

Table C16. Electricity expenditures by Census region, 2018

	Total electricity expenditures (million dollars)				Electricity expenditures (dollars)							
					Per kWh				Per square foot			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	\$21,721	\$29,028	\$40,783	\$27,464	\$0.11	\$0.10	\$0.09	\$0.12	\$1.37	\$1.14	\$1.19	\$1.43
Building floorspace (square feet)												
1,001 to 5,000	\$1,562	\$3,267	\$4,685	\$2,605	\$0.14	\$0.11	\$0.10	\$0.13	\$1.41	\$1.53	\$1.74	\$1.71
5,001 to 10,000	\$1,378	\$2,788	\$4,283	\$3,072	\$0.14	\$0.11	\$0.09	\$0.12	\$1.23	\$0.95	\$1.28	\$1.38
10,001 to 25,000	\$2,979	\$4,993	\$5,061	\$4,294	\$0.13	\$0.10	\$0.09	\$0.13	\$1.30	\$1.17	\$0.90	\$1.31
25,001 to 50,000	\$3,650	\$4,297	\$5,058	\$4,310	\$0.12	\$0.10	\$0.09	\$0.12	\$1.71	\$1.06	\$1.08	\$1.42
50,001 to 100,000	\$2,724	\$4,101	\$7,017	\$3,744	\$0.11	\$0.10	\$0.08	\$0.12	\$1.24	\$1.05	\$1.11	\$1.31
100,001 to 200,000	\$3,229	\$3,083	\$5,803	\$3,820	\$0.11	\$0.09	\$0.08	\$0.11	\$1.21	\$1.12	\$1.16	\$1.48
200,001 to 500,000	\$3,543	\$3,600	\$5,580	\$3,843	\$0.11	\$0.08	\$0.08	\$0.13	\$1.49	\$1.18	\$1.33	\$1.82
Over 500,000	\$2,657	\$2,899	\$3,297	\$1,775	\$0.10	\$0.09	\$0.08	\$0.10	\$1.39	\$1.24	\$1.32	\$1.14
Principal building activity												
Education	\$2,143	\$3,047	\$4,936	\$2,468	\$0.11	\$0.10	\$0.09	\$0.12	\$0.84	\$0.79	\$0.99	\$1.08
Food sales	Q	\$2,558	\$1,183	Q	Q	\$0.09	\$0.09	Q	Q	\$6.34	\$4.75	Q
Food service	\$541	\$1,308	\$2,496	\$1,545	\$0.13	\$0.11	\$0.08	\$0.10	\$3.92	\$4.68	\$4.44	\$3.82
Health care	\$1,634	\$2,236	\$2,581	\$2,461	\$0.11	\$0.08	\$0.08	\$0.11	\$2.10	\$2.08	\$2.20	\$2.49
Inpatient	\$880	\$1,565	\$1,794	\$1,338	\$0.11	\$0.08	\$0.08	\$0.10	\$2.40	\$2.20	\$2.50	\$2.89
Outpatient	\$754	\$671	\$786	\$1,123	\$0.11	\$0.10	\$0.09	\$0.13	\$1.83	\$1.85	\$1.72	\$2.13
Lodging	\$1,842	\$2,304	\$3,094	\$2,394	\$0.11	\$0.09	\$0.09	\$0.11	\$1.53	\$1.39	\$1.30	\$1.38
Mercantile	\$2,259	\$3,744	\$6,356	\$4,190	\$0.11	\$0.09	\$0.08	\$0.11	\$1.63	\$1.43	\$1.42	\$1.82
Retail (other than mall)	\$829	\$1,821	\$2,856	\$1,311	\$0.12	\$0.10	\$0.09	\$0.11	\$1.38	\$1.23	\$1.32	\$1.39
Enclosed and strip malls	\$1,430	\$1,923	\$3,500	\$2,879	\$0.10	\$0.09	\$0.08	\$0.11	\$1.81	\$1.68	\$1.52	\$2.12
Office	\$4,842	\$5,283	\$7,879	\$5,708	\$0.11	\$0.10	\$0.09	\$0.13	\$1.51	\$1.22	\$1.38	\$1.67
Public assembly	\$1,284	\$2,243	\$3,383	\$1,609	\$0.12	\$0.10	\$0.08	\$0.12	\$1.16	\$1.19	\$1.25	\$1.08
Public order and safety	Q	Q	\$891	\$485	Q	Q	\$0.08	\$0.13	Q	Q	\$1.32	\$1.50
Religious worship	\$350	\$693	\$1,417	\$530	\$0.12	\$0.11	\$0.10	\$0.14	\$0.60	\$0.48	\$0.55	\$0.61
Service	\$1,208	\$1,373	\$1,465	\$1,003	\$0.13	\$0.11	\$0.10	\$0.12	\$0.95	\$0.63	\$0.87	\$0.94
Warehouse and storage	\$1,732	\$2,405	\$3,462	\$2,622	\$0.13	\$0.10	\$0.09	\$0.13	\$0.76	\$0.55	\$0.58	\$0.71
Other	\$2,786	\$1,236	\$1,433	\$1,612	\$0.12	\$0.09	\$0.07	\$0.13	\$3.74	\$2.07	\$1.80	\$6.01
Vacant	Q	\$208	\$208	Q	Q	\$0.11	\$0.09	Q	Q	\$0.45	\$0.44	Q
Year constructed												
Before 1920	\$1,294	\$922	\$790	Q	\$0.12	\$0.11	\$0.09	\$0.09	\$1.01	\$0.84	\$1.00	\$1.51
1920 to 1945	\$2,111	\$1,856	\$1,401	\$1,425	\$0.11	\$0.10	\$0.09	\$0.13	\$1.37	\$0.97	\$1.14	\$1.60
1946 to 1959	\$1,552	\$1,468	\$2,394	\$1,167	\$0.11	\$0.10	\$0.09	\$0.12	\$1.01	\$0.88	\$0.99	\$0.97
1960 to 1969	\$2,417	\$2,906	\$4,036	\$2,712	\$0.11	\$0.10	\$0.08	\$0.13	\$1.18	\$1.06	\$1.09	\$1.55
1970 to 1979	\$3,084	\$4,605	\$4,895	\$3,469	\$0.11	\$0.10	\$0.09	\$0.13	\$1.37	\$1.19	\$1.17	\$1.34
1980 to 1989	\$4,125	\$3,743	\$6,227	\$4,837	\$0.13	\$0.10	\$0.09	\$0.12	\$2.08	\$1.29	\$1.21	\$1.49
1990 to 1999	\$2,451	\$3,825	\$6,976	\$4,530	\$0.11	\$0.10	\$0.09	\$0.12	\$1.26	\$0.98	\$1.16	\$1.41
2000 to 2009	\$3,039	\$6,786	\$9,139	\$5,407	\$0.12	\$0.10	\$0.08	\$0.11	\$1.45	\$1.42	\$1.31	\$1.58
2010 to 2018	\$1,648	\$2,917	\$4,926	\$3,327	\$0.11	\$0.09	\$0.08	\$0.11	\$1.48	\$1.14	\$1.26	\$1.33
Climate zone^a												
Cold or very cold	\$1,645	\$5,788	N	\$1,131	\$0.15	\$0.09	N	\$0.09	\$1.51	\$1.21	N	\$1.07
Cool	\$8,950	\$16,119	N	\$4,904	\$0.12	\$0.10	N	\$0.08	\$1.29	\$1.07	N	\$1.11
Mixed mild	\$11,126	\$7,122	\$9,592	\$4,292	\$0.11	\$0.10	\$0.09	\$0.11	\$1.43	\$1.25	\$1.26	\$1.19
Warm	N	N	\$19,753	\$13,215	N	N	\$0.08	\$0.15	N	N	\$1.16	\$1.73
Hot or very hot	N	N	\$11,439	\$3,923	N	N	\$0.08	\$0.11	N	N	\$1.17	\$1.58

