Table C17. Electricity consumption and conditional energy intensity by census division (part 1), 2018

Total floorspace of buildings using electricity (million square feet)

	(billion kilov	vattnours [K\	wnj) (million squa	re feet)	(kwn/square	e foot)	
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	43	146	203	3,737	12,074	17,374	11.6	12.1	11.7
Building floorspace (square feet)									
1,001 to 5,000	4	7	21	473	636	1,449	8.4	11.5	14.3
5,001 to 10,000	5	5	17	449	670	1,803	10.6	8.1	9.4
10,001 to 25,000	8	15	31	770	1,525	2,802	10.7	10.0	11.1
25,001 to 50,000	7	24	30	505	1,635	2,830	14.7	14.8	10.7
50,001 to 100,000	6	18	30	518	1,677	2,624	11.6	11.0	11.6
100,001 to 200,000	6	23	21	538	2,121	1,742	11.3	11.0	12.3
200,001 to 500,000	5	28	30	341	2,043	2,451	14.4	13.8	12.3
Over 500,000	Q	24	23	Q	1,766	1,673	Q	13.5	13.5
Principal building activity									
Education	4	16	19	621	1,924	2,435	7.0	8.2	7.7
Food sales	Q	Q	16	Q	Q	281	Q	Q	55.3
Food service	Q	Q	10	Q	Q	216	Q	Q	45.5
Health care	4	11	22	194	585	838	20.2	18.6	26.1
Inpatient	Q	6	17	Q	276	583	Q	22.1	29.6
Outpatient	Q	5	5	Q	308	255	Q	15.4	18.1
Lodging	4	13	18	322	884	1,072	12.6	14.1	16.9
Mercantile	Q	16	28	Q	1,040	1,756	Q	15.1	16.2
Retail (other than mall)	Q	4	11	Q	371	900	Q	11.4	12.8
Enclosed and strip malls	Q	12	17	Q	669	856	Q	17.2	19.8
Office	5	39	36	454	2,741	2,943	12.1	14.1	12.2
Public assembly	4	6	16	424	682	1,384	9.9	9.4	11.8
Public order and safety	Q	Q	Q	Q	Q	Q	Q	Q	Q
Religious worship	Q	3	4	Q	510	963	Q	5.5	3.7
Service	3	6	9	323	944	1,279	9.4	6.5	6.7
Warehouse and storage	2	11	14	457	1,836	3,326	5.2	6.1	4.3
Other	Q	18	8	Q	465	400	Q	38.9	21.1
Vacant	Q	Q	Q	Q	Q	Q	Q	Q	Q
Year constructed									
Before 1920	2	8	7	360	925	924	6.8	9.1	8.1
1920 to 1945	2	17	15	259	1,284	1,464	9.4	13.0	10.4
1946 to 1959	Q	12	8	Q	1,324	938	Q	9.1	8.9
1960 to 1969	6	16	21	406	1,639	2,081	13.8	9.7	10.1
1970 to 1979	5	24	35	426	1,830	2,594	11.3	13.3	13.4
1980 to 1989	10	22	23	646	1,335	1,633	16.2	16.5	14.0
1990 to 1999	5	16	28	533	1,415	2,614	10.1	11.5	10.7
2000 to 2009	8	17	41	713	1,384	3,275	11.8	12.4	12.4
2010 to 2018	Q	13	25	Q	938	1,851	Q	14.0	13.5
Climate zone ^a									
Cold or very cold	10	Q	20	872	Q	2,222	11.1	6.4	9.1
Cool	30	46	141	2,554	4,386	11,829	11.7	10.4	11.9
Mixed mild	Q	99	42	Q	7,473	3,322	12.8	13.2	12.8
Warm	N	N	N	N	N	N	N	N	N
Hot or very hot	N	N	N	N	N	N	N	N	N

Table C17. Electricity consumption and conditional energy intensity by census division (part 1), 2018

Total floorspace of buildings using electricity (million square feet)

	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	43	146	203	3,737	12,074	17,374	11.6	12.1	11.7
Number of floors									
1	14	38	84	1,087	3,281	7,650	13.2	11.6	11.0
2	9	29	49	894	3,081	4,549	10.5	9.6	10.7
3	8	24	26	809	1,599	2,296	10.1	15.1	11.1
4 to 9	9	29	30	785	2,525	1,906	11.1	11.6	15.7
10 or more	3	25	15	162	1,589	973	16.7	15.9	15.8
Elevators and escalators									
(more than one may apply)									
Any elevators	20	85	86	1,655	6,543	6,663	12.0	13.0	13.0
1 elevator	8	24	29	790	2,318	2,931	9.5	10.4	9.8
2 to 5 elevators	8	33	28	606	2,398	2,191	12.6	13.7	12.9
6 or more elevators	5	28	29	258	1,827	1,540	18.0	15.3	19.1
Any escalators	Q	11	8	Q	826	502	Q	13.0	15.8
Number of workers (main shift)									
Fewer than 5	7	16	34	916	2,050	4,048	7.7	7.6	8.4
5 to 9	4	7	18	498	786	1,884	8.8	9.3	9.5
10 to 19	3	13	23	343	1,128	2,171	8.1	11.1	10.5
20 to 49	9	21	39	650	1,647	2,747	14.5	12.6	14.2
50 to 99	9	25	25	518	1,829	2,280	16.5	13.5	11.0
100 to 249	6	28	29	509	2,134	2,307	11.3	13.0	12.4
250 or more	5	37	36	303	2,500	1,937	18.1	15.0	18.5
Weekly operating hours									
Fewer than 40	Q	6	15	Q	1,137	2,005	Q	5.6	7.7
40 to 48	5	12	22	720	1,599	3,307	7.3	7.7	6.8
49 to 60	7	27	33	887	3,092	3,837	7.8	8.7	8.5
61 to 84	8	27	31	550	2,196	2,685	15.3	12.3	11.4
85 to 167	8	19	34	448	1,374	2,082	18.1	13.5	16.3
Open continuously	14	55	68	926	2,676	3,458	14.8	20.5	19.8
Ownership and occupancy									
Nongovernment owned	37	122	167	3,047	9,509	13,686	12.2	12.8	12.2
Owner occupied	25	67	103	2,162	5,476	8,371	11.5	12.2	12.3
Leased to tenant or tenants	12	55	64	876	3,904	5,219	14.1	14.1	12.2
Unoccupied	Q	Q	Q	Q	Q	Q	Q	Q	Q
Government owned	6	24	37	690	2,566	3,688	9.0	9.4	9.9
Federal	Q	Q	4	Q	Q	272	Q	Q	14.6
State	Q	8	9	Q	775	968	Q	10.4	9.8
Local	3	13	23	462	1,586	2,448	7.3	8.3	9.4
Party responsible for operation									
of energy systems Building owner	35	120	171	3,247	10,099	14,542	10.8	11.9	11.8
Business owner or tenant	6	20	22	358	1,638	2,060	18.2	12.3	10.7
	Q			336 Q	1,036 Q				
Property management Other		Q	Q	Q	Q	Q 473	Q	Q	Q 12.2
Other	Q	Q	6	<u>u</u>	<u>U</u>	4/3	Q	Q	12.2

Table C17. Electricity consumption and conditional energy intensity by census division (part 1), 2018

Total floorspace of buildings using electricity (million square feet)

