

Preliminary release date: September 2022

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**Table C13. Total electricity consumption and expenditures, 2018**

	All buildings using electricity		Electricity consumption			Electricity expenditures	
	Number of buildings (thousand)	Total floorspace (million square feet)	Mean floorspace per building (thousand square feet)	Primary <sup>a</sup> Total (trillion British thermal units [Btu])	Site <sup>b</sup> Total (trillion Btu)	Total (billion kilowatthours)	Total (million dollars)
<b>All buildings</b>	5,613	94,844	16.9	11,834	4,081	1,196	\$118,997
<b>Building floorspace (square feet)</b>							
1,001 to 5,000	2,631	7,471	2.8	1,075	371	109	\$12,119
5,001 to 10,000	1,288	9,644	7.5	1,064	367	108	\$11,521
10,001 to 25,000	949	15,464	16.3	1,631	563	165	\$17,327
25,001 to 50,000	385	13,935	36.2	1,657	571	167	\$17,314
50,001 to 100,000	217	15,269	70.3	1,817	627	184	\$17,586
100,001 to 200,000	93	12,983	140.2	1,689	582	171	\$15,936
200,001 to 500,000	40	11,761	293.8	1,732	597	175	\$16,565
Over 500,000	9	8,317	947.6	1,169	403	118	\$10,628
<b>Principal building activity</b>							
Education	437	13,623	31.1	1,268	437	128	\$12,594
Food sales	163	1,006	6.2	530	183	54	\$5,306
Food service	286	1,385	4.8	601	207	61	\$5,890
Health care	137	4,018	29.3	947	327	96	\$8,911
Inpatient	9	2,259	264.8	644	222	65	\$5,576
Outpatient	129	1,760	13.7	303	105	31	\$3,334
Lodging	207	6,976	33.7	991	342	100	\$9,634
Mercantile	513	10,776	21.0	1,785	616	180	\$16,549
Retail (other than mall)	346	5,188	15.0	703	242	71	\$6,817
Enclosed and strip malls	167	5,588	33.5	1,082	373	109	\$9,732
Office	970	16,662	17.2	2,247	775	227	\$23,712
Public assembly	488	7,192	14.7	864	298	87	\$8,520
Public order and safety	81	1,538	18.9	212	73	21	\$2,061
Religious worship	439	5,471	12.5	263	91	27	\$2,989
Service	866	6,208	7.2	443	153	45	\$5,049
Warehouse and storage	792	16,335	20.6	942	325	95	\$10,221
Other	108	2,407	22.2	693	239	70	\$7,065
Vacant	124	1,246	10.0	48	16	5	\$495
<b>Year constructed</b>							
Before 1920	323	3,568	11.0	348	120	35	\$3,595
1920 to 1945	368	5,581	15.2	642	221	65	\$6,793
1946 to 1959	496	6,823	13.7	656	226	66	\$6,580
1960 to 1969	673	10,258	15.2	1,184	408	120	\$12,071
1970 to 1979	787	12,902	16.4	1,579	545	160	\$16,053
1980 to 1989	752	13,298	17.7	1,790	617	181	\$18,932
1990 to 1999	844	15,066	17.8	1,764	608	178	\$17,783
2000 to 2009	860	17,254	20.1	2,498	861	252	\$24,372
2010 to 2018	508	10,094	19.9	1,373	473	139	\$12,818

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	Number of buildings (thousand)	Total floorspace (million square feet)	Mean floorspace per building (thousand square feet)	Primary <sup>a</sup> (trillion British thermal units [Btu])	Site <sup>b</sup> (trillion Btu)	Total (billion kilowatthours)	Total (million dollars)
<b>All buildings</b>	5,613	94,844	16.9	11,834	4,081	1,196	\$118,997
<b>Census region and division</b>							
Northeast	769	15,811	20.6	1,873	646	189	\$21,721
New England	274	3,737	13.7	430	148	43	\$6,785
Middle Atlantic	496	12,074	24.4	1,444	498	146	\$14,936
Midwest	1,647	25,488	15.5	2,943	1,015	297	\$29,028
East North Central	1,074	17,374	16.2	2,013	694	203	\$20,163
West North Central	573	8,114	14.2	930	321	94	\$8,865
South	2,011	34,353	17.1	4,719	1,627	477	\$40,783
South Atlantic	987	17,732	18.0	2,531	873	256	\$23,209
East South Central	313	5,272	16.8	648	223	65	\$6,159
West South Central	711	11,349	16.0	1,541	531	156	\$11,416
West	1,186	19,192	16.2	2,299	793	232	\$27,464
Mountain	431	7,411	17.2	939	324	95	\$8,175
Pacific	755	11,781	15.6	1,360	469	137	\$19,288
<b>Climate zone<sup>c</sup></b>							
Cold or very cold	511	6,934	13.6	858	296	87	\$8,564
Cool	1,644	26,339	16.0	2,939	1,013	297	\$29,973
Mixed mild	1,169	24,731	21.2	3,160	1,090	319	\$32,131
Warm	1,495	24,605	16.5	3,166	1,092	320	\$32,968
Hot or very hot	794	12,235	15.4	1,711	590	173	\$15,361
<b>Number of floors</b>							
1	3,822	42,188	11.0	5,202	1,794	526	\$52,612
2	1,270	23,152	18.2	2,445	843	247	\$25,445
3	364	10,480	28.8	1,253	432	127	\$12,615
4 to 9	142	13,027	92.0	1,942	670	196	\$18,772
10 or more	16	5,998	379.9	992	342	100	\$9,552
<b>Elevators and escalators (more than one may apply)</b>							
Any elevators	499	36,474	73.0	5,054	1,743	511	\$49,588
1 elevator	362	14,194	39.2	1,530	528	155	\$15,653
2 to 5 elevators	121	13,312	110.0	1,983	684	200	\$19,486
6 or more elevators	16	8,968	545.8	1,541	531	156	\$14,449
Any escalators	14	3,753	277.8	550	190	56	\$4,986
<b>Number of workers (main shift)</b>							
Fewer than 5	2,968	19,535	6.6	1,585	546	160	\$17,564
5 to 9	1,113	10,285	9.2	1,198	413	121	\$12,301
10 to 19	713	11,346	15.9	1,263	436	128	\$12,969
20 to 49	492	16,132	32.8	2,167	747	219	\$21,626
50 to 99	201	12,961	64.5	1,744	602	176	\$17,338
100 to 249	90	12,433	137.9	1,781	614	180	\$17,253
250 or more	37	12,152	329.9	2,096	723	212	\$19,946
<b>Weekly operating hours</b>							
Fewer than 40	1,233	10,191	8.3	684	236	69	\$7,493
40 to 48	1,473	18,744	12.7	1,679	579	170	\$17,637
49 to 60	1,231	22,739	18.5	2,237	771	226	\$23,064
61 to 84	618	14,613	23.7	1,983	684	200	\$20,294
85 to 167	421	9,803	23.3	1,707	589	173	\$16,885
Open continuously	637	18,754	29.4	3,544	1,222	358	\$33,623