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					Per kWh				Per square foot			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	\$21,721	\$29,028	\$40,783	\$27,464	\$0.11	\$0.10	\$0.09	\$0.12	\$1.37	\$1.14	\$1.19	\$1.43
Number of floors												
1	\$6,467	\$13,055	\$20,119	\$12,971	\$0.12	\$0.10	\$0.09	\$0.12	\$1.48	\$1.16	\$1.17	\$1.38
2	\$4,592	\$6,895	\$8,006	\$5,952	\$0.12	\$0.10	\$0.09	\$0.12	\$1.16	\$1.00	\$1.02	\$1.33
3	\$3,668	\$3,732	\$3,513	\$1,702	\$0.11	\$0.10	\$0.08	\$0.12	\$1.52	\$1.07	\$1.11	\$1.20
4 to 9	\$4,111	\$3,580	\$6,270	\$4,811	\$0.11	\$0.09	\$0.08	\$0.12	\$1.24	\$1.35	\$1.42	\$1.82
10 or more	\$2,882	\$1,766	\$2,875	\$2,028	\$0.10	\$0.09	\$0.09	\$0.10	\$1.65	\$1.47	\$1.61	\$1.61
Elevators and escalators (more than one may apply)												
Any elevators	\$11,440	\$11,185	\$15,747	\$11,216	\$0.11	\$0.09	\$0.08	\$0.12	\$1.40	\$1.19	\$1.31	\$1.63
1 elevator	\$3,610	\$3,953	\$5,052	\$3,038	\$0.11	\$0.10	\$0.09	\$0.12	\$1.16	\$0.97	\$1.09	\$1.28
2 to 5 elevators	\$4,437	\$4,101	\$6,074	\$4,874	\$0.11	\$0.10	\$0.08	\$0.12	\$1.48	\$1.23	\$1.36	\$1.93
6 or more elevators	\$3,393	\$3,131	\$4,621	\$3,304	\$0.10	\$0.09	\$0.08	\$0.11	\$1.63	\$1.57	\$1.58	\$1.67
Any escalators	\$1,135	\$1,058	\$1,678	\$1,115	\$0.10	\$0.10	\$0.08	\$0.10	\$1.28	\$1.38	\$1.30	\$1.38
Number of workers (main shift)												
Fewer than 5	\$2,938	\$5,062	\$5,908	\$3,656	\$0.13	\$0.11	\$0.09	\$0.13	\$0.99	\$0.87	\$0.83	\$1.01
5 to 9	\$1,455	\$3,513	\$4,712	\$2,622	\$0.12	\$0.10	\$0.09	\$0.13	\$1.13	\$1.28	\$1.14	\$1.23
10 to 19	\$1,722	\$3,504	\$4,328	\$3,415	\$0.11	\$0.10	\$0.09	\$0.12	\$1.17	\$0.99	\$1.11	\$1.41
20 to 49	\$3,584	\$5,695	\$7,193	\$5,154	\$0.12	\$0.10	\$0.09	\$0.11	\$1.56	\$1.26	\$1.23	\$1.48
50 to 99	\$3,816	\$3,332	\$6,178	\$4,012	\$0.12	\$0.10	\$0.08	\$0.12	\$1.63	\$1.06	\$1.28	\$1.52
100 to 249	\$3,669	\$3,752	\$5,960	\$3,872	\$0.11	\$0.09	\$0.08	\$0.12	\$1.39	\$1.19	\$1.35	\$1.75
250 or more	\$4,536	\$4,172	\$6,505	\$4,733	\$0.11	\$0.09	\$0.08	\$0.12	\$1.62	\$1.62	\$1.60	\$1.76
Weekly operating hours												
Fewer than 40	\$818	\$2,301	\$2,702	\$1,673	\$0.11	\$0.11	\$0.10	\$0.13	\$0.61	\$0.74	\$0.71	\$0.88
40 to 48	\$2,151	\$4,314	\$6,653	\$4,519	\$0.12	\$0.10	\$0.09	\$0.13	\$0.93	\$0.88	\$0.90	\$1.10
49 to 60	\$4,004	\$5,058	\$8,283	\$5,720	\$0.12	\$0.10	\$0.09	\$0.12	\$1.01	\$0.88	\$0.99	\$1.22
61 to 84	\$3,988	\$4,639	\$6,616	\$5,051	\$0.11	\$0.10	\$0.08	\$0.12	\$1.45	\$1.14	\$1.35	\$1.74
85 to 167	\$3,121	\$4,566	\$5,511	\$3,687	\$0.12	\$0.10	\$0.08	\$0.11	\$1.71	\$1.58	\$1.80	\$1.83
Open continuously	\$7,639	\$8,151	\$11,019	\$6,814	\$0.11	\$0.09	\$0.08	\$0.11	\$2.12	\$1.71	\$1.62	\$1.91
Ownership and occupancy												
Nongovernment owned	\$18,546	\$23,829	\$30,759	\$21,602	\$0.12	\$0.10	\$0.09	\$0.12	\$1.48	\$1.19	\$1.20	\$1.45
Owner occupied	\$10,727	\$15,137	\$19,381	\$10,570	\$0.12	\$0.10	\$0.09	\$0.12	\$1.40	\$1.21	\$1.17	\$1.35
Leased to tenant or tenants	\$7,795	\$8,623	\$11,294	\$11,024	\$0.12	\$0.10	\$0.08	\$0.12	\$1.63	\$1.18	\$1.26	\$1.59
Unoccupied	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Government owned	\$3,175	\$5,199	\$10,024	\$5,862	\$0.11	\$0.10	\$0.08	\$0.12	\$0.98	\$0.96	\$1.16	\$1.36
Federal	\$444	\$522	\$1,119	\$376	\$0.11	\$0.09	\$0.08	\$0.11	\$1.54	\$1.28	\$1.22	\$1.11
State	\$939	\$1,342	\$3,789	\$1,984	\$0.10	\$0.10	\$0.08	\$0.11	\$1.02	\$1.04	\$1.18	\$1.39
Local	\$1,792	\$3,336	\$5,116	\$3,502	\$0.11	\$0.10	\$0.09	\$0.13	\$0.87	\$0.89	\$1.13	\$1.37
Party responsible for operation of energy systems												
Building owner	\$17,711	\$24,385	\$33,023	\$21,161	\$0.11	\$0.10	\$0.09	\$0.12	\$1.33	\$1.14	\$1.17	\$1.41
Business owner or tenant	\$3,230	\$3,185	\$5,635	\$4,747	\$0.12	\$0.10	\$0.09	\$0.13	\$1.62	\$1.12	\$1.25	\$1.47
Property management	\$387	\$567	\$1,032	\$844	\$0.11	\$0.10	\$0.09	\$0.11	\$1.46	\$1.32	\$1.42	\$1.60
Other	\$393	\$891	\$1,093	\$712	\$0.11	\$0.10	\$0.09	\$0.12	\$1.92	\$1.11	\$1.33	\$1.76
Provider of direct input on energy- related equipment purchases												
Building owner	\$18,152	\$25,174	\$34,835	\$21,971	\$0.11	\$0.10	\$0.09	\$0.12	\$1.31	\$1.13	\$1.17	\$1.40
Business owner or tenant	\$2,296	\$1,935	\$3,377	\$3,127	\$0.13	\$0.09	\$0.09	\$0.12	\$1.92	\$1.12	\$1.30	\$1.69
Property management	Q	Q	\$539	Q	Q	Q	\$0.09	Q	Q	Q	\$1.37	Q
Other	\$1,090	\$1,525	\$2,033	\$1,868	\$0.11	\$0.10	\$0.09	\$0.14	\$1.77	\$1.21	\$1.31	\$1.30

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	Total electricity expenditures (million dollars)				Electricity expenditures (dollars)							
					Per kWh				Per square foot			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	\$21,721	\$29,028	\$40,783	\$27,464	\$0.11	\$0.10	\$0.09	\$0.12	\$1.37	\$1.14	\$1.19	\$1.43
Number of establishments												
1	\$14,032	\$20,134	\$26,978	\$17,040	\$0.12	\$0.10	\$0.09	\$0.12	\$1.38	\$1.10	\$1.16	\$1.37
2 to 5	\$3,250	\$4,959	\$6,952	\$5,411	\$0.11	\$0.10	\$0.08	\$0.11	\$1.16	\$1.28	\$1.17	\$1.43
6 to 10	\$1,719	\$1,493	\$2,539	\$2,231	\$0.11	\$0.10	\$0.08	\$0.12	\$1.47	\$1.14	\$1.33	\$1.96
11 to 20	\$1,527	\$958	\$2,225	\$1,514	\$0.11	\$0.09	\$0.09	\$0.12	\$2.01	\$1.30	\$1.45	\$1.75
More than 20	\$1,167	\$1,377	\$1,987	\$1,250	\$0.10	\$0.09	\$0.08	\$0.13	\$1.51	\$1.42	\$1.41	\$1.50
Currently unoccupied	Q	Q	\$103	Q	Q	Q	\$0.10	Q	Q	Q	\$0.43	Q
Predominant exterior wall material												
Brick, stone, or stucco	\$9,938	\$13,963	\$22,394	\$12,339	\$0.11	\$0.10	\$0.08	\$0.12	\$1.24	\$1.21	\$1.23	\$1.55
Concrete (block or poured)	\$5,353	\$5,649	\$8,327	\$6,437	\$0.12	\$0.10	\$0.08	\$0.11	\$1.50	\$1.21	\$1.34	\$1.37
Concrete panels	\$1,565	\$1,911	\$3,488	\$3,036	\$0.12	\$0.10	\$0.09	\$0.13	\$1.77	\$0.91	\$1.16	\$1.31
Siding or shingles	\$2,109	\$2,998	\$1,345	\$1,509	\$0.14	\$0.09	\$0.10	\$0.12	\$1.64	\$1.40	\$1.21	\$1.18
Metal panels	\$1,271	\$3,112	\$3,639	\$1,646	\$0.14	\$0.11	\$0.09	\$0.13	\$1.12	\$0.76	\$0.79	\$1.00
Window glass	\$705	\$637	\$944	\$1,366	\$0.12	\$0.10	\$0.08	\$0.13	\$1.78	\$1.42	\$1.38	\$2.08
Other	\$780	\$757	\$648	\$1,131	\$0.12	\$0.10	\$0.09	\$0.12	\$1.44	\$1.55	\$1.28	\$1.75
Predominant roof material												
Metal surfacing	\$1,484	\$4,932	\$9,153	\$3,347	\$0.12	\$0.10	\$0.09	\$0.12	\$0.83	\$0.92	\$0.98	\$1.00
Synthetic or rubber	\$10,890	\$11,349	\$13,209	\$8,634	\$0.11	\$0.10	\$0.08	\$0.11	\$1.56	\$1.31	\$1.35	\$1.43
Built-up	\$3,617	\$6,180	\$9,132	\$6,929	\$0.11	\$0.10	\$0.08	\$0.12	\$1.17	\$1.21	\$1.32	\$1.67
Slate or tile shingles	\$783	\$1,092	\$1,314	\$1,856	\$0.14	\$0.10	\$0.09	\$0.14	\$1.10	\$1.22	\$1.00	\$1.73
Wooden materials (including shingles)	Q	Q	\$367	\$912	Q	Q	\$0.10	\$0.13	Q	Q	\$1.62	\$1.25
Asphalt, fiberglass, or other shingles	\$3,514	\$4,226	\$4,923	\$3,508	\$0.12	\$0.10	\$0.09	\$0.13	\$1.52	\$0.95	\$1.08	\$1.38
Concrete	\$244	Q	\$1,390	\$1,157	\$0.10	Q	\$0.09	\$0.10	\$0.98	Q	\$1.41	\$2.26
Other	Q	\$660	\$1,296	\$1,120	\$0.12	\$0.10	\$0.08	\$0.14	Q	\$1.14	\$1.06	\$1.36
Roof tilt												
Flat	\$15,519	\$17,190	\$24,475	\$18,329	\$0.11	\$0.09	\$0.08	\$0.12	\$1.47	\$1.29	\$1.34	\$1.58
Shallow pitch	\$3,632	\$7,488	\$10,646	\$6,632	\$0.13	\$0.10	\$0.09	\$0.12	\$1.38	\$0.93	\$1.01	\$1.22
Steeper pitch	\$2,570	\$4,351	\$5,662	\$2,504	\$0.13	\$0.10	\$0.09	\$0.12	\$0.99	\$1.06	\$1.02	\$1.16
Cool roof characteristics (more than one may apply)												
White or reflective coating or paint	\$5,498	\$9,671	\$15,689	\$13,049	\$0.11	\$0.09	\$0.08	\$0.12	\$1.46	\$1.31	\$1.26	\$1.48
White or reflective tiles or shingles	\$831	\$718	\$1,757	\$826	\$0.11	\$0.10	\$0.08	\$0.14	\$1.84	\$1.39	\$1.47	\$1.55
Aluminum coating	\$1,154	\$914	\$3,169	\$1,258	\$0.13	\$0.11	\$0.09	\$0.11	\$1.04	\$1.01	\$1.05	\$1.41
Ballasted roof system	\$1,888	\$2,976	\$2,282	\$1,213	\$0.10	\$0.10	\$0.09	\$0.09	\$1.48	\$1.30	\$1.41	\$1.12
Other cool roof property	\$504	Q	\$865	\$551	\$0.11	Q	\$0.08	\$0.11	\$1.31	Q	\$1.24	\$2.29

