.0	30.3	28.2
Internet-connected or smart									
thermostat	Q	15	Q	Q	778	Q	Q	19.0	Q
Programmable thermostat	44	38	42	1,445	1,725	Q	30.7	21.9	46.6
Main equipment replaced since 2000 (more than one may apply)									
Heating	80	93	39	2,636	3,251	1,478	30.5	28.7	26.3
Cooling	47	63	24	1,258	1,972	980	37.3	31.8	24.5
Water-heating equipment									
Centralized system	144	176	86	3,957	6,643	2,584	36.4	26.5	33.3
Distributed system	26	46	13	910	1,402	409	28.9	33.0	32.0
Combination of centralized and									
distributed systems	34	59	18	978	2,021	845	34.3	29.1	20.8
Generation technologies (more than one may apply)									
Reciprocating engine generators	50	119	25	1,390	3,972	794	35.9	30.1	31.8
Solar panels					312				
	Q	7	Q	Q		Q	Q	21.5	Q
Other generation technology	Q	Q	Q	Q	Q	Q	Q	Q	Q

	Total natural consumption (billion cubic	1	b	otal floorsp uildings usi million squa	ng natural gas	Natural gas energy intensity (cubic feet/square foot)			
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	206	285	122	5,919	10,285	4,122	34.8	27.7	29.5
Food preparation or serving areas in non-food service buildings (more than one may apply)									
Snack bar, concession stand, or coffee									
shop	31	53	9	840	1,698	324	37.2	31.1	28.7
Fast food or small restaurant	18	40	11	522	1,440	344	35.2	28.0	31.6
Cafeteria or large restaurant	32	73	12	973	2,196	559	32.5	33.1	21.3
Commercial kitchen or									
food preparation area	59	92	20	1,457	2,882	702	40.2	32.0	28.9
Small kitchen area	52	64	17	1,495	2,472	694	34.5	25.7	24.0
Annual consumption (hundred cubic feet)									
1,000 or less	Q	7	3	Q	877	440	13.1	7.5	7.3
1,001 to 5,000	24	28	21	958	1,561	996	24.7	18.2	21.2
5,001 to 10,000	34	35	15	1,110	1,601	711	30.6	22.0	21.2
10,001 to 25,000	44	58	29	1,110	2,283	942	37.8	25.5	30.9
25,001 to 50,000	43	46	13	992	1,522	470	43.6	30.0	27.3
50,001 to 100,000	27	48	13	592	1,198	295	46.2	40.1	37.6
Over 100,000	28	62	29	714	1,242	268	39.7	50.3	109.2

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.

	RSEs for tota consumption	-			l floorspace on ng natural gas		RSEs for natural gas energy intensity		
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	11.8	6.9	20.1	13.6	7.1	22.3	5.8	3.5	12.1
Building floorspace (square feet)									
1,001 to 5,000	29.0	21.7	22.3	35.9	15.1	28.4	18.1	19.3	19.6
5,001 to 10,000	26.4	30.6	43.2	41.3	23.3	31.6	43.3	30.9	16.4
10,001 to 25,000	23.1	27.3	39.9	19.4	21.6	42.3	10.2	12.2	13.4
25,001 to 50,000	29.1	14.6	36.7	34.3	12.1	40.8	12.7	12.1	9.0
50,001 to 100,000	21.7	17.2	40.6	31.5	11.8	19.1	26.0	11.3	42.4