**Table C13. Total electricity consumption and expenditures, 2018**

	All buildings using electricity			Electricity consumption		Electricity expenditures	
	Number of buildings (thousand)	Total floorspace (million square feet)	Mean floorspace per building (thousand square feet)	Primary <sup>a</sup>	Site <sup>b</sup>	Total (billion kilowatthours)	Total (million dollars)
				Total (trillion British thermal units [Btu])	Total (trillion Btu)		
<b>All buildings</b>	5,613	94,844	16.9	11,834	4,081	1,196	\$118,997
<b>Ownership and occupancy</b>							
Nongovernment owned	4,693	73,201	15.6	9,322	3,215	942	\$94,736
Owner occupied	3,104	44,617	14.4	5,569	1,920	563	\$55,814
Leased to tenant or tenants	1,511	27,937	18.5	3,738	1,289	378	\$38,736
Unoccupied	78	647	8.3	15	5	2	\$186
Government owned	920	21,644	23.5	2,512	866	254	\$24,261
Federal	70	1,946	27.7	267	92	27	\$2,461
State	246	6,854	27.8	912	314	92	\$8,054
Local	603	12,843	21.3	1,333	460	135	\$13,745
<b>Party responsible for operation of energy systems</b>							
Building owner	4,636	78,105	16.8	9,633	3,322	974	\$96,280
Business owner or tenant	783	12,558	16.0	1,607	554	162	\$16,798
Property management	83	1,949	23.4	283	98	29	\$2,830
Other	110	2,233	20.2	311	107	31	\$3,089
<b>Provider of direct input on energy-related equipment purchases</b>							
Building owner	4,864	81,555	16.8	10,035	3,460	1,014	\$100,132
Business owner or tenant	456	7,373	16.2	1,025	354	104	\$10,734
Property management	42	1,044	24.8	162	56	16	\$1,615
Other	250	4,872	19.5	612	211	62	\$6,516
<b>Number of establishments</b>							
1	4,504	64,261	14.3	7,685	2,650	777	\$78,184
2 to 5	805	16,365	20.3	2,106	726	213	\$20,572
6 to 10	134	5,530	41.3	791	273	80	\$7,982
11 to 20	63	3,894	61.6	618	213	62	\$6,224
More than 20	19	3,989	206.9	611	211	62	\$5,780
Currently unoccupied	87	804	9.2	23	8	2	\$254
<b>Predominant exterior wall material</b>							
Brick, stone, or stucco	2,420	45,718	18.9	6,009	2,072	607	\$58,633
Concrete (block or poured)	891	19,165	21.5	2,575	888	260	\$25,766
Concrete panels	137	8,329	60.6	950	328	96	\$10,000
Siding or shingles	898	5,805	6.5	734	253	74	\$7,961
Metal panels	1,121	11,458	10.2	919	317	93	\$9,668
Window glass	19	2,189	113.5	340	117	34	\$3,652
Other	126	2,181	17.3	306	106	31	\$3,317
<b>Predominant roof material</b>							
Metal surfacing	1,980	19,813	10.0	1,913	659	193	\$18,916
Synthetic or rubber	924	31,467	34.1	4,469	1,541	452	\$44,081
Built-up	702	19,286	27.5	2,607	899	263	\$25,857
Slate or tile shingles	373	3,988	10.7	449	155	45	\$5,046
Wooden materials (including shingles)	152	1,484	9.7	159	55	16	\$1,885
Asphalt, fiberglass, or other shingles	1,269	13,837	10.9	1,525	526	154	\$16,172
Concrete	82	1,967	24.0	324	112	33	\$3,062
Other	131	3,003	22.9	389	134	39	\$3,978

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	All buildings using electricity		Electricity consumption			Electricity expenditures	
	Number of buildings (thousand)	Total floorspace (million square feet)	Mean floorspace per building (thousand square feet)	Primary <sup>a</sup>	Site <sup>b</sup>	Total (billion kilowatthours)	Total (million dollars)
				Total (trillion British thermal units [Btu])	Total (trillion Btu)		
<b>All buildings</b>	5,613	94,844	16.9	11,834	4,081	1,196	\$118,997
<b>Roof tilt</b>							
Flat	1,843	53,779	29.2	7,651	2,638	773	\$75,513
Shallow pitch	2,120	26,658	12.6	2,751	949	278	\$28,398
Steeper pitch	1,649	14,408	8.7	1,433	494	145	\$15,086
<b>Cool roof characteristics (more than one may apply)</b>							
White or reflective coating or paint	1,227	32,416	26.4	4,474	1,543	452	\$43,908
White or reflective tiles or shingles	134	2,693	20.1	428	147	43	\$4,132
Aluminum coating	500	5,919	11.8	650	224	66	\$6,495
Ballasted roof system	114	6,277	55.2	889	306	90	\$8,358
Other cool roof property	35	1,603	45.3	241	83	24	\$2,308
<b>Renovations since 2000 (more than one may apply)</b>							
Any type of renovation	1,992	44,952	22.6	5,845	2,016	591	\$58,359
Addition or annex	327	10,850	33.1	1,467	506	148	\$14,350
Reduction in floorspace	35	1,784	51.1	264	91	27	\$2,570
Roof replacement	830	20,767	25.0	2,691	928	272	\$26,603
Interior wall reconfiguration	709	21,250	30.0	2,807	968	284	\$27,945
Window replacement	481	10,956	22.8	1,362	469	138	\$13,541
HVAC equipment upgrade	993	27,484	27.7	3,676	1,268	372	\$36,828
Lighting upgrade	1,002	29,019	29.0	3,917	1,351	396	\$39,337
Electrical upgrade	555	15,718	28.3	2,193	756	222	\$21,852
Plumbing system upgrade	568	15,438	27.2	2,129	734	215	\$21,311
Insulation upgrade	307	7,980	26.0	1,066	367	108	\$10,286
Fire, safety, or security upgrade	570	19,972	35.0	2,734	943	276	\$27,415
Structural upgrade	144	4,192	29.2	625	216	63	\$6,197
Other	36	1,141	31.6	198	68	20	\$1,843
No renovations	3,289	42,653	13.0	5,054	1,743	511	\$52,094
Buildings constructed 2013 or later	332	7,239	21.8	935	322	94	\$8,544
<b>Energy sources (more than one may apply)</b>							
Electricity	5,613	94,844	16.9	11,834	4,081	1,196	\$118,997
Natural gas	2,974	67,722	22.8	8,515	2,936	861	\$85,118
Fuel oil	583	21,185	36.3	3,482	1,201	352	\$34,015
District heat	86	6,745	78.1	1,124	388	114	\$10,337
District chilled water	55	4,288	77.5	731	252	74	\$6,445
Propane	671	10,152	15.1	1,179	407	119	\$12,261
Solar	97	3,803	39.2	483	167	49	\$5,603
Wood, coal, and other	180	2,113	11.8	247	85	25	\$2,469
<b>Space-heating energy sources</b>							
Electricity	2,563	45,603	17.8	6,621	2,283	669	\$63,895
Electricity main	1,856	27,618	14.9	4,141	1,428	418	\$39,865
Electricity secondary	708	17,985	25.4	2,480	855	251	\$24,030
Other excluding electricity	2,338	43,058	18.4	4,618	1,592	467	\$48,135
Buildings without heating	712	6,184	8.7	596	205	60	\$6,966