	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	43	146	203	3,737	12,074	17,374	11.6	12.1	11.7
Provider of direct input on energy- related equipment purchases									
Building owner	35	125	177	3,270	10,580	15,182	10.8	11.8	11.7
Business owner or tenant	Q	12	13	Q	944	1,154	Q	12.9	11.4
Property management	Q	Q	Q	Q	Q	Q	Q	Q	Q
Other	Q	7	10	Q	420	880	Q	17.2	11.7
Number of establishments									
1	31	87	135	2,688	7,465	12,262	11.5	11.7	11.0
2 to 5	6	24	39	575	2,221	2,841	11.0	10.6	13.7
6 to 10	Q	12	10	Q	890	934	Q	13.9	10.9
11 to 20	Q	11	8	Q	611	474	Q	18.7	16.0
More than 20	Q	11	12	Q	740	682	Q	15.3	16.9
Currently unoccupied	Q	Q	Q	Q	Q	Q	Q	Q	Q
Predominant exterior wall material									
Brick, stone, or stucco	14	79	106	1,368	6,639	8,001	10.2	12.0	13.3
Concrete (block or poured)	10	36	42	721	2,846	3,405	13.9	12.5	12.2
Concrete panels	Q	12	12	Q	712	1,599	Q	16.4	7.7
Siding or shingles	10	6	14	731	552	1,255	13.4	10.4	11.2
Metal panels	5	5	18	436	699	2,403	11.2	6.4	7.6
Window glass	Q	5	4	Q	324	298	Q	14.9	13.2
Other	Q	Q	7	Q	Q	413	Q	Q	16.6
Predominant roof material									
Metal surfacing	4	8	25	565	1,231	3,178	7.1	6.4	8.0
Synthetic or rubber	23	73	86	1,548	5,443	5,916	14.9	13.4	14.6
Built-up	4	30	44	403	2,677	3,651	8.9	11.4	11.9
Slate or tile shingles	Q	3	8	Q	471	729	Q	7.0	10.5
Wooden materials (including									
shingles)	Q	Q	Q	Q	Q	Q	Q	Q	Q
Asphalt, fiberglass, or other shingles	8	21	32	724	1,590	3,192	11.7	13.2	10.1
Concrete	Q	2	Q	724 Q	229	3,192 Q	Q Q	9.4	10.1 Q
Other	Q	Q	4	Q	374	342	Q	9.4 Q	12.8
Roof tilt	25	115	120	1.020	0.724	0.277	12.0	12.2	12.7
Flat	25	115	129	1,838	8,734	9,377	13.6	13.2	13.7
Shallow pitch	10	19	51	899	1,736	5,157	10.6	11.2	9.9
Steeper pitch	9	11	24	1,000	1,604	2,840	8.9	6.9	8.3
Cool roof characteristics (more than one									
may apply)	40	40		CEO	2 102	4 776	447	12.0	
White or reflective coating or paint	10	40	66	658	3,103	4,776	14.7	12.9	13.7
White or reflective tiles or shingles	Q	6	5	Q	377	392	Q	17.2	13.2
Aluminum coating	Q	7 17	6	Q 194	823	1 767	Q 12.7	8.4	9.5
Ballasted roof system Other seel roof preparty	2		24	184	1,089	1,767	12.7	15.5	13.6
Other cool roof property	Q	Q	Q	Q	Q	Q	Q	Q	Q

Table C17. Electricity consumption and conditional energy intensity by census division (part 1), 2018

Total floorspace of buildings using electricity (million square feet)

	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	43	146	203	3,737	12,074	17,374	11.6	12.1	11.7
Renovations since 2000 (more than one may apply)									
Any type of renovation	25	80	111	1,791	6,616	8,893	14.1	12.1	12.5
Addition or annex	6	16	34	468	1,422	2,744	12.7	11.0	12.5
Reduction in floorspace	Q	7	7	Q	420	478	Q	15.6	14.7
Roof replacement	12	40	55	880	3,501	4,273	13.4	11.5	12.9
Interior wall reconfiguration	14	44	57	744	3,465	4,627	18.2	12.6	12.4
Window replacement	7	23	34	646	2,012	2,374	11.1	11.3	14.1
HVAC equipment upgrade	20	58	68	1,277	4,603	5,235	15.7	12.7	13.0
Lighting upgrade	19	57	80	1,326	4,619	5,984	14.0	12.2	13.3
Electrical upgrade	14	39	43	898	2,964	3,325	15.6	13.2	13.0
Plumbing system upgrade	13	37	40	839	2,911	2,924	15.5	12.6	13.7
Insulation upgrade	7	24	21	391	1,865	1,569	16.6	12.8	13.7
Fire, safety, or security upgrade	15	44	57	976	3,413	4,018	15.5	12.9	14.1
Structural upgrade	Q	11	13	223	822	915	Q	13.7	14.3
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q
No renovations	17	58	74	1,834	4,701	7,102	9.2	12.4	10.4
Buildings constructed 2013 or later	Q	8	18	Q	758	1,379	Q	10.1	13.1
Energy sources (more than one may apply)	42	115	202	2 727	42.074	47.274	11.5	42.4	44.7
Electricity	43	146	203	3,737	12,074	17,374	11.6	12.1	11.7
Natural gas	24	115	169	1,861	9,470	14,491	13.0	12.1	11.6
Fuel oil	24	59	47	1,639	4,291	2,913	14.4	13.8	16.3
District heat	5	23	21	394	1,430	1,204	12.0	15.8	17.5
District chilled water	Q 12	6	14	Q 1 1 7 4	365	656	Q 10.0	17.2	21.3
Propane Solar	12 3	13 11	12 4	1,154 268	1,311 947	1,293 425	10.0	9.6 11.5	9.5
Wood, coal, and other	Q	Q	4	Q	Q	412	10.3 Q	Q Q	10.3
Space-heating energy sources									
Electricity	20	69	99	1,264	5,112	6,113	15.7	13.4	16.2
Electricity main	9	30	51	633	2,016	2,730	13.5	14.8	18.6
Electricity secondary	11	39	48	630	3,095	3,383	17.8	12.6	14.2
Other excluding electricity	23	70	100	2,340	6,750	10,337	9.7	10.4	9.7
Buildings without heating	Q	Q	5	Q	Q	924	Q	Q	4.9
Primary space-heating									
energy source									
Electricity	9	30	51	633	2,016	2,730	13.5	14.8	18.6
Natural gas	18	82	128	1,430	7,463	12,096	12.6	11.0	10.6
Fuel oil	6	6	Q	642	990	Q	8.7	6.3	Q
District heat	5	21	16	388	1,307	1,107	12.0	15.7	14.6
Propane	Q	Q	2	453	Q	380	12.2	Q	5.9
Other sources ^b	Q	Q	Q	Q	Q	Q	Q	Q	Q
Cooling energy sources									
Electricity	38	137	182	3,052	11,002	15,064	12.5	12.4	12.1
Other excluding electricity	Q	6	Q	Q	393	383	Q	15.9	25.4
Buildings without cooling	4	3	12	575	679	1,927	6.5	4.3	6.1

Table C17. Electricity consumption and conditional energy intensity by census division (part 1), 2018

Total floorspace of buildings using electricity (million square feet)