100,001 to 200,000	19.9	14.5	44.3	14.7	14.4	34.6	10.2	12.6	15.4
200,001 to 500,000	23.1	13.6	12.4	18.7	11.0	14.3	10.1	11.8	16.3
Over 500,000	29.4	19.1	31.5	28.4	23.6	41.0	16.6	16.3	63.4
Principal building activity									
Education	27.7	21.4	32.8	32.0	21.9	28.2	17.4	12.4	9.3
Food sales	69.0	81.1	64.1	74.8	62.3	52.0	11.0	45.8	32.6
Food service	32.4	24.0	43.7	16.6	26.7	47.6	30.4	23.4	13.2
Health care	25.8	17.3	37.2	20.7	19.4	26.0	13.5	9.3	35.4
Inpatient	26.5	16.8	33.9	26.6	17.6	22.1	15.0	9.7	35.8
Outpatient	59.3	36.1	58.1	46.4	36.4	40.6	25.3	22.8	47.4
Lodging	15.8	14.9	40.4	15.9	18.4	42.0	9.0	10.1	8.2
Mercantile	22.0	19.5	22.1	15.3	18.4	20.3	18.0	7.1	20.8
Retail (other than mall)	26.6	22.3	43.9	30.5	25.7	40.0	19.3	10.5	18.2
Enclosed and strip malls	45.2	22.0	31.0	38.1	21.0	26.1	25.4	8.5	20.4
Office	29.2	14.3	24.5	20.5	17.3	26.2	13.8	11.7	14.7
Public assembly	31.5	23.5	45.0	22.8	14.0	53.7	28.7	16.7	17.4
Public order and safety	51.9	42.7	51.8	48.7	42.6	30.3	13.8	17.3	49.5
Religious worship	47.2	29.0	62.0	45.7	25.8	54.5	8.3	13.9	20.8
Service	47.6	41.7	51.8	37.1	25.3	37.0	37.9	32.4	49.8
Warehouse and storage	35.6	32.0	34.5	29.5	27.2	40.3	12.9	13.7	11.5
Other	72.6	45.6	57.1	74.5	49.1	55.8	7.5	17.9	41.6
Vacant	72.0	41.7	59.9	62.7	31.4	60.3	73.1	21.1	5.8
Year constructed									
Before 1920	64.9	28.2	51.3	57.0	30.0	79.4	47.5	10.3	125.4
1920 to 1945	47.0	31.1	48.9	55.9	33.7	51.7	36.9	17.0	31.8
1946 to 1959	46.2	28.4	42.4	49.4	24.6	35.5	16.8	15.9	11.4
1960 to 1969	20.1	14.1	19.0	24.4	14.6	21.5	24.3	7.7	8.3
1970 to 1979	18.0	14.7	17.2	20.7	14.8	8.4	11.3	7.3	15.6
1980 to 1989	26.9	20.1	23.1	21.4	15.0	19.7	6.9	16.1	24.6
1990 to 1999	28.6	14.5	30.6	33.8	14.9	39.6	13.0	11.7	26.8
2000 to 2009	22.6	19.6	42.7	27.1	13.8	45.6	10.7	8.4	41.6
2010 to 2018	26.2	19.0	61.6	26.1	20.7	54.7	14.5	21.2	31.0
Climate zone ^a									
Cold or very cold	22.8	0.0	0.0	26.1	0.0	0.0	9.3	0.0	0.0
Cool	18.2	0.0	0.0	26.1	0.0	0.0	12.1	0.0	0.0
Mixed mild	23.3	14.0	56.7	21.4	14.8	60.5	5.1	7.0	11.7
Warm	0.0	13.1	29.6	0.0	13.3	33.2	0.0	2.4	14.6
Hot or very hot	0.0	21.1	71.2	0.0	30.9	70.7	0.0	17.3	2.9

		RSEs for total natural gas consumption			l floorspace o ng natural gas		RSEs for natural gas energy intensity		
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	11.8	6.9	20.1	13.6	7.1	22.3	5.8	3.5	12.1
Number of floors									
1	17.6	14.9	27.1	20.4	12.8	26.7	15.0	6.7	19.5
2	22.3	13.9	35.0	20.7	10.7	34.8	9.3	13.3	8.2
3	19.5	24.0	20.4	22.7	20.1	29.6	17.5	15.8	33.0
4 to 9	19.4	10.7	33.9	26.7	16.1	32.4	13.7	12.5	12.2
10 or more	38.9	23.0	15.9	30.7	32.0	30.0	25.2	17.0	25.2
Number of workers (main shift)									