**Table C13. Total electricity consumption and expenditures, 2018**

	All buildings using electricity			Electricity consumption		Electricity expenditures	
	Number of buildings (thousand)	Total floorspace (million square feet)	Mean floorspace per building (thousand square feet)	Primary <sup>a</sup>	Site <sup>b</sup>	Total (billion kilowatthours)	Total (million dollars)
				Total (trillion British thermal units [Btu])	Total (trillion Btu)		
<b>All buildings</b>	5,613	94,844	16.9	11,834	4,081	1,196	\$118,997
<b>Primary space-heating energy source</b>							
Electricity	1,856	27,618	14.9	4,141	1,428	418	\$39,865
Natural gas	2,344	50,060	21.4	5,713	1,970	577	\$57,988
Fuel oil	222	2,223	10.0	166	57	17	\$2,057
District heat	78	6,090	78.0	990	341	100	\$9,379
Propane	338	2,290	6.8	206	71	21	\$2,496
Other sources <sup>d</sup>	63	380	6.0	22	8	2	\$245
<b>Cooling energy sources</b>							
Electricity	4,584	84,526	18.4	10,866	3,747	1,098	\$109,218
Other excluding electricity	47	2,980	63.6	476	164	48	\$4,173
Buildings without cooling	982	7,338	7.5	493	170	50	\$5,606
<b>Water-heating energy sources</b>							
Electricity	2,785	47,125	16.9	6,293	2,170	636	\$62,066
Other excluding electricity	1,805	40,587	22.5	5,077	1,751	513	\$51,654
Buildings without water heating	1,022	7,132	7.0	465	160	47	\$5,277
<b>Cooking energy sources</b>							
Electricity	1,216	30,509	25.1	4,733	1,632	478	\$45,677
Other excluding electricity	522	13,072	25.0	1,801	621	182	\$18,165
Buildings without cooking	3,875	51,264	13.2	5,301	1,828	536	\$55,155
<b>Energy end uses (more than one may apply)</b>							
Buildings with space heating	4,901	88,661	18.1	11,239	3,875	1,136	\$112,030
Buildings with cooling	4,631	87,506	18.9	11,342	3,911	1,146	\$113,391
Buildings with water heating	4,590	87,712	19.1	11,369	3,920	1,149	\$113,720
Buildings with cooking	1,738	43,580	25.1	6,534	2,253	660	\$63,842
Buildings with manufacturing	322	6,871	21.4	847	292	86	\$8,837
Buildings with electricity generation	704	29,441	41.8	4,704	1,622	475	\$46,043
Buildings with lighting	5,503	94,103	17.1	11,812	4,073	1,194	\$118,696
<b>Percentage of floorspace heated</b>							
Not heated	712	6,184	8.7	596	205	60	\$6,966
1% to 50%	693	10,620	15.3	932	321	94	\$9,653
51% to 99%	905	20,174	22.3	2,725	940	275	\$26,910
100%	3,303	57,867	17.5	7,582	2,615	766	\$75,468
<b>Percentage of floorspace cooled</b>							
Not cooled	982	7,338	7.5	493	170	50	\$5,606
1% to 50%	1,111	19,722	17.8	1,326	457	134	\$14,383
51% to 99%	998	26,277	26.3	3,751	1,294	379	\$37,165
100%	2,522	41,507	16.5	6,265	2,160	633	\$61,843
<b>Percentage lit when open</b>							
0%	Q	Q	Q	Q	Q	Q	Q
1% to 50%	1,280	14,172	11.1	1,011	348	102	\$10,984
51% to 99%	1,784	38,847	21.8	5,340	1,841	540	\$52,403
100%	2,272	39,877	17.6	5,412	1,866	547	\$54,817
Building never open or electricity not used	208	1,420	6.8	53	18	5	\$581

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	Number of buildings (thousand)	Total floorspace (million square feet)	Mean floorspace per building (thousand square feet)	Primary <sup>a</sup>	Site <sup>b</sup>	Total (billion kilowatthours)	Total (million dollars)
				Total (trillion British thermal units [Btu])	Total (trillion Btu)		
<b>All buildings</b>	5,613	94,844	16.9	11,834	4,081	1,196	\$118,997
<b>Percentage lit during off hours</b>							
0%	2,062	15,578	7.6	1,146	395	116	\$13,646
1% to 50%	3,246	69,800	21.5	8,707	3,003	880	\$86,673
51% to 100%	240	7,243	30.2	1,529	527	155	\$14,436
Building always open with no off hours	64	2,223	34.6	451	156	46	\$4,241
Electricity not used	N	N	N	N	N	N	N
<b>Heating equipment (more than one may apply)</b>							
Packaged heating units	2,187	48,064	22.0	6,556	2,261	663	\$64,832
Furnaces	1,621	17,272	10.7	1,862	642	188	\$18,612
Individual space heaters	1,246	21,122	16.9	2,562	884	259	\$25,212
Boilers	703	28,831	41.0	3,766	1,299	381	\$36,963
Heat pumps	673	15,110	22.4	2,208	761	223	\$21,283
District heat	83	6,547	79.3	1,060	365	107	\$9,971
Duct reheat	134	7,418	55.2	1,260	434	127	\$11,719
Other	17	821	48.7	300	103	30	\$2,666
<b>Cooling equipment (more than one may apply)</b>							
Packaged air-conditioning units	2,565	56,290	21.9	7,604	2,622	768	\$76,740
Residential-type central air conditioners	1,309	18,270	14.0	2,117	730	214	\$21,624
Individual air conditioners	735	13,619	18.5	1,729	596	175	\$17,352
Central chillers	202	17,926	88.8	2,843	980	287	\$27,563
Heat pumps	492	11,098	22.5	1,514	522	153	\$15,329
District chilled water	55	4,288	77.5	731	252	74	\$6,445
Swamp coolers	85	2,070	24.5	267	92	27	\$2,739
Other	Q	Q	Q	Q	Q	Q	Q
<b>HVAC features (more than one may apply)</b>							
Economizer cycle	747	34,087	45.6	5,061	1,745	512	\$49,990
Variable air volume (VAV) system	698	29,268	42.0	4,327	1,492	437	\$42,285
Dedicated outside air system (DOAS)	249	9,027	36.3	1,511	521	153	\$14,221
Demand controlled ventilation (DCV)	349	10,474	30.0	1,396	481	141	\$14,106
Regular HVAC maintenance	3,554	78,015	22.0	10,462	3,608	1,057	\$104,072
Building automation system (BAS) controls heating or cooling	933	40,462	43.3	6,252	2,156	632	\$60,643
Internet-connected or smart thermostat	325	5,966	18.3	703	242	71	\$6,863
Programmable thermostat	1,545	20,882	13.5	2,154	743	218	\$22,824
<b>Main equipment replaced since 2000 (more than one may apply)</b>							
Heating	1,937	32,451	16.8	3,752	1,294	379	\$39,206
Cooling	1,269	23,013	18.1	2,655	916	268	\$27,227
<b>Water-heating equipment</b>							
Centralized system	3,538	59,280	16.8	7,450	2,569	753	\$75,055
Distributed system	778	14,303	18.4	1,897	654	192	\$18,823
Combination of centralized and distributed systems	274	14,129	51.5	2,022	697	204	\$19,842