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	North- east	Mid- west	South	West	North- east	Mid- west	South	West	North- east	Mid- west	South	West
All buildings	\$21,721	\$29,028	\$40,783	\$27,464	\$0.11	\$0.10	\$0.09	\$0.12	\$1.37	\$1.14	\$1.19	\$1.43
Renovations since 2000 (more than one may apply)												
Any type of renovation	\$11,965	\$15,014	\$19,486	\$11,893	\$0.11	\$0.10	\$0.09	\$0.11	\$1.42	\$1.19	\$1.23	\$1.47
Addition or annex	\$2,453	\$4,991	\$4,738	\$2,170	\$0.11	\$0.10	\$0.09	\$0.10	\$1.30	\$1.24	\$1.39	\$1.41
Reduction in floorspace	\$633	\$765	\$856	\$316	\$0.10	\$0.10	\$0.09	\$0.12	\$1.50	\$1.42	\$1.46	\$1.32
Roof replacement	\$5,864	\$7,154	\$8,684	\$4,901	\$0.11	\$0.10	\$0.09	\$0.11	\$1.34	\$1.21	\$1.20	\$1.51
Interior wall reconfiguration	\$6,448	\$7,570	\$8,827	\$5,100	\$0.11	\$0.10	\$0.08	\$0.11	\$1.53	\$1.20	\$1.25	\$1.39
Window replacement	\$3,303	\$4,411	\$3,482	\$2,346	\$0.11	\$0.10	\$0.09	\$0.10	\$1.24	\$1.35	\$1.12	\$1.22
HVAC equipment upgrade	\$8,914	\$9,107	\$11,695	\$7,112	\$0.11	\$0.10	\$0.09	\$0.11	\$1.52	\$1.26	\$1.22	\$1.50
Lighting upgrade	\$8,557	\$10,437	\$11,798	\$8,545	\$0.11	\$0.10	\$0.09	\$0.11	\$1.44	\$1.24	\$1.27	\$1.59
Electrical upgrade	\$6,031	\$5,644	\$6,401	\$3,776	\$0.11	\$0.10	\$0.08	\$0.11	\$1.56	\$1.26	\$1.31	\$1.52
Plumbing system upgrade	\$5,670	\$5,486	\$6,488	\$3,667	\$0.11	\$0.10	\$0.09	\$0.11	\$1.51	\$1.32	\$1.33	\$1.38
Insulation upgrade	\$3,324	\$2,633	\$2,849	\$1,480	\$0.11	\$0.10	\$0.08	\$0.10	\$1.47	\$1.28	\$1.18	\$1.17
Fire, safety, or security upgrade	\$6,691	\$7,473	\$8,124	\$5,128	\$0.11	\$0.10	\$0.08	\$0.12	\$1.52	\$1.32	\$1.24	\$1.53
Structural upgrade	\$1,713	\$1,578	\$1,516	\$1,391	\$0.11	\$0.09	\$0.08	\$0.11	\$1.64	\$1.37	\$1.36	\$1.58
Other	Q	Q	\$996	\$388	Q	Q	\$0.08	\$0.13	Q	Q	\$1.64	\$1.88
No renovations	\$8,766	\$12,014	\$18,033	\$13,281	\$0.12	\$0.10	\$0.09	\$0.13	\$1.34	\$1.09	\$1.13	\$1.46
Buildings constructed 2013 or later	\$990	\$2,001	\$3,264	\$2,289	\$0.11	\$0.09	\$0.08	\$0.10	\$1.14	\$1.07	\$1.30	\$1.15
Energy sources (more than one may apply)												
Electricity	\$21,721	\$29,028	\$40,783	\$27,464	\$0.11	\$0.10	\$0.09	\$0.12	\$1.37	\$1.14	\$1.19	\$1.43
Natural gas	\$15,584	\$22,915	\$26,026	\$20,594	\$0.11	\$0.10	\$0.08	\$0.12	\$1.38	\$1.12	\$1.19	\$1.46
Fuel oil	\$9,865	\$7,073	\$10,102	\$6,975	\$0.12	\$0.09	\$0.08	\$0.10	\$1.66	\$1.54	\$1.49	\$1.80
District heat	\$2,857	\$2,056	\$2,914	\$2,510	\$0.10	\$0.08	\$0.08	\$0.11	\$1.57	\$1.36	\$1.37	\$1.95
District chilled water	\$880	\$1,177	\$2,369	\$2,019	\$0.10	\$0.08	\$0.08	\$0.11	\$1.69	\$1.58	\$1.15	\$2.10
Propane	\$3,006	\$2,884	\$3,747	\$2,624	\$0.12	\$0.09	\$0.09	\$0.12	\$1.22	\$1.21	\$1.12	\$1.35
Solar	\$1,585	\$705	\$690	\$2,622	\$0.12	\$0.10	\$0.08	\$0.13	\$1.31	\$1.09	\$1.30	\$1.86
Wood, coal, and other	\$426	\$544	\$860	\$638	\$0.11	\$0.10	\$0.09	\$0.11	\$1.03	\$0.88	\$1.27	\$1.58
Space-heating energy sources												
Electricity	\$9,870	\$14,125	\$25,806	\$14,094	\$0.11	\$0.09	\$0.09	\$0.11	\$1.55	\$1.47	\$1.30	\$1.46
Electricity main	\$4,269	\$8,132	\$18,994	\$8,470	\$0.11	\$0.09	\$0.09	\$0.11	\$1.61	\$1.74	\$1.33	\$1.40
Electricity secondary	\$5,601	\$5,993	\$6,812	\$5,624	\$0.11	\$0.09	\$0.08	\$0.11	\$1.50	\$1.21	\$1.20	\$1.55
Other excluding electricity	\$10,891	\$14,166	\$12,216	\$10,862	\$0.12	\$0.10	\$0.08	\$0.12	\$1.20	\$0.98	\$1.05	\$1.38
Buildings without heating	\$960	\$737	\$2,761	\$2,508	\$0.12	\$0.11	\$0.09	\$0.16	\$2.78	\$0.53	\$0.98	\$1.55
Primary space-heating energy source												
Electricity	\$4,269	\$8,132	\$18,994	\$8,470	\$0.11	\$0.09	\$0.09	\$0.11	\$1.61	\$1.74	\$1.33	\$1.40
Natural gas	\$11,336	\$17,686	\$15,256	\$13,710	\$0.11	\$0.10	\$0.08	\$0.12	\$1.27	\$1.04	\$1.08	\$1.38
Fuel oil	\$1,536	Q	\$274	Q	\$0.13	Q	\$0.10	Q	\$0.94	Q	\$0.67	Q
District heat	\$2,678	\$1,757	\$2,636	\$2,308	\$0.11	\$0.09	\$0.08	\$0.11	\$1.58	\$1.29	\$1.41	\$1.99
Propane	Q	\$560	\$807	Q	\$0.15	\$0.12	\$0.10	Q	\$1.73	\$0.70	\$1.07	Q
Other sources ^b	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Cooling energy sources												
Electricity	\$19,948	\$25,883	\$38,920	\$24,467	\$0.11	\$0.10	\$0.09	\$0.12	\$1.42	\$1.17	\$1.22	\$1.49
Other excluding electricity	\$830	\$702	\$1,368	\$1,274	\$0.11	\$0.07	\$0.07	\$0.11	\$1.65	\$1.68	\$1.01	\$1.79
Buildings without cooling	\$944	\$2,444	\$495	\$1,723	\$0.14	\$0.10	\$0.09	\$0.14	\$0.75	\$0.84	\$0.45	\$0.83
Water-heating energy sources												
Electricity	\$11,651	\$13,670	\$24,398	\$12,346	\$0.12	\$0.10	\$0.09	\$0.11	\$1.52	\$1.26	\$1.23	\$1.41
Other excluding electricity	\$9,459	\$14,420	\$14,668	\$13,107	\$0.11	\$0.10	\$0.08	\$0.12	\$1.29	\$1.13	\$1.23	\$1.53
Buildings without water heating	\$611	\$939	\$1,717	\$2,010	\$0.12	\$0.11	\$0.09	\$0.14	\$0.75	\$0.51	\$0.67	\$1.06