Fewer than 5	25.0	32.7	37.8	38.4	22.8	42.8	28.7	18.4	8.9
5 to 9	26.3	17.6	43.1	23.7	14.3	35.0	15.0	18.2	13.5
10 to 19	29.5	15.8	30.2	34.9	21.6	27.9	11.6	13.8	28.5
20 to 49	24.3	17.1	23.0	24.9	16.0	27.1	11.3	15.1	17.9
50 to 99	24.3	14.3	46.7	21.6	14.9	29.1	10.4	13.8	38.4
100 to 249	23.2	17.8	20.6	22.9	14.2	22.5	11.3	7.4	15.9
250 or more	20.5	13.2	23.9	20.4	14.1	20.2	18.6	17.0	23.0
Weekly operating hours									
Fewer than 40	40.6	36.7	50.9	37.0	25.9	51.5	7.5	16.7	3.0
40 to 48	17.4	18.7	32.6	20.5	15.4	29.4	21.8	10.7	8.7
49 to 60	25.3	13.6	20.7	21.7	10.1	19.9	10.5	8.8	11.6
61 to 84	21.1	18.1	39.7	17.0	12.9	28.3	9.8	11.1	29.4
85 to 167	21.1	17.9	44.5	22.8	10.0	41.5	19.0	14.0	53.9
Open continuously	7.9	14.1	14.5	8.5	18.6	19.5	4.2	10.1	16.6
Ownership and occupancy									
Nongovernment owned	9.7	6.5	23.8	12.2	7.5	27.7	4.7	4.3	18.0
Owner occupied	10.4	7.1	24.4	15.0	9.0	22.4	7.8	6.3	23.4
Leased to tenant or tenants	17.2	10.5	34.5	17.2	10.4	42.7	5.0	7.3	15.8
Unoccupied	95.7	67.5	0.0	83.6	56.4	0.0	11.0	67.0	0.0
Government owned	22.6	22.5	31.5	26.2	20.7	24.3	16.9	10.9	14.0
Federal	71.3	51.5	49.7	48.2	50.5	56.4	34.4	28.2	38.5
State	20.5	38.0	18.9	22.5	38.5	8.8	12.8	17.9	15.6
Local	25.6	22.3	56.6	32.1	18.1	44.5	20.4	10.2	19.5
Party responsible for operation of energy systems									
Building owner	12.3	8.2	22.3	16.5	8.1	22.4	7.1	4.6	15.3
Business owner or tenant	28.7	20.6	28.8	33.5	23.7	30.1	13.2	12.2	20.3
Property management	50.3	51.9	78.1	53.0	32.2	36.3	19.2	29.7	92.0
Other	45.1	34.9	61.9	44.0	30.0	59.4	25.8	25.4	5.8
Provider of direct input on energy-									
related equipment purchases									
Building owner	12.2	8.1	21.3	15.8	8.0	23.1	6.4	4.1	14.7
Business owner or tenant	38.5	23.9	32.3	39.4	25.9	34.5	16.4	18.1	38.8
Property management	53.3	67.4	102.9	59.5	55.0	45.3	25.3	17.3	100.6
Other	31.2	23.5	44.1	29.9	18.8	34.5	18.0	11.6	56.7

	RSEs for tota consumption	-			l floorspace on ng natural ga		-			
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	
All buildings	11.8	6.9	20.1	13.6	7.1	22.3	5.8	3.5	12.1	
Number of establishments										
1	14.5	10.8	22.8	17.2	11.3	22.6	10.7	4.0	15.8	
2 to 5	11.4	18.3	29.9	12.5	16.3	44.3	9.9	7.8	27.0	
6 to 10	34.0	20.7	37.1	32.7	19.2	26.6	33.0	17.0	16.1	
11 to 20	68.0	29.1	47.4	62.7	21.9	33.5	13.8	17.9	25.0	
More than 20	29.4	24.1	66.1	40.9	25.6	43.8	22.8	35.5	44.9	
Currently unoccupied	86.2	62.8	59.9	56.0	41.0	60.3	21.3	46.8	5.8	
Predominant exterior wall material										
Brick, stone, or stucco	13.8	10.6	20.6	14.4	11.7	22.7	6.7	5.1	6.7	
Concrete (block or poured)	16.0	12.7	36.8	17.8	11.3	44.3	10.8	9.1	15.9	