	(Billion Kilovi	vattiloal3 [K	, v · · · j /	minion squu	ire reet,		Kvvii, square	. 100tj	
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	43	146	203	3,737	12,074	17,374	11.6	12.1	11.7
Water-heating energy sources									
Electricity	22	79	90	1,809	5,855	6,941	12.4	13.5	13.0
Other excluding electricity	20	63	108	1,665	5,666	9,339	11.8	11.2	11.6
Buildings without water heating	Q	Q	5	Q	553	1,093	Q	Q	4.7
Cooking energy sources									
Electricity	21	51	94	1,438	3,761	6,398	14.4	13.7	14.7
Other excluding electricity	7	27	26	612	2,260	1,918	11.4	12.1	13.7
Buildings without cooking	16	67	83	1,686	6,054	9,059	9.3	11.1	9.2
Energy end uses (more than one may apply)									
Buildings with space heating	43	139	199	3,603	11,862	16,450	11.8	11.7	12.1
Buildings with cooling	40	143	192	3,162	11,395	15,447	12.5	12.5	12.4
Buildings with water heating	42	142	198	3,475	11,521	16,281	12.1	12.3	12.2
Buildings with cooking	28	79	120	2,050	6,020	8,315	13.5	13.1	14.4
Buildings with manufacturing	Q	9	17	Q	789	1,489	Q	11.6	11.5
Buildings with electricity									
generation	24	73	81	1,692	5,106	5,232	14.4	14.3	15.5
Buildings with lighting	43	146	203	3,737	12,023	17,100	11.6	12.1	11.9
Percentage of floorspace heated									
Not heated	Q	Q	5	Q	Q	924	Q	Q	4.9
1% to 50%	Q	4	12	Q	770	1,210	Q	5.0	10.1
51% to 99%	12	34	43	911	2,301	2,999	12.6	14.6	14.5
100%	28	102	143	2,368	8,790	12,241	12.0	11.6	11.7
Percentage of floorspace cooled									
Not cooled	4	3	12	575	679	1,927	6.5	4.3	6.1
1% to 50%	5	20	23	862	2,762	3,696	5.7	7.1	6.2
51% to 99%	19	59	61	1,227	4,016	4,724	15.3	14.8	12.9
100%	16	64	108	1,073	4,618	7,027	14.9	13.9	15.4
Percentage lit when open									
0%	N	N	Q	N	N	Q	N	N	Q
1% to 50%	4	11	24	637	1,382	3,097	5.9	8.0	7.6
51% to 99%	23	61	93	1,736	4,714	7,250	13.0	13.0	12.8
100%	17	73	86	1,355	5,760	6,458	12.6	12.7	13.3
Building never open or electricity									
not used	Q	Q	Q	Q	Q	Q	Q	Q	Q
Percentage lit during off hours									
0%	7	8	18	760	1,471	2,969	9.3	5.6	6.1
1% to 50%	30	106	149	2,575	9,034	12,944	11.5	11.8	11.5
51% to 100%	6	22	28	395	1,085	1,092	16.4	20.2	25.6
Building always open with									
no off hours	Q	10	8	Q	485	369	Q	19.7	21.9
Electricity not used	N	N	N	N	N	N	N	N	N

Table C17. Electricity consumption and conditional energy intensity by census division (part 1), 2018

Total floorspace of buildings using electricity (million square feet)

	•	•	• • • • • • • • • • • • • • • • • • • •	<u> </u>		· · · · · · · · · · · · · · · · · · ·			
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	43	146	203	3,737	12,074	17,374	11.6	12.1	11.7
Heating equipment (more than one may apply)									
Packaged heating units	21	70	113	1,324	5,244	8,430	15.8	13.3	13.4
Furnaces	4	19	49	465	2,097	4,662	9.0	9.0	10.5
Individual space heaters	11	36	53	789	3,005	4,504	13.7	12.1	11.9
Boilers	18	61	76	1,725	5,661	5,899	10.5	10.7	12.9
Heat pumps	6	29	30	512	1,990	1,956	12.3	14.6	15.6
District heat	5	22	16	394	1,385	1,128	12.0	16.0	14.5
Duct reheat	Q	12	21	Q	841	1,209	Q	14.2	17.4
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q
Cooling equipment (more than one may apply)									
Packaged air-conditioning units	29	95	122	2,051	7,314	9,518	14.2	12.9	12.9
Residential-type central air									
conditioners	11	21	46	799	1,991	4,404	13.6	10.7	10.5
Individual air conditioners	11	31	32	936	2,721	2,382	12.3	11.6	13.4
Central chillers	8	44	48	534	3,187	3,484	14.9	13.7	13.8
Heat pumps	10	22	15	550	1,844	1,149	18.0	12.2	12.7
District chilled water	Q	6	14	Q	365	656	Q	17.2	21.3
Swamp coolers	Q	Q	Q	Q	Q	Q	Q	Q	Q
Other	N	Q	N	N	Q	N	N	Q	N
HVAC features (more than one may apply)									
Economizer cycle	21	74	102	1,376	5,572	7,119	15.5	13.3	14.3
Variable air volume (VAV) system	14	65	76	960	4,234	5,726	14.4	15.2	13.3
Dedicated outside air system (DOAS)	7	18	21	449	1,294	1,367	16.6	13.9	15.5
Demand controlled ventilation (DCV)	8	30	17	607	2,156	1,808	12.7	13.8	9.4
Regular HVAC maintenance	39	134	179	3,109	10,287	13,610	12.5	13.0	13.1
Building automation system (BAS)									
controls heating or cooling	24	90	103	1,702	5,963	7,180	14.2	15.0	14.3
Internet-connected or smart									
thermostat	Q	5	9	Q	479	835	Q	10.5	11.3
Programmable thermostat	9	26	41	763	2,970	4,022	11.3	8.7	10.2
Main equipment replaced since 2000 (more than one may apply)									
Heating	19	57	68	1,450	4,563	6,292	13.0	12.5	10.8
Cooling	12	44	48	1,167	4,141	4,534	10.5	10.6	10.5
Water-heating equipment									
Centralized system	28	82	143	2,457	7,424	11,791	11.3	11.1	12.1
Distributed system	6	37	26	566	2,315	2,132	11.0	15.9	12.2
Combination of centralized and distributed systems	8	23	29	452	1,782	2,359	17.8	12.8	12.4

Table C17. Electricity consumption and conditional energy intensity by census division (part 1), 2018

Total electricity Total floorspace of Electricity consumption buildings using electricity energy intensity (billion kilowatthours [kWh]) (million square feet) (kWh/square foot)