Table C16. Electricity expenditures by Census region, 2018

	Total electricity expenditures (million dollars)				Electricity expenditures (dollars)							
					Per kWh				Per square foot			
	North- east	Mid- west	South	West	North- east	Mid- west	South	West	North- east	Mid- west	South	West
All buildings	\$21,721	\$29,028	\$40,783	\$27,464	\$0.11	\$0.10	\$0.09	\$0.12	\$1.37	\$1.14	\$1.19	\$1.43
Cooling equipment (more than one may apply)												
Packaged air-conditioning units	\$14,271	\$17,512	\$26,562	\$18,394	\$0.12	\$0.10	\$0.09	\$0.12	\$1.52	\$1.25	\$1.25	\$1.59
Residential-type central air conditioners	\$3,817	\$6,770	\$7,544	\$3,493	\$0.12	\$0.10	\$0.09	\$0.12	\$1.37	\$1.01	\$1.21	\$1.36
Individual air conditioners	\$4,912	\$4,014	\$4,922	\$3,503	\$0.11	\$0.10	\$0.08	\$0.11	\$1.34	\$1.19	\$1.11	\$1.63
Central chillers	\$5,460	\$6,127	\$9,429	\$6,547	\$0.11	\$0.10	\$0.08	\$0.12	\$1.47	\$1.34	\$1.45	\$2.11
Heat pumps	\$3,702	\$2,605	\$5,026	\$3,996	\$0.11	\$0.09	\$0.09	\$0.11	\$1.55	\$1.28	\$1.21	\$1.60
District chilled water	\$880	\$1,177	\$2,369	\$2,019	\$0.10	\$0.08	\$0.08	\$0.11	\$1.69	\$1.58	\$1.15	\$2.10
Swamp coolers	Q	Q	\$515	\$1,842	Q	Q	\$0.08	\$0.11	Q	Q	\$1.17	\$1.40
Other	Q	N	Q	Q	Q	N	Q	Q	Q	N	Q	Q
HVAC features (more than one may apply)												
Economizer cycle	\$10,748	\$13,366	\$13,298	\$12,577	\$0.11	\$0.09	\$0.08	\$0.12	\$1.55	\$1.34	\$1.41	\$1.63
Variable air volume (VAV) system	\$8,702	\$9,940	\$13,878	\$9,765	\$0.11	\$0.10	\$0.08	\$0.11	\$1.68	\$1.25	\$1.36	\$1.65
Dedicated outside air system (DOAS)	\$2,821	\$3,472	\$4,766	\$3,162	\$0.11	\$0.09	\$0.08	\$0.12	\$1.62	\$1.58	\$1.39	\$1.91
Demand controlled ventilation (DCV)	\$4,230	\$2,423	\$4,111	\$3,342	\$0.11	\$0.10	\$0.08	\$0.11	\$1.53	\$0.99	\$1.21	\$1.79
Regular HVAC maintenance	\$19,607	\$24,172	\$36,189	\$24,106	\$0.11	\$0.10	\$0.08	\$0.12	\$1.46	\$1.22	\$1.25	\$1.51
Building automation system (BAS) controls heating or cooling	\$12,766	\$14,307	\$19,720	\$13,850	\$0.11	\$0.09	\$0.08	\$0.11	\$1.67	\$1.42	\$1.37	\$1.65
Internet-connected or smart thermostat	\$812	\$1,295	\$2,925	\$1,830	\$0.12	\$0.09	\$0.08	\$0.12	\$1.25	\$1.05	\$1.01	\$1.54
Programmable thermostat	\$4,130	\$5,725	\$6,809	\$6,160	\$0.12	\$0.11	\$0.09	\$0.12	\$1.11	\$0.98	\$1.06	\$1.27
Main equipment replaced since 2000 (more than one may apply)												
Heating	\$8,845	\$9,945	\$12,354	\$8,062	\$0.12	\$0.10	\$0.09	\$0.12	\$1.47	\$1.05	\$1.10	\$1.41
Cooling	\$6,366	\$6,572	\$8,837	\$5,451	\$0.11	\$0.10	\$0.09	\$0.12	\$1.20	\$1.06	\$1.16	\$1.40
Water-heating equipment												
Centralized system	\$12,791	\$20,261	\$25,649	\$16,353	\$0.12	\$0.10	\$0.09	\$0.12	\$1.29	\$1.19	\$1.21	\$1.45
Distributed system	\$4,718	\$3,795	\$6,103	\$4,207	\$0.11	\$0.09	\$0.08	\$0.12	\$1.64	\$1.18	\$1.19	\$1.36
Combination of centralized and distributed systems	\$3,602	\$4,034	\$7,314	\$4,894	\$0.12	\$0.10	\$0.08	\$0.12	\$1.61	\$1.17	\$1.32	\$1.69
Generation technologies (more than one may apply)												
Reciprocating engine generators	\$9,911	\$9,364	\$12,703	\$7,414	\$0.12	\$0.09	\$0.08	\$0.10	\$1.72	\$1.48	\$1.43	\$1.78
Solar panels	\$1,564	\$693	\$675	\$2,519	\$0.12	\$0.10	\$0.08	\$0.13	\$1.29	\$1.09	\$1.30	\$1.84
Other generation technology	\$1,030	\$936	\$742	\$1,000	\$0.10	\$0.09	\$0.09	\$0.11	\$2.19	\$1.73	\$1.35	\$2.01
Lighting equipment types (more than one may apply)												
Incandescent	\$5,700	\$7,458	\$9,929	\$7,364	\$0.11	\$0.10	\$0.08	\$0.11	\$1.38	\$1.26	\$1.37	\$1.97
Standard fluorescent	\$17,235	\$21,595	\$31,994	\$21,198	\$0.11	\$0.10	\$0.09	\$0.12	\$1.39	\$1.12	\$1.20	\$1.44
Compact fluorescent	\$9,051	\$11,881	\$15,558	\$12,091	\$0.11	\$0.10	\$0.08	\$0.12	\$1.43	\$1.32	\$1.35	\$1.76
High-intensity discharge (HID)	\$2,638	\$4,067	\$5,369	\$3,447	\$0.11	\$0.09	\$0.08	\$0.11	\$1.26	\$1.33	\$1.27	\$1.76
Halogen	\$4,113	\$4,264	\$7,616	\$6,360	\$0.11	\$0.10	\$0.08	\$0.11	\$1.59	\$1.29	\$1.28	\$1.99
LED	\$16,676	\$21,066	\$26,994	\$20,060	\$0.11	\$0.10	\$0.08	\$0.12	\$1.43	\$1.27	\$1.31	\$1.55
Other	N	Q	Q	Q	N	Q	Q	Q	N	Q	Q	Q

Table C16. Electricity expenditures by Census region, 2018

	Total electricity expenditures (million dollars)				Electricity expenditures (dollars)							
					Per kWh				Per square foot			
	North- east	Mid- west	South	West	North- east	Mid- west	South	West	North- east	Mid- west	South	West
All buildings	\$21,721	\$29,028	\$40,783	\$27,464	\$0.11	\$0.10	\$0.09	\$0.12	\$1.37	\$1.14	\$1.19	\$1.43
Refrigeration equipment (more than one may apply)												
Any refrigeration	\$18,247	\$25,341	\$36,339	\$23,090	\$0.11	\$0.10	\$0.08	\$0.12	\$1.41	\$1.21	\$1.27	\$1.55
Walk-in units	\$9,849	\$13,478	\$17,401	\$10,913	\$0.11	\$0.09	\$0.08	\$0.11	\$1.79	\$1.68	\$1.68	\$1.99
Cases or cabinets	\$9,123	\$12,011	\$16,275	\$10,327	\$0.11	\$0.09	\$0.08	\$0.11	\$1.71	\$1.57	\$1.59	\$1.94
Large cold storage areas	\$1,484	\$2,080	\$2,458	\$1,892	\$0.11	\$0.09	\$0.08	\$0.10	\$2.75	\$2.95	\$1.83	\$1.88
Commercial ice makers	\$8,306	\$13,336	\$20,129	\$11,743	\$0.11	\$0.10	\$0.08	\$0.11	\$1.61	\$1.52	\$1.45	\$1.72
Residential-type or compact units	\$14,932	\$19,234	\$28,692	\$18,524	\$0.11	\$0.10	\$0.09	\$0.12	\$1.39	\$1.08	\$1.21	\$1.48
Vending machines	\$9,897	\$14,031	\$21,675	\$12,014	\$0.11	\$0.09	\$0.08	\$0.11	\$1.38	\$1.24	\$1.35	\$1.60
No refrigeration	\$3,474	\$3,688	\$4,444	\$4,373	\$0.12	\$0.10	\$0.09	\$0.13	\$1.22	\$0.82	\$0.79	\$1.02
Office equipment (more than one may apply)												
Desktop computers	\$19,511	\$25,481	\$37,140	\$24,733	\$0.11	\$0.10	\$0.09	\$0.12	\$1.40	\$1.19	\$1.23	\$1.50
With multiple monitors	\$13,505	\$15,113	\$23,124	\$16,796	\$0.11	\$0.10	\$0.08	\$0.11	\$1.51	\$1.17	\$1.26	\$1.57
Laptop computers	\$17,080	\$21,469	\$30,555	\$20,228	\$0.11	\$0.10	\$0.08	\$0.12	\$1.42	\$1.14	\$1.22	\$1.50
Dedicated servers	\$14,771	\$16,616	\$22,893	\$17,221	\$0.11	\$0.09	\$0.08	\$0.12	\$1.56	\$1.21	\$1.29	\$1.61
Tablets charged in building	\$13,026	\$15,801	\$23,043	\$15,418	\$0.11	\$0.10	\$0.08	\$0.11	\$1.54	\$1.23	\$1.30	\$1.57
Large floor-standing office devices ^c	\$14,496	\$15,736	\$23,990	\$16,267	\$0.11	\$0.10	\$0.08	\$0.12	\$1.47	\$1.12	\$1.23	\$1.53
Smaller desktop office devices ^c	\$18,346	\$22,828	\$33,327	\$22,343	\$0.11	\$0.10	\$0.08	\$0.12	\$1.40	\$1.19	\$1.22	\$1.51
Interactive whiteboards	\$4,560	\$5,063	\$6,945	\$4,140	\$0.11	\$0.09	\$0.09	\$0.11	\$1.29	\$1.08	\$1.18	\$1.46
Televisions or video displays	\$16,610	\$20,311	\$30,047	\$19,271	\$0.11	\$0.10	\$0.08	\$0.11	\$1.47	\$1.26	\$1.27	\$1.54
Point-of-sale devices or cash registers	\$10,282	\$13,533	\$18,268	\$12,047	\$0.12	\$0.10	\$0.08	\$0.11	\$1.68	\$1.49	\$1.58	\$1.77
Food preparation or serving areas in non-food service buildings (more than one may apply)												
Snack bar, concession stand, or coffee shop	\$2,605	\$3,669	\$5,002	\$3,976	\$0.11	\$0.09	\$0.08	\$0.11	\$1.61	\$1.25	\$1.48	\$1.63
Fast food or small restaurant	\$3,005	\$4,437	\$4,750	\$4,085	\$0.11	\$0.09	\$0.08	\$0.10	\$1.81	\$1.72	\$1.50	\$1.73
Cafeteria or large restaurant	\$4,415	\$4,879	\$6,138	\$3,444	\$0.11	\$0.10	\$0.08	\$0.11	\$1.40	\$1.15	\$1.27	\$1.51
Commercial kitchen or food preparation area	\$5,486	\$6,808	\$9,181	\$5,273	\$0.11	\$0.09	\$0.08	\$0.10	\$1.67	\$1.38	\$1.47	\$1.63
Small kitchen area	\$4,650	\$6,974	\$7,624	\$5,129	\$0.11	\$0.10	\$0.09	\$0.11	\$1.23	\$1.12	\$1.14	\$1.34
Separate computer areas (more than one may apply)												
Server closet	\$12,579	\$15,445	\$21,256	\$15,001	\$0.11	\$0.10	\$0.08	\$0.11	\$1.43	\$1.23	\$1.21	\$1.52
Data center	\$4,338	\$3,874	\$4,825	\$4,740	\$0.11	\$0.09	\$0.08	\$0.12	\$1.69	\$1.28	\$1.42	\$2.00
Computer-based training room	\$3,771	\$5,513	\$7,379	\$5,142	\$0.11	\$0.09	\$0.08	\$0.11	\$1.28	\$1.22	\$1.28	\$1.53
Student or public computer center	\$2,471	\$3,291	\$5,121	\$3,378	\$0.10	\$0.10	\$0.08	\$0.10	\$1.09	\$1.03	\$1.10	\$1.40