Concrete panels	22.3	20.6	51.8	29.1	18.0	40.0	11.1	21.5	57.4	
Siding or shingles	35.7	27.2	38.0	53.9	22.9	30.9	55.2	16.1	24.3	
Metal panels	29.3	28.0	29.0	27.3	23.9	23.4	8.3	18.2	18.1	
Window glass	58.6	48.3	111.7	40.7	34.7	81.1	31.1	25.8	119.6	
Other	47.5	47.2	67.7	48.3	50.1	39.0	31.4	45.1	56.2	
Predominant roof material										
Metal surfacing	24.4	19.6	40.7	25.7	10.8	29.3	5.8	14.4	17.1	
Synthetic or rubber	10.7	11.1	33.0	11.8	9.7	35.1	8.4	10.6	32.7	
Built-up	26.0	14.0	15.5	23.8	10.1	10.5	7.4	8.6	12.5	
Slate or tile shingles	39.5	29.1	21.5	39.2	32.6	23.9	12.9	29.2	5.3	
Wooden materials (including										
shingles)	99.7	29.4	47.2	99.7	36.6	48.1	0.0	36.6	14.3	
Asphalt, fiberglass, or										
other shingles	18.8	18.0	25.0	20.7	14.2	27.1	16.8	9.6	19.2	
Concrete	69.8	23.4	79.0	63.3	19.8	87.4	49.7	13.0	43.0	
Other	64.8	37.4	47.0	43.1	28.5	42.6	44.9	43.2	28.0	
Roof tilt										
Flat	15.3	8.4	20.2	14.9	9.0	13.2	8.5	7.0	16.1	
Shallow pitch	14.9	11.8	40.2	15.8	11.5	38.2	7.9	7.0	11.5	
Steeper pitch	19.0	15.2	28.3	17.6	15.5	25.0	11.1	15.9	9.2	
Cool roof characteristics (more than c may apply)	one									
White or reflective coating or paint	19.0	9.4	27.1	20.6	8.3	23.7	4.8	7.1	24.8	
White or reflective tiles or shingles	73.5	28.4	42.3	73.2	30.3	36.7	7.9	22.4	14.1	
Aluminum coating	29.6	32.3	35.5	31.3	21.7	33.4	16.8	22.1	17.0	
Ballasted roof system	28.6	17.8	59.5	26.8	17.4	68.9	9.7	12.9	62.5	
Other cool roof property	89.7	44.6	61.0	71.5	47.6	61.5	29.1	20.7	65.6	
		-		-	-	-	-	-		

	RSEs for tota consumption	-		RSEs for total floorspace of buildings using natural gas			RSEs for natural gas energy intensity		
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	11.8	6.9	20.1	13.6	7.1	22.3	5.8	3.5	12.1
Renovations since 2000									
(more than one may apply)									
Any type of renovation	12.3	9.4	23.6	10.3	9.9	24.3	6.6	6.0	21.8
Addition or annex	9.0	17.3	42.9	10.1	17.2	31.5	11.4	18.5	43.2
Reduction in floorspace	83.8	44.0	38.3	75.3	46.2	43.3	92.2	24.7	50.7
Roof replacement	11.1	12.0	19.5	9.9	15.3	19.1	7.9	12.9	10.6
Interior wall reconfiguration	16.0	13.5	15.9	12.2	10.1	15.2	12.0	11.0	15.8
Window replacement	20.6	27.4	13.3	16.0	19.0	16.6	16.0	17.7	23.1
HVAC equipment upgrade	11.7	11.5	20.8	21.6	13.0	21.8	14.0	8.6	6.7
Lighting upgrade	13.4	11.7	16.3	15.3	10.1	20.1	9.0	6.8	7.8
Electrical upgrade	25.9	14.4	21.7	30.8	18.4	30.7	14.7	13.8	17.6
Plumbing system upgrade	8.7	15.5	16.5	15.6	15.0	10.7	14.9	11.5	14.5
Insulation upgrade	30.4	20.1	29.0	27.8	22.4	29.4	16.7	23.3	27.8
Fire, safety, or security upgrade	15.6	12.6	22.7	17.6	12.2	20.5	14.7	10.1	18.7