	New	Middle	East North	New	Middle	East North	New	Middle	East North
	England	Atlantic	Central	England	Atlantic	Central	England	Atlantic	Central
All buildings	43	146	203	3,737	12,074	17,374	11.6	12.1	11.7
Generation technologies (more than one may apply)									
Reciprocating engine generators	21	63	69	1,427	4,344	4,571	14.8	14.6	15.1
Solar panels	3	11	4	264	947	414	9.9	11.5	10.7
Other generation technology	Q	8	10	Q	342	533	Q	23.8	19.1
	<u>.</u>				J-12			25.0	
Lighting equipment types									
(more than one may apply)				000	2 222	4.476	44.7	42.2	
Incandescent	9	44	56	803	3,333	4,176	11.7	13.2	13.4
Standard fluorescent	36	115	154	2,764	9,592	13,242	12.9	12.0	11.7
Compact fluorescent	18	65	89	1,370	4,948	6,470	13.3	13.1	13.7
High-intensity discharge (HID)	5	19	33	355	1,740	2,164	13.2	11.2	15.3
Halogen	8	30	33	491	2,091	2,276	15.4	14.4	14.7
LED	31	117	151	2,679	8,962	11,498	11.5	13.0	13.1
Other	N	N	Q	N	N	Q	N	N	Q
Refrigeration equipment (more than one may apply)									
Any refrigeration	36	124	176	2,935	10,027	14,289	12.4	12.4	12.3
Walk-in units	22	65	101	1,268	4,225	5,494	17.6	15.5	18.3
Cases or cabinets	18	63	92	1,012	4,312	5,366	17.5	14.5	17.2
Large cold storage areas	Q	12	10	Q	461	416	Q	27.0	23.1
Commercial ice makers	15	60	101	979	4,177	5,896	15.1	14.4	17.2
Residential-type or compact units	29	104	137	2,451	8,308	12,017	11.9	12.5	11.4
Vending machines	18	72	107	1,490	5,677	8,067	12.3	12.7	13.2
No refrigeration	7	22	27	802	2,048	3,085	8.9	10.7	8.8
Office equipment									
(more than one may apply)	20	122	101	2 102	10.705	14.042	12.2	12.2	12.2
Desktop computers	38	133	181	3,103	10,795	14,842	12.3	12.3	12.2
With multiple monitors	24	97	111	1,864	7,065	8,908	12.9	13.8	12.5
Laptop computers	33	118	157	2,722	9,277	13,173	12.1	12.8	12.0
Dedicated servers	27	104	123	1,993	7,482	9,701	13.7	13.9	12.7
Tablets charged in building	25	90	117	1,969	6,478	8,917	12.8	14.0	13.1
Large floor-standing office devices ^c	26	106	119	1,978	7,875	10,012	12.9	13.4	11.8
Smaller desktop office devices ^c	37	124	164	2,976	10,169	13,342	12.3	12.2	12.3
Interactive whiteboards	8	35	39	727	2,815	3,364	10.3	12.5	11.5
Televisions or video displays	32	116	149	2,413	8,910	11,140	13.4	13.0	13.4
Point-of-sale devices or cash									
registers	24	64	105	1,529	4,598	6,407	15.8	13.9	16.3
Food preparation or serving areas									
in non-food service buildings (more than one may apply)									
Snack bar, concession stand, or coffee									
shop	5	19	28	329	1,285	1,998	16.0	14.8	13.8
Fast food or small restaurant	6	22	39	329	1,328	2,042	17.3	16.9	19.3
Cafeteria or large restaurant	9	32	38	725	2,436	3,041	12.6	13.1	12.4
Commercial kitchen or									
food preparation area	13	35	55	767	2,521	3,324	17.5	14.0	16.4
Small kitchen area	10	33	50	1,005	2,780	4,278	9.6	11.8	11.7

Table C17. Electricity consumption and conditional energy intensity by census division (part 1), 2018

Total floorspace of buildings using electricity (million square feet)

Electricity energy intensity (kWh/square foot)

	(billion knowatthodis [kwinj) (million square reet) (kwin/square root)								
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	43	146	203	3,737	12,074	17,374	11.6	12.1	11.7
Separate computer areas									
(more than one may apply)									
Server closet	26	86	119	1,755	7,024	8,989	14.8	12.3	13.2
Data center	7	33	32	455	2,114	2,303	16.3	15.5	14.1
Computer-based training room	6	29	39	461	2,484	3,089	14.0	11.8	12.7
Student or public computer center	4	21	24	389	1,884	2,158	9.7	11.0	11.1
Window and interior lighting features (more than one may apply)									
Multipaned windows	37	124	169	2,909	9,858	13,867	12.6	12.6	12.2
Tinted window glass	16	71	105	1,140	5,105	7,345	13.9	13.9	14.3
Reflective window glass	7	37	55	591	2,017	3,855	12.5	18.2	14.1
External overhangs or awnings	14	37	68	772	2,673	4,775	18.4	13.9	14.2
Skylights or atriums	9	30	50	777	2,415	3,776	11.6	12.5	13.1
Light scheduling	19	73	86	1,339	4,965	5,961	13.9	14.8	14.4
Occupancy sensors	27	96	108	1,953	7,056	8,713	13.7	13.6	12.4
Multilevel lighting or dimming	9	25	50	560	1,629	3,367	16.7	15.2	14.9
Daylight harvesting	4	15	21	265	1,085	1,120	15.0	14.2	18.8
Plug-load control	Q	Q	Q	Q	Q	456	Q	Q	Q
Demand responsive lighting	Q	3	5	Q	288	570	Q	10.0	9.4
Building automation system (BAS) for lighting	10	27	41	669	2,043	2,566	15.6	13.4	16.2
Electric vehicle (EV) charging Charging stations associated with the									
building	4	15	21	355	1,303	1,740	10.7	11.1	12.3
Annual consumption (kilowatthours)									
10,000 or less	Q	Q	1	Q	Q	827	Q	Q	1.3
10,001 to 50,000	3	6	10	575	1,384	2,518	5.2	4.1	4.0
50,001 to 100,000	4	5	12	523	705	1,637	8.2	7.6	7.3
100,001 to 500,000	10	22	45	964	2,590	3,824	10.3	8.7	11.7
500,001 to 1,000,000	5	14	39	415	1,458	2,872	10.9	9.8	13.5
1,000,001 to 5,000,000	16	54	59	831	3,724	3,756	19.0	14.6	15.6
Over 5,000,000	6	44	38	274	2,049	1,940	20.3	21.3	19.6

Data source: U.S. Energy Information Administration, Forms EIA-871A and E 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.

^cOffice devices refers to any combination of printers, copiers, scanners, or FAX machines.