Table C16. Electricity expenditures by Census region, 2018

	Total electricity expenditures (million dollars)				Electricity expenditures (dollars)							
					Per kWh				Per square foot			
	North- east	Mid- west	South	West	North- east	Mid- west	South	West	North- east	Mid- west	South	West
All buildings	\$21,721	\$29,028	\$40,783	\$27,464	\$0.11	\$0.10	\$0.09	\$0.12	\$1.37	\$1.14	\$1.19	\$1.43
Window and interior lighting features (more than one may apply)												
Multipaned windows	\$18,381	\$24,226	\$31,796	\$19,704	\$0.11	\$0.10	\$0.09	\$0.11	\$1.44	\$1.17	\$1.27	\$1.42
Tinted window glass	\$9,710	\$13,998	\$21,224	\$15,784	\$0.11	\$0.10	\$0.08	\$0.12	\$1.55	\$1.29	\$1.25	\$1.56
Reflective window glass	\$4,934	\$6,548	\$7,612	\$7,701	\$0.11	\$0.09	\$0.08	\$0.11	\$1.89	\$1.37	\$1.40	\$1.51
External overhangs or awnings	\$5,934	\$8,789	\$14,028	\$11,269	\$0.12	\$0.10	\$0.08	\$0.11	\$1.72	\$1.26	\$1.25	\$1.60
Skylights or atriums	\$4,331	\$6,317	\$7,426	\$6,942	\$0.11	\$0.09	\$0.08	\$0.11	\$1.36	\$1.21	\$1.16	\$1.39
Light scheduling	\$10,133	\$10,880	\$15,678	\$13,462	\$0.11	\$0.09	\$0.08	\$0.12	\$1.61	\$1.34	\$1.36	\$1.76
Occupancy sensors	\$13,845	\$13,713	\$18,372	\$14,816	\$0.11	\$0.10	\$0.08	\$0.12	\$1.54	\$1.17	\$1.31	\$1.56
Multilevel lighting or dimming	\$3,918	\$5,630	\$6,265	\$5,292	\$0.11	\$0.09	\$0.08	\$0.11	\$1.79	\$1.27	\$1.39	\$1.59
Daylight harvesting	\$2,028	\$2,143	\$3,436	\$3,328	\$0.10	\$0.08	\$0.08	\$0.11	\$1.50	\$1.54	\$1.38	\$1.65
Plug-load control	\$370	\$759	\$961	\$1,194	\$0.11	\$0.07	\$0.09	\$0.10	\$2.04	\$1.33	\$1.26	\$2.68
Demand responsive lighting	\$461	\$699	\$646	\$838	\$0.13	\$0.10	\$0.09	\$0.12	\$1.30	\$1.02	\$1.20	\$1.79
Building automation system (BAS) for lighting	\$4,250	\$5,589	\$8,688	\$6,930	\$0.11	\$0.09	\$0.08	\$0.11	\$1.57	\$1.52	\$1.44	\$1.65
Electric vehicle (EV) charging												
Charging stations associated with the building	\$2,075	\$2,462	\$3,991	\$4,446	\$0.11	\$0.09	\$0.08	\$0.11	\$1.25	\$1.18	\$1.19	\$1.45
Annual consumption (kilowatthours)												
10,000 or less	\$98	\$242	\$140	\$128	\$0.19	\$0.15	\$0.14	\$0.17	\$0.31	\$0.19	\$0.22	\$0.30
10,001 to 50,000	\$1,299	\$2,026	\$2,349	\$1,859	\$0.15	\$0.12	\$0.12	\$0.15	\$0.66	\$0.53	\$0.63	\$0.74
50,001 to 100,000	\$1,298	\$1,991	\$2,751	\$2,096	\$0.13	\$0.11	\$0.10	\$0.13	\$1.06	\$0.87	\$0.85	\$1.00
100,001 to 500,000	\$3,848	\$7,260	\$9,786	\$7,499	\$0.12	\$0.11	\$0.09	\$0.13	\$1.08	\$1.15	\$1.10	\$1.40
500,001 to 1,000,000	\$2,186	\$4,815	\$5,971	\$4,168	\$0.12	\$0.10	\$0.08	\$0.11	\$1.17	\$1.28	\$1.16	\$1.54
1,000,001 to 5,000,000	\$7,687	\$8,056	\$12,329	\$6,886	\$0.11	\$0.09	\$0.08	\$0.11	\$1.69	\$1.51	\$1.43	\$1.66
Over 5,000,000	\$5,305	\$4,638	\$7,458	\$4,828	\$0.11	\$0.09	\$0.08	\$0.11	\$2.28	\$1.73	\$1.82	\$2.55

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 expenditures in buildings that have the end use but not the expenditures 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.

Relative standard errors (RSEs) for Table C16. Electricity expenditures by Census region, 2018

	RSEs for electricity expenditures											
	RSEs for total electricity expenditures				Per kWh				Per square foot			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	7.2	7.5	6.3	5.6	2.1	2.3	1.4	3.1	5.8	4.0	2.9	4.7
Building floorspace (square feet)												
1,001 to 5,000	16.2	11.8	11.5	10.1	5.8	2.8	3.2	8.7	7.9	12.5	5.6	7.9
5,001 to 10,000	18.2	11.0	11.9	12.1	4.0	2.4	3.4	6.8	13.7	14.0	8.6	10.7
10,001 to 25,000	21.7	23.7	12.2	10.9	4.0	6.7	2.0	4.6	18.7	16.3	6.6	9.9
25,001 to 50,000	23.4	13.2	10.6	11.1	6.3	2.6	3.1	5.3	18.1	6.5	5.5	9.0
50,001 to 100,000	11.5	14.4	9.3	11.6	3.5	2.4	2.3	4.6	7.4	7.6	4.5	6.4
100,001 to 200,000	12.4	10.2	8.6	14.2	3.2	2.5	1.8	5.5	7.5	4.4	5.1	9.9
200,001 to 500,000	18.7	13.6	10.7	15.6	2.6	7.0	2.1	4.6	11.2	9.3	6.6	10.9
Over 500,000	11.8	13.9	14.4	25.8	3.5	2.2	4.1	11.4	9.1	8.1	7.8	10.8
Principal building activity												
Education	9.3	11.5	11.5	11.4	2.6	2.4	2.8	5.7	4.8	3.7	4.3	6.8
Food sales	67.6	37.9	24.1	31.5	17.6	14.1	7.3	11.7	19.1	15.4	10.3	9.8
Food service	24.1	16.8	13.2	19.9	7.7	3.3	4.3	6.6	14.0	9.3	6.7	9.1
Health care	15.3	13.7	9.3	13.8	6.9	10.9	2.4	4.5	8.8	4.6	3.4	10.2
Inpatient	20.2	16.2	11.3	20.2	8.4	13.9	2.9	6.1	10.4	5.0	4.3	15.3
Outpatient	20.5	20.8	16.0	16.8	7.2	3.9	3.6	4.8	12.1	8.0	4.9	11.7
Lodging	17.8	18.7	17.0	17.8	5.7	3.9	3.3	9.5	8.2	12.0	6.0	8.0
Mercantile	21.5	16.4	10.6	10.2	4.2	1.7	2.0	2.3	10.0	9.4	4.7	5.1
Retail (other than mall)	19.4	21.9	12.2	18.9	6.4	2.8	2.8	5.4	14.2	14.9	7.8	10.3
Enclosed and strip malls	29.1	17.9	15.7	14.4	4.9	1.2	2.4	4.1	8.9	5.8	4.9	6.9
Office	11.2	13.2	11.2	9.9	2.5	1.9	2.2	4.4	4.7	6.6	3.9	6.1
Public assembly	14.4	13.7	15.2	11.5	4.7	3.3	2.6	6.1	9.4	9.5	7.0	8.1
Public order and safety	25.8	52.5	31.9	31.8	8.1	14.4	8.3	14.4	6.7	22.6	10.7	16.8
Religious worship	25.5	18.9	12.5	21.2	7.9	3.7	3.1	8.9	22.6	12.3	5.5	8.0
Service	17.7	21.1	15.5	17.0	5.6	2.6	4.4	6.2	15.2	14.3	12.9	9.1
Warehouse and storage	18.0	18.3	15.0	19.3	6.0	2.8	3.3	6.8	7.5	10.6	8.2	14.4
Other	31.8	28.1	26.1	33.6	6.0	7.0	4.2	20.1	25.3	26.3	11.6	19.5
Vacant	34.9	37.5	24.8	47.6	11.3	4.1	5.3	69.0	57.6	18.6	21.9	43.0
Year constructed												
Before 1920	21.6	14.2	18.8	52.5	4.4	2.6	5.1	20.4	14.6	9.9	10.9	46.8
1920 to 1945	16.6	21.1	19.9	21.7	3.5	3.3	3.8	4.0	8.0	10.8	11.0	20.5
1946 to 1959	16.8	18.8	17.8	12.2	3.8	2.9	3.8	12.3	9.4	9.3	11.6	13.7
1960 to 1969	10.1	16.6	10.4	13.9	4.2	2.8	2.5	4.2	10.7	13.2	6.4	10.3
1970 to 1979	17.0	15.5	11.0	17.9	4.6	2.4	2.9	5.2	6.5	9.1	8.4	16.6
1980 to 1989	16.4	14.1	7.9	13.8	2.4	1.6	2.5	7.9	16.0	5.1	6.8	8.2
1990 to 1999	13.5	13.4	9.2	12.5	2.5	3.2	2.3	5.4	9.2	12.0	5.4	8.5
2000 to 2009	19.6	14.4	12.1	12.9	6.3	4.0	2.0	3.8	15.4	11.9	4.1	6.2
2010 to 2018	30.7	14.8	12.7	15.4	4.5	9.8	2.7	4.9	24.0	11.8	6.9	8.9
Climate zone^a												
Cold or very cold	27.6	19.6	0.0	40.6	5.3	5.1	0.0	7.2	27.1	14.0	0.0	15.0
Cool	14.6	12.0	0.0	16.5	3.8	2.9	0.0	7.1	5.8	3.8	0.0	5.6
Mixed mild	11.0	26.5	18.2	35.2	2.6	3.6	2.8	11.5	9.9	5.4	6.0	10.2
Warm	0.0	0.0	13.6	9.6	0.0	0.0	2.2	3.0	0.0	0.0	3.9	9.0
Hot or very hot	0.0	0.0	14.7	31.5	0.0	0.0	3.6	8.0	0.0	0.0	6.6	3.7