Structural upgrade	33.3	21.2	59.3	23.4	23.9	61.6	19.9	18.6	31.9
Other	59.9	41.5	30.2	75.1	27.5	35.4	61.8	26.6	10.1
No renovations	16.3	12.9	16.4	19.5	11.5	16.7	6.9	8.2	3.8
Buildings constructed 2013 or later	23.1	25.8	63.1	25.8	29.8	59.6	15.3	27.9	30.6
Energy sources (more than one may apply) Electricity	11.8	6.9	20.1	13.6	7.1	22.3	5.8	3.5	12.1
Natural gas	11.8	6.9	20.1	13.6	7.1	22.3	5.8	3.5	12.1
Fuel oil	11.4	9.8	20.5	15.0	12.1	25.2	10.2	9.4	14.9
District heat	45.9	38.2	69.1	35.1	41.8	60.8	40.5	30.9	19.5
District chilled water	67.2	44.9	72.1	49.2	35.5	62.3	55.0	34.9	22.6
Propane	60.5	23.1	29.1	54.1	21.7	39.8	12.6	12.1	45.2
Solar	36.0	23.0	103.9	35.2	36.6	83.5	13.8	32.5	88.0
Wood, coal, and other	68.9	55.8	103.4	69.1	37.5	55.0	25.9	56.6	97.1
Space-heating energy sources									
Natural gas	12.0	7.5	20.0	13.6	6.4	22.5	4.8	3.9	13.5
Natural gas main	12.2	9.0	19.1	13.0	9.2	23.0	4.2	4.6	15.6
Natural gas secondary	53.8	15.7	34.9	48.9	12.5	26.7	12.0	11.0	17.8
Other excluding natural gas	40.9	15.4	30.3	24.7	16.1	26.4	38.6	14.0	13.5
Buildings without heating	0.0	35.3	0.0	0.0	35.1	0.0	0.0	35.3	0.0
Primary space-heating energy source									
Electricity	30.2	13.3	38.0	37.4	12.2	35.9	22.8	8.8	10.3
Natural gas	12.2	9.0	19.1	13.0	9.2	23.0	4.2	4.6	15.6
Fuel oil	0.0	77.3	0.0	0.0	72.7	0.0	0.0	163.1	0.0
District heat	42.7	35.5	63.6	43.3	45.8	52.3	39.7	30.3	24.3
Propane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	RSEs for tota consumption	-			l floorspace o ng natural gas		RSEs for natural gas energy intensity		
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	11.8	6.9	20.1	13.6	7.1	22.3	5.8	3.5	12.1
Cooling energy sources									
Natural gas	44.4	60.4	50.2	44.4	52.9	50.2	0.0	42.1	0.0
Other excluding natural gas	11.5	6.5	20.4	12.7	7.1	22.6	5.5	3.3	12.2
Buildings without cooling	62.6	52.2	33.2	53.0	52.0	40.3	19.3	22.1	24.8
Water-heating energy sources									
Natural gas	15.4	8.2	14.0	15.9	10.0	15.5	8.0	4.4	4.9
Other excluding natural gas	20.9	14.6	33.6	19.0	10.6	35.5	8.8	8.9	29.8
Buildings without water heating	79.6	39.9	64.8	67.9	29.1	50.3	29.8	25.7	29.0
	79.0		04.0	07.9	23.1	50.5	29.8	23.7	29.0
Cooking energy sources						22.4			
Natural gas	9.4	7.8	22.2	11.8	7.4	23.1	6.7	4.6	6.8
Other excluding natural gas	24.9	14.8	24.4	21.7	14.0	24.3	15.9	10.1	27.1
Buildings without cooking	19.4	11.4	26.7	21.5	10.2	24.9	6.6	6.5	20.9
Energy end uses									
(more than one may apply)	11.0	6.0	20.1	12.6	7.3	22.2	ГО	2 5	12.1
Buildings with space heating	11.8	6.9	20.1	13.6		22.3	5.8	3.5	
Buildings with cooling	11.5	6.6	20.3	12.8	7.1	22.4	5.4	3.3	12.2