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				Total (trillion British thermal units [Btu])	Total (trillion Btu)		
<b>All buildings</b>	5,613	94,844	16.9	11,834	4,081	1,196	\$118,997
<b>Generation technologies (more than one may apply)</b>							
Reciprocating engine generators	580	25,163	43.4	4,093	1,411	414	\$39,392
Solar panels	92	3,734	40.6	473	163	48	\$5,451
Other generation technology	43	2,055	48.0	372	128	38	\$3,708
<b>Lighting equipment types (more than one may apply)</b>							
Incandescent	1,100	21,081	19.2	3,076	1,061	311	\$30,451
Standard fluorescent	4,012	72,912	18.2	9,172	3,163	927	\$92,022
Compact fluorescent	1,130	33,691	29.8	4,921	1,697	497	\$48,580
High-intensity discharge (HID)	238	11,356	47.6	1,633	563	165	\$15,522
Halogen	552	15,012	27.2	2,289	789	231	\$22,352
LED	2,593	61,849	23.8	8,507	2,934	860	\$84,796
Other	Q	Q	Q	Q	Q	Q	Q
<b>Refrigeration equipment (more than one may apply)</b>							
Any refrigeration	3,850	77,589	20.2	10,376	3,578	1,049	\$103,017
Walk-in units	706	29,384	41.6	5,401	1,862	546	\$51,640
Cases or cabinets	837	28,517	34.1	4,937	1,702	499	\$47,736
Large cold storage areas	69	3,592	52.1	851	293	86	\$7,914
Commercial ice makers	872	34,672	39.8	5,625	1,940	569	\$53,515
Residential-type or compact units	3,321	64,735	19.5	8,149	2,810	824	\$81,383
Vending machines	800	42,071	52.6	6,050	2,086	611	\$57,618
No refrigeration	1,763	17,255	9.8	1,458	503	147	\$15,980
<b>Office equipment (more than one may apply)</b>							
Desktop computers	3,804	82,012	21.6	10,735	3,702	1,085	\$106,865
With multiple monitors	1,504	50,844	33.8	6,969	2,403	704	\$68,537
Laptop computers	2,786	69,375	24.9	8,989	3,100	908	\$89,332
Dedicated servers	1,400	51,595	36.8	7,198	2,482	727	\$71,502
Tablets charged in building	1,556	48,778	31.3	6,890	2,376	696	\$67,287
Large floor-standing office devices <sup>e</sup>	1,456	54,088	37.2	7,105	2,450	718	\$70,488
Smaller desktop office devices <sup>e</sup>	3,560	74,467	20.9	9,709	3,348	981	\$96,843
Interactive whiteboards	262	16,939	64.7	2,132	735	215	\$20,708
Televisions or video displays	2,451	63,618	26.0	8,757	3,020	885	\$86,239
Point-of-sale devices or cash registers	1,420	33,606	23.7	5,556	1,916	561	\$54,129
<b>Food preparation or serving areas in non-food service buildings (more than one may apply)</b>							
Snack bar, concession stand, or coffee shop	144	10,361	71.7	1,582	545	160	\$15,252
Fast food or small restaurant	160	9,759	60.9	1,733	598	175	\$16,277
Cafeteria or large restaurant	129	14,531	112.4	1,966	678	199	\$18,876
Commercial kitchen or food preparation area	284	17,698	62.3	2,829	975	286	\$26,749
Small kitchen area	1,018	20,519	20.2	2,442	842	247	\$24,376

**Table C13. Total electricity consumption and expenditures, 2018**

	All buildings using electricity			Electricity consumption		Electricity expenditures	
	Number of buildings (thousand)	Total floorspace (million square feet)	Mean floorspace per building (thousand square feet)	Primary <sup>a</sup> (trillion British thermal units [Btu])	Site <sup>b</sup> (trillion Btu)	Total (billion kilowatthours)	Total (million dollars)
<b>All buildings</b>	5,613	94,844	16.9	11,834	4,081	1,196	\$118,997
<b>Separate computer areas (more than one may apply)</b>							
Server closet	1,237	48,722	39.4	6,488	2,237	656	\$64,282
Data center	116	11,383	98.3	1,828	630	185	\$17,778
Computer-based training room	228	16,556	72.7	2,281	786	230	\$21,804
Student or public computer center	236	12,527	53.1	1,518	523	153	\$14,260
<b>Window and interior lighting features (more than one may apply)</b>							
Multipaned windows	3,472	72,481	20.9	9,544	3,291	965	\$94,108
Tinted window glass	1,657	44,244	26.7	6,163	2,125	623	\$60,716
Reflective window glass	497	17,920	36.1	2,754	950	278	\$26,795
External overhangs or awnings	1,496	28,679	19.2	4,052	1,397	410	\$40,019
Skylights or atriums	506	19,799	39.1	2,541	876	257	\$25,016
Light scheduling	910	33,552	36.9	5,157	1,778	521	\$50,153
Occupancy sensors	1,025	44,304	43.2	6,054	2,088	612	\$60,747
Multilevel lighting or dimming	332	14,424	43.4	2,203	760	223	\$21,106
Daylight harvesting	138	7,244	52.6	1,174	405	119	\$10,934
Plug-load control	58	1,961	34.1	357	123	36	\$3,284
Demand responsive lighting	98	2,045	20.8	250	86	25	\$2,644
Building automation system (BAS) for lighting	317	16,645	52.5	2,656	916	268	\$25,457
<b>Electric vehicle (EV) charging</b>							
Charging stations associated with the building	132	10,165	77.1	1,302	449	132	\$12,974
<b>Annual consumption (kilowatthours)</b>							
10,000 or less	702	2,681	3.8	38	13	4	\$608
10,001 to 50,000	2,176	12,066	5.5	573	198	58	\$7,533
50,001 to 100,000	988	8,844	9.0	702	242	71	\$8,137
100,001 to 500,000	1,279	24,127	18.9	2,687	926	272	\$28,393
500,001 to 1,000,000	257	13,494	52.5	1,745	602	176	\$17,140
1,000,001 to 5,000,000	188	22,642	120.1	3,689	1,272	373	\$34,957
Over 5,000,000	22	10,990	505.5	2,401	828	243	\$22,229

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 and expenditures in buildings that have the end use but not the consumption and expenditures specifically for that end use.

HVAC = Heating, ventilation, and air conditioning.

<sup>a</sup>Primary electricity, which is not included in the sum of major fuels category, is site electricity plus plus the energy used to produce and deliver that electricity.

<sup>b</sup>Site electricity is the amount of electricity that enters a building.

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

<sup>d</sup>Other sources includes wood, coal, solar, and all other energy sources.

<sup>e</sup>Office 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.