Relative standard errors (RSEs) for Table C16. Electricity expenditures by Census region, 2018

	RSEs for electricity expenditures											
	RSEs for total electricity expenditures				Per kWh				Per square foot			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	7.2	7.5	6.3	5.6	2.1	2.3	1.4	3.1	5.8	4.0	2.9	4.7
Number of floors												
1	13.2	10.3	9.4	7.7	3.0	3.1	2.1	3.9	15.8	6.1	4.0	4.8
2	11.5	11.8	7.1	11.0	2.8	2.5	2.1	4.0	6.6	5.8	5.4	8.9
3	20.1	13.7	17.6	13.8	6.4	2.1	2.3	4.7	12.7	6.5	6.7	14.0
4 to 9	11.2	12.5	12.6	15.2	3.0	7.7	2.5	5.1	6.0	6.5	3.8	12.0
10 or more	10.1	20.4	22.9	24.7	3.1	2.5	4.1	11.6	7.2	10.3	6.7	17.5
Elevators and escalators (more than one may apply)												
Any elevators	8.7	8.1	10.0	9.9	2.4	3.0	1.8	4.3	6.0	4.4	2.9	7.9
1 elevator	13.0	10.3	14.8	10.0	2.9	2.0	2.9	4.2	7.0	5.2	3.5	10.1
2 to 5 elevators	13.3	13.3	11.9	11.6	3.4	3.4	2.1	5.3	11.1	7.1	4.9	9.2
6 or more elevators	9.5	13.9	14.7	19.4	3.4	7.7	3.4	9.3	7.6	6.2	5.2	13.6
Any escalators	19.6	22.1	22.1	36.1	5.3	3.5	4.5	19.0	11.1	8.1	9.9	17.8
Number of workers (main shift)												
Fewer than 5	17.4	13.4	12.8	10.2	4.5	2.1	2.2	5.7	9.4	8.7	5.9	14.1
5 to 9	16.4	25.9	11.3	15.1	7.3	10.9	3.6	7.4	12.5	23.7	5.8	10.0
10 to 19	11.7	15.5	11.4	13.5	4.5	2.1	3.6	7.5	11.3	14.0	7.2	12.0
20 to 49	16.9	10.3	9.6	10.0	4.1	3.1	2.4	4.0	15.1	7.5	5.2	7.6
50 to 99	20.7	9.9	11.8	15.7	4.4	2.0	1.9	4.0	17.8	6.2	4.1	8.4
100 to 249	14.4	12.2	10.1	14.9	3.1	2.8	1.9	6.5	7.9	7.0	3.8	7.4
250 or more	9.7	10.6	10.6	15.5	2.7	6.1	2.6	7.9	4.7	5.9	4.7	10.7
Weekly operating hours												
Fewer than 40	17.0	21.0	14.3	12.9	4.1	2.8	2.7	4.9	12.1	15.6	7.7	10.1
40 to 48	14.2	22.7	8.7	9.5	4.2	8.2	2.3	5.1	8.8	18.9	6.6	5.9
49 to 60	10.1	11.9	7.9	8.4	2.9	2.4	2.0	4.0	6.2	4.6	4.7	5.5
61 to 84	12.4	11.2	10.6	13.6	3.9	2.3	2.3	5.9	12.8	8.9	4.8	7.9
85 to 167	19.7	11.4	10.0	15.0	4.9	2.4	2.9	4.7	13.6	7.8	7.5	11.9
Open continuously	10.8	9.8	9.5	9.9	2.8	3.9	1.9	5.2	10.1	4.7	5.1	7.5
Ownership and occupancy												
Nongovernment owned	8.4	7.7	5.7	6.1	2.2	2.4	1.4	3.2	6.7	4.5	3.3	5.0
Owner occupied	11.2	7.1	6.2	7.3	3.6	3.0	1.8	4.4	6.4	7.1	3.6	5.9
Leased to tenant or tenants	12.8	13.4	7.4	7.8	2.4	2.3	2.0	2.9	11.1	4.9	4.1	6.6
Unoccupied	34.5	47.6	46.4	43.9	3.9	8.4	6.0	11.0	48.2	36.2	30.3	30.3
Government owned	11.7	13.5	13.8	12.1	4.3	2.4	2.8	5.6	3.7	4.8	3.8	7.4
Federal	29.3	31.1	31.0	30.0	8.8	7.6	5.5	5.7	20.2	15.2	9.3	11.5
State	26.2	22.8	24.6	19.7	7.9	5.2	4.3	6.9	8.4	12.8	5.5	9.9
Local	10.3	13.2	11.4	11.9	3.1	2.5	3.3	8.1	3.9	5.5	4.5	10.6
Party responsible for operation of energy systems												
Building owner	7.9	8.3	6.9	6.5	2.5	2.5	1.5	3.5	5.9	4.8	3.2	5.5
Business owner or tenant	19.2	13.8	9.9	14.0	3.9	2.5	2.2	4.1	14.6	11.0	6.1	9.5
Property management	24.3	34.9	21.5	27.3	7.8	4.5	5.1	7.6	13.1	18.8	10.6	18.2
Other	42.6	21.9	17.9	17.9	15.1	3.3	5.1	7.1	25.0	13.6	10.2	11.7
Provider of direct input on energy- related equipment purchases												
Building owner	7.8	8.6	6.8	6.4	2.5	2.5	1.5	3.5	5.9	4.7	3.4	5.4
Business owner or tenant	26.6	17.3	11.2	16.0	5.2	2.4	2.7	3.9	17.5	9.9	7.8	8.6
Property management	32.2	41.0	31.4	21.8	11.0	7.2	6.3	10.4	12.5	21.3	19.1	25.1
Other	20.1	19.7	13.7	16.3	5.4	3.4	3.7	7.1	15.1	10.3	7.4	14.5

Relative standard errors (RSEs) for Table C16. Electricity expenditures by Census region, 2018

	RSEs for electricity expenditures											
	RSEs for total electricity expenditures				Per kWh				Per square foot			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	7.2	7.5	6.3	5.6	2.1	2.3	1.4	3.1	5.8	4.0	2.9	4.7
Number of establishments												
1	8.4	8.2	8.1	7.2	2.7	2.8	1.6	4.0	7.2	5.0	3.5	5.4
2 to 5	11.7	12.6	10.2	13.9	3.5	2.7	2.0	5.9	9.3	7.9	4.6	7.2
6 to 10	16.8	18.7	12.2	20.4	4.4	3.4	2.6	8.6	8.3	11.4	7.0	12.9
11 to 20	23.8	18.3	16.3	12.7	4.6	3.3	3.9	4.7	10.0	13.6	7.0	6.3
More than 20	21.4	33.7	13.1	14.9	3.0	3.7	2.9	5.4	8.3	8.0	8.6	11.4
Currently unoccupied	33.6	43.6	36.8	56.6	3.8	17.7	6.1	78.0	40.5	29.4	24.2	51.3
Predominant exterior wall material												
Brick, stone, or stucco	8.8	8.0	8.6	7.7	2.0	2.7	1.7	3.6	6.0	3.7	3.6	6.4
Concrete (block or poured)	12.1	14.3	6.8	8.3	3.5	2.7	2.2	4.5	14.9	13.1	4.9	8.4
Concrete panels	22.7	18.8	12.9	19.2	4.5	2.7	2.6	4.1	19.2	12.3	9.2	13.0
Siding or shingles	26.4	29.3	16.1	20.8	5.0	10.5	3.2	6.9	21.1	26.1	9.6	15.0
Metal panels	31.4	15.2	11.5	13.6	6.9	3.7	2.9	13.7	29.6	8.2	7.1	17.4
Window glass	28.2	20.8	19.2	25.9	4.6	4.1	4.5	12.1	11.1	10.3	7.6	16.8
Other	34.7	42.1	25.0	18.2	10.7	5.8	5.4	5.7	18.4	23.9	18.8	12.8
Predominant roof material												
Metal surfacing	10.2	17.3	11.8	10.3	4.3	7.7	2.6	11.0	6.3	15.8	5.0	12.2
Synthetic or rubber	10.8	9.3	8.5	8.1	2.8	3.2	2.0	3.7	8.0	5.5	3.8	5.5
Built-up	13.0	11.8	7.9	12.7	2.7	2.3	2.1	6.3	5.4	6.4	5.6	7.0
Slate or tile shingles	20.4	19.5	17.6	21.4	4.2	3.9	3.4	3.7	9.1	14.0	11.4	8.9
Wooden materials (including shingles)	54.8	38.9	21.2	27.7	7.3	10.4	6.5	3.6	12.7	32.9	19.2	14.4
Asphalt, fiberglass, or other shingles	18.9	17.8	9.5	14.6	4.5	2.8	2.4	3.3	15.0	9.0	5.7	12.1
Concrete	25.7	32.7	19.0	25.1	7.6	5.1	5.6	12.9	10.2	13.0	10.5	18.1
Other	63.6	18.7	15.3	20.2	13.2	6.6	4.1	6.5	64.1	17.1	11.0	20.4
Roof tilt												
Flat	8.3	8.5	5.7	7.2	2.3	2.2	1.5	3.3	6.4	4.5	3.5	4.4
Shallow pitch	20.6	11.8	9.6	9.7	4.6	3.0	2.0	6.2	16.7	5.2	4.3	12.2
Steeper pitch	12.5	19.1	10.9	16.6	3.1	8.7	2.3	5.5	11.0	18.8	4.7	7.3
Cool roof characteristics (more than one may apply)												
White or reflective coating or paint	13.3	11.7	7.1	8.8	3.3	3.9	1.7	4.2	7.9	8.7	3.3	4.0
White or reflective tiles or shingles	43.2	26.4	22.8	18.7	5.7	3.6	5.3	8.3	43.3	16.7	8.4	17.7
Aluminum coating	17.4	21.8	14.6	18.8	5.3	4.4	3.2	11.6	14.2	19.4	8.8	20.4
Ballasted roof system	14.0	19.7	14.7	31.1	3.0	2.8	4.3	11.5	8.2	5.5	8.6	9.4
Other cool roof property	30.2	29.8	34.7	33.8	7.9	6.6	4.8	17.5	10.8	22.1	13.6	20.9