Buildings with water heating	11.8	6.9	19.7	13.4	7.3	21.3	5.8	3.7	12.3
Buildings with cooking	8.8	7.9	21.4	11.3	7.5	20.9	7.6	3.9	6.0
Buildings with manufacturing	40.4	34.2	41.1	34.8	27.6	29.6	23.4	20.5	18.6
Buildings with electricity	11.8	7.8	22.8	12.7	9.9	28.8	5.4	7.1	10.8
generation Buildings with lighting	11.8	6.9	19.1	12.7	9.9 7.1	28.8	5.8	3.5	10.8
Buildings with lighting	11.0	0.9	19.1	13.0	/.1	20.3	5.0	5.5	12.0
Percentage of floorspace heated									
Not heated	0.0	35.3	0.0	0.0	35.1	0.0	0.0	35.3	0.0
1% to 50%	37.0	29.9	23.4	43.4	22.8	17.3	44.9	23.5	15.7
51% to 99%	16.2	13.4	16.1	16.5	12.8	27.2	8.1	9.5	14.4
100%	13.2	9.1	24.5	14.3	6.8	23.2	5.9	5.1	16.3
Percentage of floorspace cooled									
Not cooled	62.6	52.2	33.2	53.0	52.0	40.3	19.3	22.1	24.8
1% to 50%	27.7	17.6	29.5	20.0	20.3	29.9	14.8	11.6	9.0
51% to 99%	17.1	12.8	29.7	16.0	13.3	29.9	7.7	6.7	27.6
100%	14.7	7.6	22.8	16.2	8.2	23.1	8.0	5.0	5.8
Heating equipment (more than one may apply)									
Packaged heating units	14.3	8.6	25.7	14.1	7.3	30.7	9.6	4.5	19.1
Furnaces	19.8	21.2	12.5	19.6	19.4	14.7	8.4	12.1	8.2
Individual space heaters	18.0	14.8	32.8	21.5	11.4	26.7	15.0	8.5	36.9
Boilers	13.3	9.8	17.3	14.3	6.8	13.5	6.4	9.1	8.6
Heat pumps	24.9	13.5	21.0	28.5	9.4	20.1	17.7	7.8	11.9
District heat	41.6	38.4	69.1	35.5	42.0	60.8	34.6	31.0	19.5
Duct reheat	31.2	16.4	38.4	23.7	15.2	24.7	16.7	11.8	23.3
Other	98.5	40.3	50.7	98.5	37.8	50.7	0.0	9.0	0.0

	RSEs for tota consumption	-			l floorspace ng natural ga		_		
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	11.8	6.9	20.1	13.6	7.1	22.3	5.8	3.5	12.1
Cooling equipment (more than one may apply)									
Packaged air-conditioning units	13.1	7.8	24.1	11.5	7.7	28.2	6.5	3.7	16.7
Residential-type central air									
conditioners	16.3	18.8	14.0	18.0	16.1	18.7	8.6	5.5	15.9
Individual air conditioners	22.1	17.5	25.2	24.5	16.2	25.0	9.7	6.5	8.2
Central chillers	10.8	11.5	21.8	12.4	13.6	16.4	7.1	9.8	12.3
Heat pumps	33.7	19.6	36.2	37.6	14.5	24.2	23.9	14.7	28.8
District chilled water	67.2	44.9	72.1	49.2	35.5	62.3	55.0	34.9	22.6
Swamp coolers	53.0	57.9	59.6	52.8	43.1	55.5	31.7	41.6	6.2
Other	0.0	103.1	50.9	0.0	103.1	50.9	0.0	0.0	0.0
HVAC features (more than one may apply)									
Economizer cycle	11.7	8.0	31.6	11.6	11.2	21.8	5.7	7.5	26.8
Variable air volume (VAV) system	10.2	13.2	29.4	11.0	13.4	13.2	10.4	8.7	20.0
Dedicated outside air system (DOAS)	24.6	20.5	35.9	31.9	22.6	25.0	16.1	12.6	25.8
Demand controlled ventilation (DCV)	24.0	15.7	28.2	22.0	15.8	26.9	15.2	16.7	25.8
Regular HVAC maintenance	10.4	7.5	24.9	12.2	7.4	20.5	7.7	3.3	15.7