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	•			I floorspace ng electricity		RSEs for electenergy intens	-	
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	13.3	8.4	9.5	10.8	8.8	10.3	6.5	6.4	4.1
Building floorspace (square feet)									
1,001 to 5,000	23.5	23.0	12.2	24.1	17.9	18.4	12.8	12.4	18.3
5,001 to 10,000	30.6	21.0	13.1	18.0	17.6	13.8	19.6	16.9	14.1
10,001 to 25,000	34.9	24.9	21.9	26.1	18.1	19.8	30.5	19.9	10.1
25,001 to 50,000	43.9	26.9	15.2	30.0	14.0	15.1	18.7	21.3	8.3
50,001 to 100,000	24.8	11.1	18.6	31.2	11.9	17.3	13.5	8.6	12.2
100,001 to 200,000	27.3	13.1	14.1	20.9	13.3	15.2	18.2	5.6	5.8
200,001 to 500,000	29.7	20.8	20.7	22.7	12.5	14.5	17.5	12.2	16.6
Over 500,000	39.0	12.1	15.1	41.1	15.1	18.5	30.6	8.8	9.2
		12.1	13.1	71.7	13.1	10.5	30.0	0.0	J.2
Principal building activity									
Education	17.2	10.7	10.0	13.7	10.7	12.0	9.0	5.6	5.1
Food sales	99.1	38.9	27.8	93.6	40.6	27.8	30.8	11.5	6.7
Food service	29.1	36.0	20.2	36.6	37.3	15.2	27.0	13.3	11.8
Health care	36.2	16.5	24.6	35.3	17.0	14.0	11.2	5.5	14.4
Inpatient	37.3	22.7	30.3	48.0	23.4	17.4	18.1	5.6	17.1
Outpatient	49.6	21.9	26.8	41.7	19.7	24.7	27.4	11.2	8.2
Lodging	24.4	26.0	26.8	23.2	23.6	16.7	10.2	11.5	18.7
Mercantile	31.7	27.7	23.0	26.1	15.7	23.2	11.2	14.6	10.2
Retail (other than mall)	29.3	29.7	33.0	26.9	20.1	31.8	12.5	24.6	15.9
Enclosed and strip malls	46.0	35.2	20.5	46.0	28.5	20.1	5.7	11.5	5.6
Office	22.5	12.9	18.8	22.1	13.6	16.3	9.1	5.3	7.9
Public assembly	22.3	20.3	16.1	14.1	20.1	14.4	15.7	11.8	10.4
Public order and safety	27.3	39.1	52.9	29.3	35.2	45.2	10.7	11.8	13.8
Religious worship	50.9	29.9	27.5	57.5	28.8	22.9	49.1	27.7	23.2
Service	35.4	17.6	27.2	29.5	15.0	23.3	22.1	16.9	16.3
Warehouse and storage	33.4	23.0	17.8	23.4	21.1	15.2	15.5	10.2	11.1
Other	53.6	35.0	36.3	49.7	29.6	37.1	34.8	26.3	10.3
Vacant	70.9	31.1	42.9	61.7	48.0	32.0	29.0	64.8	41.5
Year constructed									
Before 1920	28.1	28.3	14.7	29.9	24.4	17.8	25.9	18.5	8.7
1920 to 1945	27.1	19.8	25.8	20.1	16.4	23.4	17.8	10.1	13.4
1946 to 1959	46.4	17.8	23.3	42.5	19.0	21.9	5.5	11.0	12.1
1960 to 1969	17.1	13.5	20.4	25.6	13.3	14.8	20.4	13.8	14.4
1970 to 1979	27.2	22.7	20.0	37.0	17.7	14.3	24.7	9.3	12.1
1980 to 1989	19.5	21.1	20.7	17.9	12.7	18.6	16.6	21.1	8.1
1990 to 1999	21.4	16.9	14.5	20.0	16.5	15.2	10.2	12.1	8.2
2000 to 2009	40.1	12.1	11.6	31.2	17.8	14.1	26.5	13.7	8.0
2010 to 2018	18.6	34.3	23.7	12.5	20.7	17.9	8.8	27.5	22.9
Climate zone ^a									
Cold or very cold	26.2	60.2	47.1	13.2	62.2	46.5	26.1	4.3	7.1
Cool	17.7	23.1	13.9	18.1	18.9	14.6	9.3	7.2	4.2
Mixed mild	70.5	10.1	39.8	70.5	12.6	39.7	0.9	9.0	10.1
Warm	0.0	0.0	0.0	0.0	0.0				
Hot or very hot	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
THOCOL VELY HOL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	RSEs for total electricity consumption RSEs for total floorspace of RSEs for electricity buildings using electricity 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	13.3	8.4	9.5	10.8	8.8	10.3	6.5	6.4	4.1
Number of floors									
1	23.8	13.8	12.3	14.9	12.1	13.0	14.6	19.3	4.9
2	23.3	12.6	14.8	23.4	10.3	13.5	12.5	7.8	6.9
3	28.3	29.3	17.1	20.7	23.2	19.4	15.5	17.0	8.0
4 to 9	22.0	14.0	20.6	17.9	13.1	13.1	9.7	8.2	14.7
10 or more	25.3	10.8	24.4	23.3	13.2	31.5	9.0	8.0	11.9
Elevators and escalators (more than one may apply)									
Any elevators	13.0	10.7	10.9	14.6	9.3	9.9	8.7	6.5	6.4
1 elevator	18.9	17.5	13.5	24.3	11.7	12.7	15.4	9.0	7.7
2 to 5 elevators	19.7	16.0	17.6	20.1	13.3	14.7	8.2	12.8	8.7
6 or more elevators	23.3	10.9	23.4	27.4	14.1	18.0	10.6	7.6	13.9
Any escalators	61.9	21.8	30.1	50.8	18.4	26.2	20.3	9.8	8.5
Number of workers (main shift)									
Fewer than 5	22.6	26.5	16.6	21.6	20.0	15.6	10.8	13.5	8.7
5 to 9	24.4	26.5	18.2	27.5	18.2	24.8	30.1	11.6	15.3
10 to 19	32.1	10.9	21.1	34.7	16.9	23.4	11.4	14.6	14.4
20 to 49	33.5	16.6	12.9	15.2	8.9	10.8	27.5	16.0	10.0
50 to 99	31.7	21.7	10.8	17.2	15.3	12.6	23.4	18.1	7.1
100 to 249	28.6	16.2	15.7	24.8	15.9	12.1	8.4	9.3	9.3
250 or more	17.8	10.5	18.3	19.6	11.5	15.0	6.7	4.8	11.3
Weekly operating hours									
Fewer than 40	35.3	18.7	28.8	33.5	22.6	15.9	17.8	14.1	22.5
40 to 48	15.5	21.8	17.6	22.7	16.4	15.0	16.1	13.7	9.8
49 to 60	20.9	11.5	17.0	17.0	11.2	16.9	11.8	6.0	6.3
61 to 84	24.9	12.2	16.4	16.0	15.3	12.6	23.4	11.7	12.7
85 to 167	44.7	13.7	14.3	31.2	12.1	14.6	26.8	8.0	8.4
Open continuously	17.3	11.9	12.9	15.8	11.0	12.5	5.6	11.7	6.0
Ownership and occupancy									
Nongovernment owned	14.6	10.1	9.8	12.1	10.1	11.1	7.3	7.8	4.7
Owner occupied	19.5	14.0	9.3	14.1	13.0	9.3	9.9	6.1	7.8
Leased to tenant or tenants	14.0	15.8	17.3	13.1	11.9	15.8	11.2	13.1	6.2
Unoccupied	60.1	38.6	87.6	64.0	55.0	70.6	4.8	53.5	148.4
Government owned	21.3	15.9	15.9	19.7	13.2	14.2	5.5	4.8	5.1
Federal	47.3	36.2	40.8	47.2	40.4	33.1	30.8	22.3	19.9
State	48.5	33.0	26.9	43.3	29.2	29.7	17.4	8.2	13.9
Local	18.1	12.4	13.6	15.6	13.2	11.0	6.4	4.4	6.7
Party responsible for operation									
of energy systems									
Building owner	16.6	8.8	10.9	12.4	9.1	11.1	7.2	5.7	5.1
Business owner or tenant	23.0	25.6	14.8	14.1	19.7	20.0	20.8	18.8	15.0
Property management	38.1	31.4	48.8	29.7	30.2	41.9	14.0	13.8	28.9
Other	46.3	65.0	30.5	35.7	39.8	18.4	18.6	47.1	18.3