**Relative standard errors (RSEs) for Table C13. Total electricity consumption and expenditures, 2018**

	RSEs for all buildings using electricity			RSEs for electricity consumption		RSEs for electricity expenditures	
	Number of buildings	Total floorspace	Mean floorspace per building	Primary <sup>a</sup>	Site <sup>b</sup>	Total	Total
				Total	Total		
<b>All buildings</b>	3.9	3.0	2.6	3.1	3.1	3.1	3.0
<b>Building floorspace (square feet)</b>							
1,001 to 5,000	5.2	5.5	1.9	6.1	6.1	6.1	6.1
5,001 to 10,000	5.8	5.7	1.3	6.1	6.1	6.1	5.9
10,001 to 25,000	5.6	6.2	1.5	10.1	10.1	10.1	8.7
25,001 to 50,000	5.6	5.6	0.9	7.0	7.0	7.0	7.0
50,001 to 100,000	5.3	5.3	1.0	5.9	5.9	5.9	5.6
100,001 to 200,000	5.6	5.5	0.9	5.7	5.7	5.7	5.7
200,001 to 500,000	5.0	5.0	1.0	7.3	7.3	7.3	7.1
Over 500,000	7.8	8.6	4.0	8.0	8.0	8.0	7.4
<b>Principal building activity</b>							
Education	7.8	5.3	6.8	5.9	5.9	5.9	5.7
Food sales	14.3	17.0	12.9	24.8	24.8	24.8	21.9
Food service	7.7	8.5	5.7	9.5	9.5	9.5	9.0
Health care	9.8	5.5	8.5	6.9	6.9	6.9	5.7
Inpatient	19.4	7.2	18.5	9.5	9.5	9.5	7.7
Outpatient	10.3	8.0	8.4	8.6	8.6	8.6	8.7
Lodging	9.4	8.3	9.6	10.3	10.3	10.3	9.0
Mercantile	7.3	6.0	6.5	6.6	6.6	6.6	6.5
Retail (other than mall)	10.0	8.6	7.4	8.7	8.7	8.7	8.6
Enclosed and strip malls	7.6	7.6	8.4	8.3	8.3	8.3	8.0
Office	7.2	5.5	6.9	5.6	5.6	5.6	5.3
Public assembly	9.1	5.8	6.9	8.3	8.3	8.3	7.5
Public order and safety	20.2	15.9	17.4	20.2	20.2	20.2	18.9
Religious worship	9.5	9.3	6.4	8.5	8.5	8.5	8.7
Service	7.4	8.0	6.4	8.4	8.4	8.4	8.4
Warehouse and storage	7.7	7.4	7.5	9.0	9.0	9.0	8.8
Other	17.5	15.4	15.3	15.5	15.5	15.5	16.6
Vacant	20.9	15.8	13.8	19.2	19.2	19.2	19.3
<b>Year constructed</b>							
Before 1920	12.9	10.8	10.5	14.9	14.9	14.9	12.8
1920 to 1945	10.9	8.9	9.7	9.8	9.8	9.8	9.5
1946 to 1959	8.1	7.8	6.5	9.6	9.6	9.6	8.1
1960 to 1969	6.2	5.2	5.3	6.4	6.4	6.4	6.2
1970 to 1979	7.2	5.8	5.8	7.2	7.2	7.2	7.0
1980 to 1989	6.7	5.9	6.1	6.2	6.2	6.2	6.1
1990 to 1999	7.2	6.5	4.7	5.3	5.3	5.3	5.8
2000 to 2009	8.4	6.4	5.5	7.6	7.6	7.6	7.3
2010 to 2018	11.1	7.7	9.4	8.4	8.4	8.4	8.1

Relative standard errors (RSEs) for Table C13. Total electricity consumption and expenditures, 2018

	RSEs for all buildings using electricity			RSEs for electricity consumption		RSEs for electricity expenditures	
	Number of buildings	Total floorspace	Mean floorspace per building	Primary <sup>a</sup>	Site <sup>b</sup>	Total	Total
				Total	Total		
<b>All buildings</b>	3.9	3.0	2.6	3.1	3.1	3.1	3.0
<b>Census region and division</b>							
Northeast	9.8	7.1	7.1	7.1	7.1	7.1	7.2
New England	17.7	10.8	9.6	13.3	13.3	13.3	14.0
Middle Atlantic	11.8	8.8	8.5	8.4	8.4	8.4	8.5
Midwest	10.8	7.3	6.6	7.4	7.4	7.4	7.5
East North Central	12.8	10.3	5.9	9.5	9.5	9.5	10.3
West North Central	21.2	7.7	17.1	11.5	11.5	11.5	7.8
South	7.6	6.0	4.0	5.9	5.9	5.9	6.3
South Atlantic	10.9	6.7	6.7	8.2	8.2	8.2	8.2
East South Central	15.9	20.1	7.9	15.8	15.8	15.8	17.3
West South Central	14.7	11.7	7.1	10.3	10.3	10.3	11.9
West	7.8	7.0	5.8	6.0	6.0	6.0	5.6
Mountain	15.9	13.4	12.3	12.8	12.8	12.8	12.1
Pacific	8.6	7.7	5.3	4.8	4.8	4.8	6.0
<b>Climate zone<sup>c</sup></b>							
Cold or very cold	20.4	17.3	13.6	16.7	16.7	16.7	15.4
Cool	11.6	8.2	7.0	8.8	8.8	8.8	8.2
Mixed mild	15.4	10.6	8.6	9.9	9.9	9.9	9.6
Warm	11.1	10.0	4.2	10.4	10.4	10.4	8.9
Hot or very hot	17.4	13.6	7.3	12.4	12.4	12.4	13.8
<b>Number of floors</b>							
1	4.2	4.4	2.8	5.1	5.1	5.1	4.9
2	5.8	4.4	3.9	4.6	4.6	4.6	5.0
3	10.6	7.6	6.9	9.1	9.1	9.1	8.5
4 to 9	9.4	6.3	7.3	7.2	7.2	7.2	6.8
10 or more	9.8	11.0	7.7	10.9	10.9	10.9	10.0
<b>Elevators and escalators (more than one may apply)</b>							
Any elevators	6.5	4.5	4.3	4.9	4.9	4.9	4.5
1 elevator	7.8	6.0	4.5	7.1	7.1	7.1	6.2
2 to 5 elevators	6.7	5.2	3.5	6.3	6.3	6.3	6.2
6 or more elevators	7.8	8.4	4.7	8.1	8.1	8.1	7.2
Any escalators	28.9	13.7	35.6	13.6	13.6	13.6	12.7
<b>Number of workers (main shift)</b>							
Fewer than 5	5.6	5.9	3.4	6.5	6.5	6.5	6.3
5 to 9	6.1	6.9	4.4	11.4	11.4	11.4	9.4
10 to 19	6.5	7.4	5.3	6.0	6.0	6.0	6.3
20 to 49	6.3	4.8	4.3	5.4	5.4	5.4	5.3
50 to 99	6.7	5.9	4.4	7.2	7.2	7.2	7.4
100 to 249	7.1	5.6	4.2	6.2	6.2	6.2	6.3
250 or more	7.2	6.4	5.7	6.3	6.3	6.3	5.9
<b>Weekly operating hours</b>							
Fewer than 40	6.5	6.8	5.4	9.0	9.0	9.0	8.7
40 to 48	6.2	5.0	4.5	8.5	8.5	8.5	6.9
49 to 60	5.4	4.4	4.2	4.9	4.9	4.9	4.4
61 to 84	7.4	5.3	5.6	6.0	6.0	6.0	5.8
85 to 167	7.4	6.2	6.9	6.0	6.0	6.0	6.6
Open continuously	8.2	5.0	7.7	5.2	5.2	5.2	5.0

Relative standard errors (RSEs) for Table C13. Total electricity consumption and expenditures, 2018