Building automation system (BAS)	10.4	7.5	24.5	12.2	7.4	27.5		5.5	15.7
controls heating or cooling	9.9	7.6	15.3	9.5	8.0	13.5	5.5	6.1	5.5
Internet-connected or smart									
thermostat	33.4	23.9	42.5	28.1	32.5	48.8	30.9	20.3	27.1
Programmable thermostat	25.8	17.2	41.6	27.2	12.0	54.5	10.4	12.4	47.5
Main equipment replaced since									
2000 (more than one may apply)									
Heating	14.4	14.3	26.4	10.5	11.4	30.4	12.7	11.4	10.8
Cooling	23.6	12.6	9.4	23.5	9.9	14.2	5.3	7.4	13.3
Water-heating equipment									
Centralized system	16.0	8.7	19.3	17.0	9.9	14.9	5.7	4.6	14.5
Distributed system	22.9	15.9	20.6	15.6	19.0	15.9	12.3	9.9	15.9
Combination of centralized and									
distributed systems	19.6	15.5	48.7	13.7	13.1	46.7	14.7	14.7	7.9
Generation technologies									
(more than one may apply)	10.0		24.0	45 -	~ ~ ~	24.2	~ ~		
Reciprocating engine generators	12.8	7.8	21.9	15.5	9.8	31.0	6.9	8.0	14.8
Solar panels	36.8	26.4	103.9	35.7	37.8	83.5	14.2	34.4	88.0
Other generation technology	2.8	48.0	49.9	2.8	49.8	47.5	0.0	14.9	20.8

	RSEs for total natural gas consumption		RSEs for total floorspace of buildings using natural gas				RSEs for natural gas energy intensity		
	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central	West North Central	South Atlantic	East South Central
All buildings	11.8	6.9	20.1	13.6	7.1	22.3	5.8	3.5	12.1
Food preparation or serving areas in non-food service buildings (more than one may apply)									
Snack bar, concession stand, or coffee									
shop	20.8	15.4	41.6	16.7	17.4	48.3	9.3	10.8	12.9
Fast food or small restaurant	18.5	17.5	18.0	20.2	13.3	16.3	11.3	17.7	21.8
Cafeteria or large restaurant	9.3	13.2	31.5	18.3	11.9	11.6	14.5	11.9	25.1
Commercial kitchen or									
food preparation area	15.1	11.8	20.9	14.6	9.5	18.5	6.7	6.2	10.5
Small kitchen area	11.6	13.3	21.7	13.3	15.2	28.0	11.2	9.0	20.5
Annual consumption (hundred cubic feet)									
1,000 or less	65.4	15.3	23.1	62.5	17.7	14.8	6.5	11.9	16.4
1,001 to 5,000	25.6	14.7	31.6	28.3	12.8	32.3	7.8	10.9	2.9
5,001 to 10,000	24.1	25.4	42.7	23.2	20.9	36.5	10.0	7.4	21.7
10,001 to 25,000	18.6	14.1	29.4	16.5	13.4	23.6	9.7	8.3	11.1
25,001 to 50,000	25.8	18.3	34.1	19.1	13.2	32.7	10.0	8.5	15.8
50,001 to 100,000	20.4	21.2	22.3	16.6	20.3	15.3	12.9	12.5	12.0
Over 100,000	18.4	12.8	44.2	29.6	20.0	15.7	16.1	18.3	32.8

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.

^a*Climate zones* are based on ASHRAE Standard 169-2021; see https://www.eia.gov/consumption/commercial/maps.php#defined. ^b*Other sources* includes wood, coal, solar, and all other energy sources.