Relative standard errors (RSEs) for Table C16. Electricity expenditures by Census region, 2018

	RSEs for electricity expenditures											
	RSEs for total electricity expenditures				Per kWh				Per square foot			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	7.2	7.5	6.3	5.6	2.1	2.3	1.4	3.1	5.8	4.0	2.9	4.7
Renovations since 2000 (more than one may apply)												
Any type of renovation	10.2	7.0	5.7	7.3	3.0	2.2	1.6	3.9	6.5	4.9	2.7	6.5
Addition or annex	14.8	9.8	9.7	12.1	4.5	3.0	2.3	5.6	7.3	6.1	7.4	8.7
Reduction in floorspace	33.5	30.6	22.3	29.0	2.6	4.0	3.7	14.2	19.7	11.0	13.5	15.7
Roof replacement	11.8	9.1	8.0	11.8	3.2	3.3	1.9	5.5	7.6	5.3	4.2	9.3
Interior wall reconfiguration	11.8	7.7	5.9	13.8	3.6	2.5	1.8	6.4	8.7	6.4	3.4	7.5
Window replacement	12.7	10.4	11.7	18.4	3.4	3.5	2.9	8.9	7.3	7.8	7.5	7.0
HVAC equipment upgrade	11.7	8.4	7.2	10.8	3.4	2.5	1.8	4.5	7.9	7.6	3.9	7.8
Lighting upgrade	11.0	7.5	6.3	9.0	3.2	2.7	1.5	4.2	6.2	5.5	2.5	7.7
Electrical upgrade	11.1	8.1	9.3	15.4	3.0	2.8	1.7	7.3	6.9	9.3	5.0	12.4
Plumbing system upgrade	12.5	11.3	9.2	12.6	3.9	2.9	1.7	6.8	8.6	6.5	5.5	5.9
Insulation upgrade	17.6	12.9	12.5	27.5	4.9	2.7	2.3	12.3	12.0	10.2	8.2	10.6
Fire, safety, or security upgrade	13.2	7.1	6.9	12.5	3.7	3.1	2.0	5.7	8.0	6.8	4.6	8.2
Structural upgrade	29.5	14.9	18.1	26.5	10.7	3.0	3.6	15.9	23.7	11.1	9.8	19.4
Other	35.8	47.2	17.9	32.5	7.2	7.5	3.3	9.4	16.3	74.5	7.4	18.5
No renovations	10.2	10.5	9.1	7.2	2.8	2.8	1.7	3.0	10.8	6.7	4.5	5.5
Buildings constructed 2013 or later	20.5	21.4	12.6	13.7	6.7	13.5	2.7	4.8	11.0	16.1	8.8	8.5
Energy sources (more than one may apply)												
Electricity	7.2	7.5	6.3	5.6	2.1	2.3	1.4	3.1	5.8	4.0	2.9	4.7
Natural gas	7.4	7.8	6.4	6.1	1.7	2.2	1.6	3.0	7.0	3.8	3.2	4.5
Fuel oil	11.7	15.5	7.8	14.1	3.3	4.4	2.0	5.3	10.8	11.1	4.1	11.0
District heat	8.9	20.5	29.4	21.0	2.8	12.6	3.0	8.9	5.6	10.1	7.0	13.5
District chilled water	18.8	29.0	27.7	24.5	5.9	20.6	2.0	10.6	7.1	9.5	5.9	15.5
Propane	17.3	28.5	15.4	23.4	6.0	13.2	3.4	11.7	16.4	25.5	7.0	11.6
Solar	24.5	18.7	22.8	14.9	5.2	5.6	3.3	7.0	7.3	11.0	14.9	10.4
Wood, coal, and other	36.6	28.3	26.2	40.6	13.2	3.1	4.6	21.0	21.2	22.3	25.2	33.0
Space-heating energy sources												
Electricity	10.8	10.6	7.0	5.9	2.8	3.1	1.7	4.1	6.6	6.0	3.2	5.0
Electricity main	14.1	16.7	9.1	8.1	4.0	3.8	2.1	5.2	6.5	9.2	3.6	5.7
Electricity secondary	12.4	10.5	10.6	12.0	3.3	4.8	2.1	5.7	9.4	5.5	5.3	7.6
Other excluding electricity	7.7	9.1	10.0	9.4	2.3	1.9	2.0	3.4	8.6	5.1	4.2	6.1
Buildings without heating	38.9	26.5	19.9	17.6	4.8	6.7	3.9	6.2	36.8	18.3	15.7	24.3
Primary space-heating energy source												
Electricity	14.1	16.7	9.1	8.1	4.0	3.8	2.1	5.2	6.5	9.2	3.6	5.7
Natural gas	7.8	9.6	6.6	8.2	2.0	2.4	1.9	3.9	8.3	4.3	4.1	5.5
Fuel oil	20.0	48.6	29.3	73.8	6.0	3.3	3.7	24.8	12.4	34.9	14.1	5.3
District heat	10.1	17.2	31.8	22.7	3.0	3.7	3.4	9.4	6.0	8.5	7.9	14.4
Propane	54.0	26.4	46.3	49.3	4.3	4.2	5.4	4.8	41.9	8.6	25.6	36.6
Other sources ^b	37.0	34.8	95.0	43.9	11.6	8.4	43.4	14.9	21.1	28.5	34.8	25.5
Cooling energy sources												
Electricity	7.7	7.1	6.3	5.4	2.1	1.8	1.5	3.2	6.3	3.8	2.9	4.1
Other excluding electricity	24.2	38.6	27.3	25.3	7.9	29.8	2.3	6.4	10.5	14.0	7.3	16.7
Buildings without cooling	23.1	37.4	20.4	25.5	3.5	16.1	6.0	7.4	10.1	32.3	14.7	25.5

Relative standard errors (RSEs) for Table C16. Electricity expenditures by Census region, 2018

	RSEs for electricity expenditures											
	RSEs for total electricity expenditures				Per kWh				Per square foot			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	7.2	7.5	6.3	5.6	2.1	2.3	1.4	3.1	5.8	4.0	2.9	4.7
Heating equipment (more than one may apply)												
Packaged heating units	9.6	8.8	7.4	6.2	2.6	2.8	2.0	3.0	8.7	4.0	3.6	3.9
Furnaces	16.3	10.8	10.9	11.9	4.4	2.3	2.2	4.7	11.6	6.5	5.1	7.1
Individual space heaters	14.5	12.6	9.6	11.8	4.6	4.5	1.9	5.9	10.0	8.5	4.8	9.6
Boilers	8.1	12.1	6.5	10.4	2.0	3.8	1.8	4.9	4.0	8.2	4.2	6.7
Heat pumps	11.2	12.0	8.7	12.9	3.3	2.9	1.4	8.5	6.4	8.2	5.2	7.4
District heat	9.4	16.4	29.7	21.3	2.8	3.6	3.0	8.9	5.7	8.0	7.2	13.9
Duct reheat	25.9	15.9	9.7	18.8	8.2	2.0	2.7	5.5	20.4	4.4	3.6	9.3
Other	76.2	96.8	36.4	33.4	21.4	22.5	2.6	10.5	39.1	75.7	9.1	14.5
Cooling equipment (more than one may apply)												
Packaged air-conditioning units	8.0	8.3	7.2	6.3	2.3	2.2	1.8	2.9	8.3	3.7	3.8	4.0
Residential-type central air conditioners	11.4	7.0	11.3	18.1	4.0	2.5	2.2	5.9	9.6	5.4	5.1	15.5
Individual air conditioners	11.8	13.8	11.0	16.2	3.8	3.8	2.3	7.3	7.5	7.0	5.5	10.7
Central chillers	8.5	10.3	10.2	10.0	3.4	1.8	2.2	3.7	7.1	5.4	3.1	9.3
Heat pumps	16.8	15.8	10.0	16.0	5.1	4.2	2.0	8.1	13.3	9.1	5.9	8.9
District chilled water	18.8	29.0	27.7	24.5	5.9	20.6	2.0	10.6	7.1	9.5	5.9	15.5
Swamp coolers	54.4	28.1	37.9	16.8	17.2	4.9	10.9	4.7	51.5	12.4	12.4	8.5
Other	70.2	0.0	61.9	65.3	0.0	0.0	18.1	5.8	0.0	0.0	44.2	65.3
HVAC features (more than one may apply)												
Economizer cycle	8.8	7.6	7.6	8.9	2.6	2.8	1.7	3.7	7.8	3.0	3.4	6.6
Variable air volume (VAV) system	10.6	6.8	10.7	10.4	2.8	3.4	1.9	4.8	12.2	4.9	4.0	7.0
Dedicated outside air system (DOAS)	18.0	25.3	16.7	19.5	6.3	8.6	2.9	10.5	12.7	24.9	5.9	15.4
Demand controlled ventilation (DCV)	12.5	11.5	8.8	16.8	3.3	2.5	2.1	7.1	9.4	8.5	5.2	15.9
Regular HVAC maintenance	7.4	7.4	6.6	6.2	2.2	2.3	1.5	2.9	6.6	3.2	3.1	4.2
Building automation system (BAS) controls heating or cooling	8.6	8.4	6.7	9.0	2.6	2.6	1.6	3.9	8.8	5.8	2.9	6.7
Internet-connected or smart thermostat	19.5	24.7	16.7	22.3	4.8	3.2	3.6	7.8	15.3	15.5	8.8	11.3
Programmable thermostat	13.5	14.2	11.8	6.5	3.3	3.5	2.8	5.0	9.0	8.0	5.8	6.0
Main equipment replaced since 2000 (more than one may apply)												
Heating	11.9	7.6	7.9	7.6	3.3	1.8	2.2	2.4	9.0	5.4	4.0	8.1
Cooling	12.1	12.4	6.2	12.0	3.4	1.7	1.9	6.8	4.9	6.8	4.4	8.5
Water-heating equipment												
Centralized system	9.6	8.4	7.7	7.3	2.6	2.9	1.6	4.3	6.5	5.8	3.3	5.3
Distributed system	17.9	16.8	11.3	11.1	3.7	3.3	2.8	3.6	18.1	9.7	5.8	7.2
Combination of centralized and distributed systems	15.8	10.2	10.8	10.9	4.8	2.2	1.9	3.6	11.4	5.2	4.6	9.2
Generation technologies (more than one may apply)												
Reciprocating engine generators	10.5	11.3	7.7	13.0	2.8	3.8	1.9	5.1	9.7	8.3	3.6	10.6
Solar panels	24.8	19.0	23.5	15.0	5.3	5.7	3.4	6.8	7.3	11.2	15.2	10.8
Other generation technology	39.4	44.5	23.9	30.1	6.3	5.8	3.8	13.7	33.0	29.7	16.5	22.9