	RSEs for all buildings using electricity			RSEs for electricity consumption		RSEs for electricity expenditures	
	Number of buildings	Total floorspace	Mean floorspace per building	Primary <sup>a</sup>	Site <sup>b</sup>	Total	Total
				Total	Total		
<b>All buildings</b>	3.9	3.0	2.6	3.1	3.1	3.1	3.0
<b>Ownership and occupancy</b>							
Nongovernment owned	3.7	3.3	3.0	3.2	3.2	3.2	3.2
Owner occupied	4.2	3.3	3.5	3.7	3.7	3.7	3.5
Leased to tenant or tenants	5.4	4.7	4.4	4.9	4.9	4.9	4.8
Unoccupied	25.1	22.9	17.6	29.9	29.9	29.9	27.7
Government owned	9.6	6.0	6.1	7.7	7.7	7.7	6.7
Federal	26.0	16.1	29.1	17.7	17.7	17.7	17.2
State	13.0	11.9	9.0	15.8	15.8	15.8	13.1
Local	10.2	6.0	8.2	6.0	6.0	6.0	5.8
<b>Party responsible for operation of energy systems</b>							
Building owner	4.3	3.2	2.9	3.5	3.5	3.5	3.3
Business owner or tenant	6.2	7.2	5.6	6.7	6.7	6.7	6.8
Property management	17.9	11.7	14.8	13.5	13.5	13.5	13.6
Other	17.9	10.7	16.0	12.6	12.6	12.6	11.4
<b>Provider of direct input on energy-related equipment purchases</b>							
Building owner	4.3	3.1	2.8	3.4	3.4	3.4	3.3
Business owner or tenant	9.0	8.8	7.1	8.8	8.8	8.8	9.3
Property management	24.9	16.3	25.2	17.8	17.8	17.8	16.7
Other	10.6	8.1	9.0	8.7	8.7	8.7	7.8
<b>Number of establishments</b>							
1	4.6	3.6	2.8	4.0	4.0	4.0	3.8
2 to 5	6.0	5.5	5.6	6.0	6.0	6.0	5.7
6 to 10	11.6	7.9	8.8	7.5	7.5	7.5	8.2
11 to 20	18.0	8.9	14.6	10.1	10.1	10.1	9.9
More than 20	18.7	10.1	14.4	11.2	11.2	11.2	10.7
Currently unoccupied	23.2	19.0	15.8	25.5	25.5	25.5	24.2
<b>Predominant exterior wall material</b>							
Brick, stone, or stucco	5.2	3.9	3.2	4.7	4.7	4.7	4.2
Concrete (block or poured)	5.4	4.8	5.2	4.3	4.3	4.3	4.4
Concrete panels	12.1	8.4	11.5	8.3	8.3	8.3	9.0
Siding or shingles	7.6	9.1	6.6	17.0	17.0	17.0	13.7
Metal panels	7.5	5.8	5.7	7.3	7.3	7.3	7.7
Window glass	21.3	11.4	20.7	12.0	12.0	12.0	13.2
Other	15.3	14.0	12.1	15.2	15.2	15.2	14.8
<b>Predominant roof material</b>							
Metal surfacing	6.2	5.5	3.8	8.4	8.4	8.4	7.3
Synthetic or rubber	6.2	4.1	4.6	4.8	4.8	4.8	4.8
Built-up	7.7	4.8	6.4	5.3	5.3	5.3	5.1
Slate or tile shingles	10.1	10.1	7.2	10.0	10.0	10.0	10.2
Wooden materials (including shingles)	13.0	17.9	12.9	17.2	17.2	17.2	18.0
Asphalt, fiberglass, or other shingles	6.5	5.7	4.2	6.8	6.8	6.8	7.2
Concrete	20.8	11.9	17.6	15.3	15.3	15.3	13.5
Other	16.1	9.9	12.3	13.0	13.0	13.0	16.0

Relative standard errors (RSEs) for Table C13. Total electricity consumption and expenditures, 2018

	RSEs for all buildings using electricity			RSEs for electricity consumption		RSEs for electricity expenditures	
	Number of buildings	Total floorspace	Mean floorspace per building	Primary <sup>a</sup>	Site <sup>b</sup>	Total	Total
				Total	Total		
<b>All buildings</b>	3.9	3.0	2.6	3.1	3.1	3.1	3.0
<b>Roof tilt</b>							
Flat	4.6	3.2	4.0	3.5	3.5	3.5	3.5
Shallow pitch	4.8	4.8	3.8	5.4	5.4	5.4	5.4
Steeper pitch	7.6	5.7	4.1	9.0	9.0	9.0	7.5
<b>Cool roof characteristics (more than one may apply)</b>							
White or reflective coating or paint	5.8	4.4	5.0	5.2	5.2	5.2	4.7
White or reflective tiles or shingles	14.3	10.3	12.2	15.9	15.9	15.9	13.7
Aluminum coating	8.7	8.9	6.8	10.0	10.0	10.0	9.0
Ballasted roof system	14.8	9.5	13.9	9.4	9.4	9.4	9.5
Other cool roof property	29.3	19.2	28.7	20.3	20.3	20.3	18.9
<b>Renovations since 2000 (more than one may apply)</b>							
Any type of renovation	5.0	3.4	3.7	3.3	3.3	3.3	3.5
Addition or annex	9.4	6.0	7.6	5.0	5.0	5.0	5.3
Reduction in floorspace	22.2	13.2	20.4	15.0	15.0	15.0	14.8
Roof replacement	6.7	4.3	5.1	4.7	4.7	4.7	4.8
Interior wall reconfiguration	6.0	4.1	4.9	4.3	4.3	4.3	4.5
Window replacement	9.6	5.9	8.6	6.5	6.5	6.5	6.0
HVAC equipment upgrade	7.3	4.2	5.6	4.1	4.1	4.1	4.5
Lighting upgrade	6.0	3.9	4.5	4.0	4.0	4.0	3.9
Electrical upgrade	7.1	5.6	6.1	5.2	5.2	5.2	5.1
Plumbing system upgrade	7.9	5.2	7.1	5.3	5.3	5.3	5.4
Insulation upgrade	9.2	7.8	9.7	8.1	8.1	8.1	8.3
Fire, safety, or security upgrade	6.2	4.4	5.3	4.7	4.7	4.7	4.7
Structural upgrade	14.0	10.1	14.2	11.1	11.1	11.1	11.8
Other	27.0	14.9	24.2	13.0	13.0	13.0	14.2
No renovations	4.3	3.9	2.8	5.0	5.0	5.0	4.5
Buildings constructed 2013 or later	12.0	8.4	10.4	9.3	9.3	9.3	7.9
<b>Energy sources (more than one may apply)</b>							
Electricity	3.9	3.0	2.6	3.1	3.1	3.1	3.0
Natural gas	4.8	3.4	3.2	3.1	3.1	3.1	3.0
Fuel oil	9.7	5.4	9.1	6.3	6.3	6.3	6.1
District heat	14.7	11.4	12.3	12.7	12.7	12.7	10.8
District chilled water	20.1	13.7	15.7	15.6	15.6	15.6	13.5
Propane	10.1	7.6	8.5	12.3	12.3	12.3	10.3
Solar	15.9	11.6	14.1	10.9	10.9	10.9	10.6
Wood, coal, and other	17.3	14.0	13.3	15.6	15.6	15.6	15.8
<b>Space-heating energy sources</b>							
Electricity	4.7	3.7	3.5	4.4	4.4	4.4	4.1
Electricity main	6.4	5.5	4.2	6.4	6.4	6.4	5.8
Electricity secondary	6.1	5.0	5.4	5.7	5.7	5.7	5.5
Other excluding electricity	6.2	4.2	3.9	4.2	4.2	4.2	4.1
Buildings without heating	9.1	10.8	5.9	10.9	10.9	10.9	10.4

Relative standard errors (RSEs) for Table C13. Total electricity consumption and expenditures, 2018