	RSEs for tota consumption	-			I floorspace		RSEs for elecenergy inten	-	
	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central	New England	Middle Atlantic	East North Central
All buildings	13.3	8.4	9.5	10.8	8.8	10.3	6.5	6.4	4.1
Provider of direct input on energy-									
related equipment purchases									
Building owner	16.0	8.7	11.0	12.3	9.2	11.2	6.5	5.9	4.4
Business owner or tenant	46.7	32.7	18.6	24.0	18.2	17.5	29.1	21.4	13.0
Property management	48.4	37.3	55.8	53.8	33.9	48.5	30.9	14.1	29.1
Other	15.2	31.8	26.3	22.6	28.3	24.7	18.9	23.0	18.2
Number of establishments									
1	15.9	9.6	9.9	11.5	9.4	11.1	9.0	8.1	5.1
2 to 5	19.9	15.1	14.1	17.1	18.1	10.8	8.6	9.2	8.9
6 to 10	25.5	21.7	24.7	24.8	21.6	28.8	12.4	8.6	14.9
11 to 20	50.3	27.9	18.0	44.5	24.1	15.5	12.1	13.0	9.5
More than 20	52.1	23.8	44.1	48.8	18.8	38.8	12.7	10.1	8.7
Currently unoccupied	60.1	37.4	69.3	64.0	49.8	40.6	4.8	44.3	68.3
Predominant exterior wall material									
Brick, stone, or stucco	15.3	10.2	10.9	15.9	9.8	9.9	11.4	7.0	5.9
Concrete (block or poured)	23.4	13.0	17.8	23.1	13.0	18.9	6.5	16.7	16.7
Concrete panels	42.0	25.0	23.2	22.3	27.2	25.6	27.5	23.7	15.7
Siding or shingles	35.8	24.6	30.1	30.3	29.1	18.2	27.9	18.6	18.5
Metal panels	48.2	22.9	19.8	24.7	25.5	18.6	45.6	14.2	12.2
Window glass	40.7	31.8	22.6	44.2	27.3	23.5	23.7	8.3	11.3
Other	63.5	38.4	47.6	56.1	40.0	44.8	46.2	5.6	24.0
Predominant roof material									
Metal surfacing	14.8	13.7	14.6	17.0	11.5	17.7	6.8	8.6	11.5
Synthetic or rubber	19.0	11.9	12.7	15.9	10.9	9.9	12.2	7.6	5.5
Built-up	27.5	13.3	15.1	29.7	11.8	16.5	19.2	5.3	6.8
Slate or tile shingles	34.1	24.7	23.0	37.9	21.3	33.9	18.9	9.6	19.8
Wooden materials (including									
shingles)	66.1	67.6	46.6	66.9	59.1	50.8	14.2	38.5	38.5
Asphalt, fiberglass, or									
other shingles	39.7	19.5	21.9	23.9	17.4	16.9	20.8	18.6	10.2
Concrete	70.8	25.0	39.7	71.1	27.9	36.2	44.9	11.4	20.5
Other	60.6	57.3	20.4	58.1	20.7	19.4	3.5	57.0	21.9
Roof tilt									
Flat	18.7	8.9	11.4	16.6	8.8	9.5	8.3	7.0	5.3
Shallow pitch	37.8	21.2	15.1	24.5	12.7	15.9	25.2	20.2	5.8
Steeper pitch	18.6	14.6	14.6	13.1	20.2	15.2	13.8	10.8	9.1
Cool roof characteristics (more than one	e								
may apply)				_			_		
White or reflective coating or paint	36.1	12.4	12.5	24.1	12.2	11.5	20.6	6.0	6.7
White or reflective tiles or shingles	56.1	48.5	24.6	45.1	24.8	26.4	20.9	49.6	19.4
Aluminum coating	34.0	21.0	25.5	26.5	22.4	30.0	25.8	17.0	24.2
Ballasted roof system	25.5	14.7	22.4	22.5	13.4	24.0	18.9	8.3	7.4
Other cool roof property	27.7	42.1	33.9	36.5	39.0	34.1	11.7	12.1	23.1

	RSEs for tota consumption	-	RSEs for total floorspace of buildings using electricity				RSEs for electricity 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	13.3	8.4	9.5	10.8	8.8	10.3	6.5	6.4	4.1
Renovations since 2000 (more than one may apply)									
Any type of renovation	22.3	10.2	8.9	13.9	8.3	11.3	13.4	5.8	7.1
Addition or annex	32.6	12.9	12.8	29.7	12.9	17.5	9.5	6.3	9.2
Reduction in floorspace	92.4	34.3	33.9	74.3	26.2	28.3	94.3	20.7	10.9
Roof replacement	24.5	12.3	11.4	13.0	12.0	11.2	16.7	5.8	7.1
Interior wall reconfiguration	27.5	10.8	9.2	19.6	11.7	9.6	15.8	6.6	7.2
Window replacement	22.6	15.6	13.6	15.5	12.0	16.0	14.5	7.8	11.0
HVAC equipment upgrade	25.5	11.3	10.2	16.0	11.6	9.6	17.5	4.7	8.0
Lighting upgrade	18.7	14.6	9.5	14.7	9.9	11.2	13.9	7.4	7.4
Electrical upgrade	21.0	13.0	9.1	13.2	11.6	12.2	13.0	6.1	8.6
Plumbing system upgrade	26.8	12.4	13.7	16.2	13.2	16.0	16.5	5.5	7.6
Insulation upgrade	34.0	18.6	16.4	8.3	17.6	19.7	29.8	7.6	10.4
Fire, safety, or security upgrade	24.8	14.9	8.8	13.4	11.9	10.7	16.7	7.2	8.8
Structural upgrade	67.8	21.1	18.2	40.2	16.4	23.3	54.5	14.7	11.9
Other	63.8	40.3	68.2	60.9	31.5	59.7	15.3	19.2	38.2
No renovations	16.9	12.0	13.0	15.4	12.4	12.3	10.2	12.3	5.5
Buildings constructed 2013 or later	35.5	23.0	33.6	31.5	23.5	20.4	19.3	15.5	29.2
Energy sources (more than one may apply) Electricity	13.3	8.4	9.5	10.8	8.8	10.3	6.5	6.4	4.1
Natural gas	11.0	9.1	9.4	11.8	9.6	9.3	12.5	7.4	3.8
District heat	23.4 25.4	9.0	14.1 31.9	16.7 29.5	12.6 9.4	13.2 24.2	13.0	12.1 8.2	10.1 22.6
District chilled water	35.2	20.8	40.0	40.2	20.0	27.3	10.6	7.8	26.9
Propane	27.3	15.6	21.6	16.2	21.7	18.7	20.7	15.7	8.0
Solar	35.4	29.2	22.7	24.0	30.9	22.2	15.8	10.1	13.9
Wood, coal, and other	59.2	51.8	33.4	48.6	45.1	32.5	23.2	25.5	26.5
Space-heating energy sources	33.2	31.0	33.4	46.0	43.1	32.3	23.2	23.3	20.3
Electricity	19.4	13.1	12.1	15.8	10.7	13.0	14.3	6.9	8.6
Electricity main	16.4	20.7	15.8	17.8	15.4	15.9	8.4	9.9	11.1
Electricity secondary	29.4	11.3	14.1	16.8	10.6	13.2	25.1	6.2	9.3
Other excluding electricity	14.4	7.9	10.6	10.9	9.2	10.2	6.9	10.5	4.8
Buildings without heating	33.3	46.3	37.9	33.1	34.8	32.3	20.9	45.4	18.7
Primary space-heating energy source									
Electricity	16.4	20.7	15.8	17.8	15.4	15.9	8.4	9.9	11.1
Natural gas	14.3	8.7	11.8	10.4	9.9	11.0	14.8	8.2	4.3
Fuel oil	29.6	23.4	50.8	26.8	25.7	30.9	6.5	15.0	36.5
District heat	25.6	11.0	19.1	29.9	12.8	24.6	7.8	8.6	10.6
Propane	55.5	45.5	25.6	24.5	12.5	32.4	42.1	55.0	19.8
Other sources ^b	46.2	51.9	44.9	58.3	53.4	42.4	16.9	3.2	28.1
Cooling energy sources									
Electricity	14.4	8.8	8.9	11.1	9.4	9.4	7.8	6.7	4.4
Other excluding electricity	69.3	20.5	55.1	64.1	16.8	33.8	19.2	8.6	37.6
Buildings without cooling	34.6	26.0	36.0	29.9	19.8	22.1	9.5	13.9	22.3