	RSEs for all buildings using electricity			RSEs for electricity consumption		RSEs for electricity expenditures	
	Number of buildings	Total floorspace	Mean floorspace per building	Primary <sup>a</sup>	Site <sup>b</sup>	Total	Total
				Total	Total		
<b>All buildings</b>	3.9	3.0	2.6	3.1	3.1	3.1	3.0
<b>Primary space-heating energy source</b>							
Electricity	6.4	5.5	4.2	6.4	6.4	6.4	5.8
Natural gas	5.5	4.1	3.7	3.8	3.8	3.8	3.8
Fuel oil	16.1	15.3	13.2	15.3	15.3	15.3	16.6
District heat	15.8	12.6	13.9	13.3	13.3	13.3	11.7
Propane	17.5	16.9	11.4	24.7	24.7	24.7	25.0
Other sources <sup>d</sup>	22.4	30.3	20.3	30.6	30.6	30.6	27.3
<b>Cooling energy sources</b>							
Electricity	3.9	3.0	2.7	3.1	3.1	3.1	3.0
Other excluding electricity	22.3	14.4	18.0	16.7	16.7	16.7	14.3
Buildings without cooling	8.1	8.5	6.5	24.2	24.2	24.2	18.7
<b>Water-heating energy sources</b>							
Electricity	4.0	3.6	3.2	4.5	4.5	4.5	4.0
Other excluding electricity	5.8	4.4	3.7	4.8	4.8	4.8	4.3
Buildings without water heating	6.7	9.5	7.1	11.9	11.9	11.9	11.9
<b>Cooking energy sources</b>							
Electricity	5.7	3.9	4.2	4.9	4.9	4.9	4.5
Other excluding electricity	8.0	4.9	7.6	5.0	5.0	5.0	5.0
Buildings without cooking	4.1	4.0	3.3	4.4	4.4	4.4	4.3
<b>Energy end uses (more than one may apply)</b>							
Buildings with space heating	4.1	3.0	2.8	3.2	3.2	3.2	3.0
Buildings with cooling	3.9	3.0	2.6	3.1	3.1	3.1	3.0
Buildings with water heating	3.9	2.9	2.6	3.1	3.1	3.1	3.0
Buildings with cooking	5.0	3.1	3.7	3.8	3.8	3.8	3.6
Buildings with manufacturing	11.3	7.9	10.6	14.8	14.8	14.8	12.6
Buildings with electricity generation	7.3	4.4	6.7	4.9	4.9	4.9	4.7
Buildings with lighting	3.9	3.0	2.7	3.1	3.1	3.1	3.0
<b>Percentage of floorspace heated</b>							
Not heated	9.1	10.8	5.9	10.9	10.9	10.9	10.4
1% to 50%	8.5	7.1	7.2	8.2	8.2	8.2	8.1
51% to 99%	6.7	5.3	5.6	5.2	5.2	5.2	5.3
100%	4.1	3.2	2.9	3.5	3.5	3.5	3.3
<b>Percentage of floorspace cooled</b>							
Not cooled	8.1	8.5	6.5	24.2	24.2	24.2	18.7
1% to 50%	5.9	5.2	5.2	5.5	5.5	5.5	5.7
51% to 99%	6.6	5.1	5.1	5.1	5.1	5.1	5.3
100%	4.3	3.5	3.2	3.6	3.6	3.6	3.4
<b>Percentage lit when open</b>							
0%	35.1	38.5	25.5	76.4	76.4	76.4	73.7
1% to 50%	6.7	6.0	5.1	6.5	6.5	6.5	6.6
51% to 99%	4.8	3.6	3.8	4.4	4.4	4.4	4.1
100%	4.7	3.8	3.8	4.0	4.0	4.0	3.7
Building never open or electricity not used	15.9	14.3	9.7	17.9	17.9	17.9	18.1

Relative standard errors (RSEs) for Table C13. Total electricity consumption and expenditures, 2018

	RSEs for all buildings using electricity			RSEs for electricity consumption		RSEs for electricity expenditures	
	Number of buildings	Total floorspace	Mean floorspace per building	Primary <sup>a</sup>	Site <sup>b</sup>	Total	Total
				Total	Total		
<b>All buildings</b>	3.9	3.0	2.6	3.1	3.1	3.1	3.0
<b>Percentage lit during off hours</b>							
0%	6.5	6.7	3.9	8.2	8.2	8.2	7.8
1% to 50%	3.8	3.0	2.8	3.3	3.3	3.3	3.1
51% to 100%	10.6	6.7	10.4	8.7	8.7	8.7	8.4
Building always open with no off hours	15.2	11.6	14.5	12.8	12.8	12.8	13.1
Electricity not used	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Heating equipment (more than one may apply)</b>							
Packaged heating units	4.0	3.6	3.2	3.6	3.6	3.6	3.5
Furnaces	7.2	5.7	5.2	6.5	6.5	6.5	6.0
Individual space heaters	5.9	4.8	4.2	5.8	5.8	5.8	5.7
Boilers	6.2	4.0	5.2	5.2	5.2	5.2	4.6
Heat pumps	7.7	5.4	6.3	6.1	6.1	6.1	5.4
District heat	15.4	11.6	12.9	12.1	12.1	12.1	10.7
Duct reheat	12.6	7.0	11.4	7.2	7.2	7.2	7.8
Other	46.4	24.1	41.4	40.7	40.7	40.7	38.4
<b>Cooling equipment (more than one may apply)</b>							
Packaged air-conditioning units	4.3	3.4	3.4	3.6	3.6	3.6	3.6
Residential-type central air conditioners	7.6	5.2	4.9	6.1	6.1	6.1	5.9
Individual air conditioners	6.6	5.3	5.4	6.4	6.4	6.4	6.0
Central chillers	9.0	5.0	8.4	5.1	5.1	5.1	4.9
Heat pumps	11.0	6.8	9.6	7.2	7.2	7.2	7.1
District chilled water	20.1	13.7	15.7	15.6	15.6	15.6	13.5
Swamp coolers	12.8	13.1	11.3	15.1	15.1	15.1	13.8
Other	53.2	36.4	67.0	41.3	41.3	41.3	43.2
<b>HVAC features (more than one may apply)</b>							
Economizer cycle	5.6	3.9	5.2	4.1	4.1	4.1	4.0
Variable air volume (VAV) system	8.4	4.9	7.1	5.4	5.4	5.4	4.9
Dedicated outside air system (DOAS)	11.0	7.8	10.1	11.4	11.4	11.4	9.8
Demand controlled ventilation (DCV)	8.8	5.5	7.7	5.8	5.8	5.8	6.2
Regular HVAC maintenance	4.2	3.2	2.9	3.3	3.3	3.3	3.2
Building automation system (BAS) controls heating or cooling	6.4	3.7	5.0	4.2	4.2	4.2	4.1
Internet-connected or smart thermostat	12.2	10.5	8.6	11.4	11.4	11.4	10.5
Programmable thermostat	4.7	5.4	3.8	5.4	5.4	5.4	5.4
<b>Main equipment replaced since 2000 (more than one may apply)</b>							
Heating	4.9	3.8	3.7	3.7	3.7	3.7	3.8
Cooling	4.8	4.3	4.4	4.8	4.8	4.8	4.6
<b>Water-heating equipment</b>							
Centralized system	4.4	3.4	2.7	4.2	4.2	4.2	3.8
Distributed system	8.9	6.4	6.8	7.0	7.0	7.0	6.8
Combination of centralized and distributed systems	8.8	5.2	7.2	5.8	5.8	5.8	5.9