	RSEs for tota consumption	=			l floorspace ng electricity		RSEs for electricity 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	13.3	8.4	9.5	10.8	8.8	10.3	6.5	6.4	4.1
Water-heating energy sources									
Electricity	11.7	10.9	13.1	17.3	10.9	12.9	11.2	9.8	6.0
Other excluding electricity	19.2	8.1	11.0	10.3	9.9	10.5	13.7	5.3	7.2
Buildings without water heating	35.0	64.6	35.7	33.0	26.7	29.0	10.4	51.7	19.1
Cooking energy sources									
Electricity	16.5	9.0	9.3	11.3	8.5	9.8	10.3	5.9	4.4
Other excluding electricity	22.6	14.9	12.4	24.5	15.2	12.1	7.8	9.8	9.2
Buildings without cooking	16.3	14.3	15.4	15.4	11.5	13.4	7.5	11.4	8.3
	10.5	14.5	13.4	13.4	11.3	13.4	7.3	11.4	6.5
Energy end uses (more than one may apply)									
Buildings with space heating	13.8	7.8	9.1	11.2	8.8	9.5	6.4	5.9	3.9
Buildings with cooling	14.1	8.5	8.6	11.3	9.1	9.2	7.6	6.5	4.4
Buildings with water heating	14.0	7.8	9.2	11.5	8.8	9.7	6.3	6.5	4.1
Buildings with cooking	15.3	7.7	8.6	11.4	7.7	9.6	8.1	5.3	3.4
Buildings with manufacturing	65.9	26.4	21.4	32.7	27.3	19.8	48.1	17.1	15.7
Buildings with electricity	03.9	20.4		32.7	27.3	13.8	40.1		
generation	21.6	9.8	9.0	18.1	10.3	8.0	10.2	9.4	7.4
Buildings with lighting	13.3	8.4	9.5	10.8	8.7	10.2	6.5	6.4	4.1
Percentage of floorspace heated									
Not heated	33.3	46.3	37.9	33.1	34.8	32.3	20.9	45.4	18.7
1% to 50%	27.3	25.1	22.1	25.2	25.9	20.8	13.2	20.5	22.3
51% to 99%	35.6	9.1	12.3	22.4	12.8	12.9	23.1	9.2	7.3
100%	14.2	8.3	10.1	12.8	8.6	9.9	9.2	6.0	4.8
Percentage of floorspace cooled									
Not cooled	34.6	26.0	36.0	29.9	19.8	22.1	9.5	13.9	22.3
1% to 50%	15.2	19.2	13.3	13.5	15.0	11.9	10.6	22.2	10.3
51% to 99%	23.6	11.0	13.1	15.2	10.4	13.2	15.5	10.4	7.3
100%	19.8	11.6	9.4	18.8	12.3	10.3	8.3	3.1	8.6
Percentage lit when open									
0%	0.0	0.0	62.0	0.0	0.0	52.6	0.0	0.0	20.1
1% to 50%	26.9	22.7	19.5	27.3	19.9	18.4	14.7	18.5	10.5
51% to 99%	16.6	10.1	9.5	11.4	9.0	9.7	14.0	8.7	4.2
100%	18.7	11.0	13.3	11.1	9.0	14.0	10.8	7.6	7.0
Building never open or electricity									
not used	60.1	28.8	17.7	64.0	33.3	28.3	4.8	30.3	21.3
Percentage lit during off hours									
0%	36.8	24.6	30.8	22.6	18.5	16.4	36.7	15.5	21.3
1% to 50%	17.4	8.4	9.4	12.4	9.1	10.7	6.3	6.6	5.1
51% to 100%	24.5	27.8	25.3	24.9	20.4	15.9	4.9	18.6	13.5
Building always open with									
no off hours	71.1	28.8	28.5	65.6	24.6	31.1	43.4	17.6	17.1
Electricity not used	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	RSEs for tota consumption	-			I floorspace o	RSEs for electricity 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	13.3	8.4	9.5	10.8	8.8	10.3	6.5	6.4	4.1
Heating equipment									
(more than one may apply)									
Packaged heating units	17.7	10.6	11.1	17.0	8.7	10.4	14.3	9.3	5.1
Furnaces	46.8	14.3	14.0	40.2	16.1	13.6	28.9	11.2	8.9
Individual space heaters	36.8	13.4	17.4	20.3	12.3	13.5	25.0	5.8	12.9
Boilers	10.1	10.4	13.7	9.1	11.8	10.1	5.3	4.9	7.1
Heat pumps	16.6	13.6	13.5	15.3	15.2	14.0	7.4	7.4	8.8
District heat	25.4	9.8	18.5	29.5	10.4	23.6	7.7	8.4	10.0
Duct reheat	58.6	19.7	20.3	32.0	20.3	21.2	50.6	6.8	4.5
Other	95.7	74.1	43.8	86.7	79.8	45.1	31.4	25.8	12.7
Cooling equipment (more than one may apply)									
Packaged air-conditioning units	15.8	8.5	10.0	12.7	9.5	10.7	10.9	8.8	4.4
Residential-type central air									
conditioners	16.8	13.2	9.2	19.5	14.2	10.7	22.3	7.4	6.7
Individual air conditioners	20.3	14.7	17.3	15.7	14.9	15.1	6.8	7.1	10.7
Central chillers	23.0	9.4	13.2	18.1	10.5	13.1	8.8	6.0	6.3
Heat pumps	31.5	17.8	13.4	24.9	19.6	12.8	19.2	11.0	9.8
District chilled water	35.2	20.8	40.0	40.2	20.0	27.3	10.6	7.8	26.9
Swamp coolers	60.7	71.1	31.1	65.3	76.9	37.3	34.9	24.1	18.3
Other	0.0	70.2	0.0	0.0	70.2	0.0	0.0	0.0	0.0
HVAC features									
(more than one may apply)									
Economizer cycle	18.0	8.9	10.4	12.7	9.8	7.9	15.2	7.2	4.9
Variable air volume (VAV) system	14.8	12.5	9.5	15.9	11.9	7.9	23.1	12.1	7.2
Dedicated outside air system (DOAS)	39.5	12.1	28.7	25.1	11.8	20.3	21.5	7.4	19.8
Demand controlled ventilation (DCV)	23.0	13.8	14.7	25.6	13.9	13.8	15.1	9.8	10.6
Regular HVAC maintenance	12.9	8.9	9.4	9.6	10.1	9.7	7.8	6.9	3.7
Building automation system (BAS)									
controls heating or cooling	18.0	9.0	8.1	12.6	8.4	6.2	12.1	9.2	4.6
Internet-connected or smart									
thermostat	38.5	20.4	32.5	30.1	21.6	36.6	32.5	14.0	23.1
Programmable thermostat	32.8	13.1	14.8	26.8	13.3	13.8	12.8	9.4	8.1
Main equipment replaced since 2000 (more than one may apply)									
Heating	16.6	15.7	9.4	17.7	12.2	11.7	11.8	10.5	7.0
Cooling	17.9	16.2	15.3	13.9	14.7	11.4	7.7	6.1	8.2
Water-heating equipment									
Centralized system	20.6	8.9	9.9	14.5	8.1	10.4	8.1	5.9	5.0
Distributed system	31.7	18.9	24.5	28.6	13.0	19.3	11.2	19.4	14.7
Combination of centralized and distributed systems	32.8	16.3	12.7	14.0	15.3	10.5	25.1	7.8	5.8

	RSEs for tota consumption	-	RSEs for total floorspace of buildings using electricity				RSEs for electricity 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	13.3	8.4	9.5	10.8	8.8	10.3	6.5	6.4	4.1
Generation technologies (more than one may apply)									
Reciprocating engine generators	23.2	10.0	10.9	18.9	10.6	10.3	12.3	10.8	7.7
Solar panels	36.9	29.2	23.1	24.3	30.9	22.6	17.0	10.1	14.1
Other generation technology	57.9	44.3	47.1	55.4	26.8	32.3	20.1	35.1	32.6
				33.1	20.0	32.3		33.1	32.0
Lighting equipment types									
(more than one may apply)	16.1	12.0	12.5	12.5	12.8	11.2	C 0		0.0
Incandescent Standard fluorescent	16.1	12.8	13.5	13.5		11.2	6.9	6.9	9.6
	15.3	9.0	11.2	15.1	10.2	11.3	8.9	7.7	5.3
Compact fluorescent	17.9	9.7	12.5	20.3	9.6	12.2	5.1	5.8	5.9
High-intensity discharge (HID)	22.0	12.7	23.1	22.0	12.1 11.9	16.7	13.6	7.1	11.3
Halogen	23.5	12.6	13.7	18.0		13.3	8.1	7.6	7.4
LED	10.2	7.3	8.5	9.4	9.2	8.7	7.1	7.0	4.8
Other	0.0	0.0	30.1	0.0	0.0	26.9	0.0	0.0	5.9
Refrigeration equipment									
(more than one may apply)									
Any refrigeration	12.4	7.6	9.1	10.1	9.7	9.5	7.3	6.9	5.1
Walk-in units	18.5	7.5	8.3	14.8	6.4	8.1	13.8	8.0	5.4
Cases or cabinets	23.7	8.5	10.8	20.0	7.4	9.1	14.3	8.2	7.3
Large cold storage areas	36.7	37.1	25.1	49.3	17.8	25.6	73.3	32.5	12.0
Commercial ice makers	13.4	9.4	9.3	13.4	8.1	9.0	3.9	5.7	4.9
Residential-type or compact units	8.0	8.4	10.1	8.9	10.4	9.9	7.5	8.7	6.1
Vending machines	13.5	9.6	9.0	11.8	9.4	8.4	3.5	8.0	6.2
No refrigeration	24.4	17.3	18.8	17.4	8.6	17.3	10.7	16.6	12.2
Office equipment (more than one may apply)									
Desktop computers	13.1	8.0	9.0	10.4	8.7	9.3	6.9	6.8	4.0
With multiple monitors	12.2	9.3	9.9	10.1	9.4	8.8	9.2	8.6	6.5
Laptop computers	9.0	10.1	9.2	8.5	9.5	9.0	6.5	7.6	4.2
Dedicated servers	16.4	9.3	9.6	12.6	10.8	8.8	7.2	7.7	5.2
Tablets charged in building	8.8	10.6	10.7	11.0	9.3	9.4	7.9	8.2	5.1
Large floor-standing office devices ^c	16.2	8.9	8.5	12.8	9.0	8.1	9.1	6.8	6.0
Smaller desktop office devices ^c	12.4	8.2	10.2	8.8	8.7	10.3	8.2	7.4	4.8
Interactive whiteboards	12.8	13.3	17.3	18.8	8.9	9.6	15.6	11.6	13.3
Televisions or video displays	13.7	9.0	9.7	10.8	9.7	9.2	10.2	7.6	5.6
Point-of-sale devices or cash									
registers	17.2	9.4	11.0	14.4	9.1	9.8	13.9	9.3	6.0
Food preparation or serving areas in non-food service buildings (more than one may apply)									
Snack bar, concession stand, or coffee									
shop	23.0	17.0	16.8	18.8	15.3	17.8	14.3	9.9	6.8
Fast food or small restaurant	34.8	15.1	11.6	33.6	11.9	13.8	8.3	8.9	5.6
Cafeteria or large restaurant	15.5	9.6	11.8	14.0	7.9	9.0	11.2	5.8	5.2
Commercial kitchen or									
food preparation area	30.5	11.3	13.7	18.7	12.8	13.7	19.4	6.2	7.4
Small kitchen area	22.1	11.5	15.2	17.4	10.4	14.4	8.3	5.4	8.0

	RSEs for tota consumption	-			I floorspace on the second sec		RSEs for electricity 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	13.3	8.4	9.5	10.8	8.8	10.3	6.5	6.4	4.1
Separate computer areas (more than one may apply)									
Server closet	15.9	9.0	10.3	13.7	9.8	10.0	9.2	4.2	4.6
Data center	16.7	13.8	17.7	19.8	17.4	13.9	7.5	19.4	14.9
Computer-based training room	22.3	9.1	12.4	21.6	9.0	10.2	5.4	6.3	7.4
Student or public computer center	19.3	9.7	10.5	27.5	10.4	8.0	20.6	4.0	6.4
Window and interior lighting features (more than one may apply)									
Multipaned windows	16.5	8.2	9.1	11.8	8.4	9.7	8.5	7.0	3.9
Tinted window glass	14.1	11.7	11.6	18.6	9.4	8.7	16.1	6.0	5.4
Reflective window glass	13.7	16.7	14.6	16.0	12.1	13.5	11.8	13.4	8.9
External overhangs or awnings	26.8	13.7	12.5	24.3	13.5	12.6	15.3	10.7	8.5
Skylights or atriums	18.6	15.1	14.4	17.6	15.1	10.2	7.0	3.8	10.7
Light scheduling	19.3	12.9	12.3	14.4	11.8	11.6	12.8	7.3	6.7
Occupancy sensors	14.6	9.2	10.7	12.1	9.3	9.4	11.7	8.3	5.9
Multilevel lighting or dimming	17.4	14.4	13.9	18.7	14.7	11.0	23.9	7.5	9.7
Daylight harvesting	42.3	18.5	26.7	40.2	14.8	19.5	11.8	10.1	18.4
Plug-load control	47.3	33.8	65.0	45.5	29.9	31.0	14.4	16.2	51.5
Demand responsive lighting	56.9	29.9	29.6	51.2	32.6	43.2	20.5	21.0	20.2
Building automation system (BAS) for									
lighting	30.7	14.7	11.9	22.5	16.0	11.3	21.7	8.0	6.9
Electric vehicle (EV) charging									
Charging stations associated with the									
building	25.3	23.9	25.2	21.4	21.3	18.7	11.9	11.5	20.5
Annual consumption (kilowatthours)									
10,000 or less	39.8	28.2	20.3	39.3	29.6	23.5	7.4	24.9	7.8
10,001 to 50,000	16.8	17.4	19.4	12.2	20.3	17.8	7.7	8.6	11.0
50,001 to 100,000	35.4	28.1	20.7	43.0	27.1	19.4	24.2	17.1	14.3
100,001 to 500,000	21.0	9.9	14.1	19.9	11.1	15.7	5.9	7.3	5.0
500,001 to 1,000,000	27.8	23.1	16.3	17.1	17.1	15.0	16.1	15.7	5.4
1,000,001 to 5,000,000	21.7	14.7	13.1	14.5	13.7	10.1	17.4	6.8	7.9
Over 5,000,000	27.9	14.4	19.9	33.4	9.8	18.1	21.8	13.7	11.4

Data source: U.S. Energy Information Administration, Forms EIA-871A and E 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.

^cOffice devices refers to any combination of printers, copiers, scanners, or FAX machines.