Relative standard errors (RSEs) for Table C13. Total electricity consumption and expenditures, 2018

	RSEs for all buildings using electricity			RSEs for electricity consumption		RSEs for electricity expenditures	
	Number of buildings	Total floorspace	Mean floorspace per building	Primary <sup>a</sup>	Site <sup>b</sup>	Total	Total
				Total	Total		
<b>All buildings</b>	3.9	3.0	2.6	3.1	3.1	3.1	3.0
<b>Generation technologies (more than one may apply)</b>							
Reciprocating engine generators	8.8	4.8	8.1	5.4	5.4	5.4	5.2
Solar panels	15.8	11.6	13.8	10.8	10.8	10.8	10.8
Other generation technology	21.4	14.4	16.9	18.7	18.7	18.7	18.9
<b>Lighting equipment types (more than one may apply)</b>							
Incandescent	7.8	4.5	6.2	5.1	5.1	5.1	4.5
Standard fluorescent	4.2	3.4	2.8	3.5	3.5	3.5	3.3
Compact fluorescent	5.2	4.2	4.5	4.5	4.5	4.5	4.4
High-intensity discharge (HID)	9.8	7.1	9.1	7.5	7.5	7.5	6.6
Halogen	8.0	4.2	7.6	4.7	4.7	4.7	4.5
LED	3.6	2.9	3.0	3.4	3.4	3.4	3.2
Other	57.3	24.1	71.8	27.3	27.3	27.3	26.0
<b>Refrigeration equipment (more than one may apply)</b>							
Any refrigeration	4.1	3.0	2.8	3.2	3.2	3.2	3.0
Walk-in units	5.4	3.4	4.8	4.2	4.2	4.2	4.0
Cases or cabinets	5.8	3.7	4.6	4.1	4.1	4.1	4.0
Large cold storage areas	17.2	11.3	16.6	16.9	16.9	16.9	15.9
Commercial ice makers	5.5	3.5	4.7	4.0	4.0	4.0	3.7
Residential-type or compact units	4.3	3.2	3.1	3.2	3.2	3.2	2.9
Vending machines	6.1	3.8	5.0	3.9	3.9	3.9	3.7
No refrigeration	5.3	5.2	4.9	6.7	6.7	6.7	6.9
<b>Office equipment (more than one may apply)</b>							
Desktop computers	4.0	2.9	2.7	3.2	3.2	3.2	3.0
With multiple monitors	5.0	3.5	3.9	3.9	3.9	3.9	3.7
Laptop computers	4.0	3.0	2.9	3.2	3.2	3.2	3.1
Dedicated servers	4.9	3.3	4.1	3.0	3.0	3.0	3.0
Tablets charged in building	4.4	3.3	3.7	3.9	3.9	3.9	3.6
Large floor-standing office devices <sup>e</sup>	4.4	3.0	3.7	3.4	3.4	3.4	3.3
Smaller desktop office devices <sup>e</sup>	4.1	3.1	2.7	3.3	3.3	3.3	3.2
Interactive whiteboards	8.7	4.5	7.5	6.0	6.0	6.0	5.6
Televisions or video displays	3.8	3.0	3.0	3.2	3.2	3.2	3.1
Point-of-sale devices or cash registers	5.2	3.4	4.4	3.8	3.8	3.8	3.9
<b>Food preparation or serving areas in non-food service buildings (more than one may apply)</b>							
Snack bar, concession stand, or coffee shop	11.0	6.7	11.3	6.4	6.4	6.4	5.9
Fast food or small restaurant	9.4	5.9	9.9	5.7	5.7	5.7	5.6
Cafeteria or large restaurant	7.7	4.6	7.2	5.2	5.2	5.2	5.0
Commercial kitchen or food preparation area	8.5	4.4	7.3	4.9	4.9	4.9	5.0
Small kitchen area	6.5	4.7	5.1	5.5	5.5	5.5	5.1

Relative standard errors (RSEs) for Table C13. Total electricity consumption and expenditures, 2018

	RSEs for all buildings using electricity			RSEs for electricity consumption		RSEs for electricity expenditures	
	Number of buildings	Total floorspace	Mean floorspace per building	Primary <sup>a</sup>	Site <sup>b</sup>	Total	Total
				Total	Total		
<b>All buildings</b>	3.9	3.0	2.6	3.1	3.1	3.1	3.0
<b>Separate computer areas (more than one may apply)</b>							
Server closet	5.3	3.4	4.4	3.2	3.2	3.2	3.2
Data center	13.1	6.7	13.4	6.9	6.9	6.9	6.6
Computer-based training room	8.4	4.6	7.6	4.9	4.9	4.9	4.8
Student or public computer center	8.0	4.6	8.4	5.5	5.5	5.5	5.1
<b>Window and interior lighting features (more than one may apply)</b>							
Multipaned windows	4.3	3.2	2.9	3.4	3.4	3.4	3.3
Tinted window glass	4.1	3.4	3.4	3.8	3.8	3.8	3.4
Reflective window glass	7.0	5.6	5.6	5.8	5.8	5.8	5.4
External overhangs or awnings	4.8	4.5	3.6	4.7	4.7	4.7	4.4
Skylights or atriums	7.1	4.5	7.1	4.8	4.8	4.8	4.3
Light scheduling	5.2	4.1	4.6	4.5	4.5	4.5	4.2
Occupancy sensors	6.5	3.8	5.3	4.1	4.1	4.1	3.8
Multilevel lighting or dimming	10.0	6.6	7.9	8.1	8.1	8.1	7.1
Daylight harvesting	12.0	6.3	11.2	8.1	8.1	8.1	7.3
Plug-load control	18.4	12.2	19.6	20.7	20.7	20.7	15.2
Demand responsive lighting	30.7	15.2	23.2	12.8	12.8	12.8	12.5
Building automation system (BAS) for lighting	9.3	5.2	8.0	5.1	5.1	5.1	5.3
<b>Electric vehicle (EV) charging</b>							
Charging stations associated with the building	11.5	7.2	11.1	8.4	8.4	8.4	7.6
<b>Annual consumption (kilowatthours)</b>							
10,000 or less	9.5	10.9	6.6	10.0	10.0	10.0	9.5
10,001 to 50,000	5.7	6.3	3.3	6.3	6.3	6.3	6.5
50,001 to 100,000	6.2	5.9	4.7	6.1	6.1	6.1	6.3
100,001 to 500,000	4.4	4.6	2.9	4.5	4.5	4.5	4.6
500,001 to 1,000,000	6.4	5.7	3.2	6.3	6.3	6.3	6.3
1,000,001 to 5,000,000	6.2	4.6	3.6	5.9	5.9	5.9	5.5
Over 5,000,000	6.4	6.8	5.1	7.0	7.0	7.0	6.8

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>.

<sup>a</sup>Primary electricity, which is not included in the sum of major fuels category, is site electricity plus the energy used to produce and deliver that electricity.

<sup>b</sup>Site electricity is the amount of electricity that enters a building.

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

<sup>d</sup>Other sources includes wood, coal, solar, and all other energy sources.

<sup>e</sup>Office devices refers to any combination of printers, copiers, scanners, or FAX machines.