Relative standard errors (RSEs) for Table C16. Electricity expenditures by Census region, 2018

	RSEs for electricity expenditures											
	RSEs for total electricity expenditures				Per kWh				Per square foot			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	7.2	7.5	6.3	5.6	2.1	2.3	1.4	3.1	5.8	4.0	2.9	4.7
Lighting equipment types (more than one may apply)												
Incandescent	10.6	9.8	7.4	10.0	2.3	2.4	1.9	5.2	5.9	7.0	4.3	7.8
Standard fluorescent	7.9	8.5	6.7	5.7	2.3	2.3	1.6	3.1	7.2	3.9	3.4	4.8
Compact fluorescent	9.0	9.9	8.1	8.6	2.8	2.0	1.8	3.9	4.7	4.3	3.4	6.0
High-intensity discharge (HID)	12.4	14.3	10.3	16.9	3.5	6.8	2.4	8.7	7.3	5.8	6.1	14.7
Halogen	12.5	11.6	6.7	11.4	3.4	1.6	1.4	5.0	8.2	8.2	5.5	7.8
LED	6.2	7.1	6.4	6.7	1.8	2.4	1.7	3.4	6.3	5.1	3.1	5.7
Other	0.0	30.5	51.6	51.3	0.0	1.0	12.9	0.0	0.0	6.3	5.3	0.0
Refrigeration equipment (more than one may apply)												
Any refrigeration	6.6	7.4	6.2	5.7	1.9	2.5	1.4	3.2	6.4	4.9	3.1	4.4
Walk-in units	8.9	8.4	6.0	8.2	2.5	3.5	1.7	3.9	8.2	6.3	3.2	5.5
Cases or cabinets	10.4	9.0	6.9	8.1	2.7	3.2	2.0	3.7	8.6	6.1	3.8	6.1
Large cold storage areas	39.9	41.0	14.9	26.7	10.8	11.8	3.1	11.1	37.9	30.2	7.1	19.9
Commercial ice makers	8.6	7.2	7.4	7.9	2.3	3.1	1.8	3.8	5.2	4.3	3.0	5.3
Residential-type or compact units	6.5	7.5	6.2	5.9	1.6	2.6	1.5	3.2	7.5	4.3	3.3	4.8
Vending machines	8.5	7.3	7.2	9.2	2.1	2.5	1.5	4.0	6.9	4.4	2.9	7.1
No refrigeration	13.6	15.3	10.3	16.1	3.7	2.6	3.1	5.9	11.4	8.9	5.8	14.9
Office equipment (more than one may apply)												
Desktop computers	7.0	7.4	6.2	5.4	2.0	2.4	1.6	2.9	6.2	4.4	3.1	4.2
With multiple monitors	8.0	7.1	6.7	8.3	1.8	2.4	1.7	3.7	7.8	4.0	3.2	5.3
Laptop computers	7.7	6.9	5.9	6.4	1.8	2.2	1.5	2.9	6.4	3.9	2.9	5.3
Dedicated servers	8.3	7.3	5.0	6.8	2.4	2.5	1.6	3.3	7.4	4.1	3.1	5.8
Tablets charged in building	8.1	7.8	6.7	6.8	1.8	2.5	1.5	3.2	6.9	4.7	2.7	5.3
Large floor-standing office devices ^c	8.1	5.9	6.3	8.0	2.1	2.7	1.7	3.6	6.8	3.7	3.2	5.9
Smaller desktop office devices ^c	7.0	8.4	6.1	5.8	1.9	2.6	1.6	2.9	6.6	5.5	2.8	4.4
Interactive whiteboards	12.6	10.4	9.3	15.1	3.2	5.7	2.2	8.1	12.2	6.5	3.8	9.8
Televisions or video displays	7.5	7.3	5.9	6.2	2.1	2.4	1.6	3.2	7.0	4.4	2.9	5.3
Point-of-sale devices or cash registers	9.7	8.7	6.6	8.3	2.4	3.0	1.8	3.9	9.2	4.7	3.2	5.3
Food preparation or serving areas in non-food service buildings (more than one may apply)												
Snack bar, concession stand, or coffee shop	14.2	12.0	9.0	14.6	4.6	2.4	2.4	7.0	11.1	5.4	5.7	9.6
Fast food or small restaurant	14.8	10.2	9.0	14.5	4.0	2.2	2.6	6.4	7.6	6.0	5.4	8.8
Cafeteria or large restaurant	9.3	9.7	7.3	15.7	3.0	2.6	2.3	8.3	5.6	5.2	3.2	9.5
Commercial kitchen or food preparation area	13.7	10.2	7.7	11.3	4.6	2.6	1.6	5.3	10.9	6.0	4.5	6.8
Small kitchen area	10.5	10.7	9.3	11.0	2.4	2.6	2.1	5.7	4.5	4.9	4.5	7.3
Separate computer areas (more than one may apply)												
Server closet	8.5	8.0	5.8	7.7	2.2	2.9	1.6	3.2	5.3	3.7	3.2	5.2
Data center	11.5	9.5	9.9	18.3	3.8	6.5	2.6	8.1	17.8	7.5	4.8	13.3
Computer-based training room	9.7	10.1	8.5	13.3	3.2	2.5	2.0	6.3	5.8	6.0	4.2	7.4
Student or public computer center	8.5	9.5	7.6	16.5	2.3	2.3	2.2	7.5	5.0	5.7	3.2	8.8

Relative standard errors (RSEs) for Table C16. Electricity expenditures by Census region, 2018

	RSEs for electricity expenditures											
	RSEs for total electricity expenditures				Per kWh				Per square foot			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	7.2	7.5	6.3	5.6	2.1	2.3	1.4	3.1	5.8	4.0	2.9	4.7
Window and interior lighting features (more than one may apply)												
Multipaned windows	7.8	7.5	7.0	7.0	2.3	2.5	1.6	3.4	6.7	4.6	2.7	4.4
Tinted window glass	9.9	8.5	6.0	6.2	2.3	2.4	1.8	3.1	6.6	4.2	3.4	5.8
Reflective window glass	15.1	11.0	8.8	10.7	3.0	4.0	1.9	4.5	13.0	6.0	3.9	5.4
External overhangs or awnings	14.4	9.2	8.5	7.6	3.8	3.9	2.0	3.7	10.6	5.6	3.9	5.8
Skylights or atriums	11.7	9.0	5.7	10.0	4.4	4.9	1.9	4.5	4.7	5.8	3.8	6.2
Light scheduling	11.5	8.9	7.2	8.2	2.3	2.9	1.7	3.7	7.0	4.6	2.8	6.9
Occupancy sensors	8.2	8.0	7.4	8.4	1.9	2.6	1.8	3.9	7.6	4.5	3.5	5.4
Multilevel lighting or dimming	12.1	9.4	16.2	12.7	3.8	4.7	2.8	6.4	10.7	6.5	5.8	6.9
Daylight harvesting	18.2	16.8	10.3	13.8	5.7	11.5	2.0	6.1	9.0	7.7	6.5	9.5
Plug-load control	25.1	39.1	19.6	28.9	11.0	37.2	3.6	12.9	11.4	24.6	16.6	20.4
Demand responsive lighting	25.7	27.2	25.9	22.7	5.5	3.3	4.7	5.6	19.9	18.0	6.9	18.2
Building automation system (BAS) for lighting	15.0	9.1	6.7	12.4	5.2	1.5	2.2	5.2	11.0	5.3	5.0	7.8
Electric vehicle (EV) charging												
Charging stations associated with the building	17.7	21.2	14.4	10.4	5.4	2.8	2.7	5.8	9.3	16.6	6.2	5.2
Annual consumption (kilowatthours)												
10,000 or less	24.4	14.8	20.6	24.3	4.0	6.3	6.1	6.1	13.3	10.8	15.0	10.9
10,001 to 50,000	12.1	14.7	11.7	15.8	3.2	3.5	2.9	6.4	9.0	6.6	8.2	8.0
50,001 to 100,000	23.7	15.5	11.3	9.3	7.1	3.4	3.1	7.3	12.8	10.5	8.1	8.3
100,001 to 500,000	10.9	10.2	9.4	9.0	3.6	1.7	2.0	3.9	7.4	4.1	5.0	6.5
500,001 to 1,000,000	16.9	13.7	10.9	13.0	4.7	1.9	2.9	5.0	11.0	4.7	5.7	7.7
1,000,001 to 5,000,000	12.6	13.3	9.2	9.6	3.0	3.5	1.6	3.5	7.9	10.3	3.6	6.0
Over 5,000,000	14.5	12.8	11.0	16.1	3.0	5.4	2.6	7.2	14.1	7.0	4.9	16.5

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>.

^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.

^c*Office devices* refers to any combination of printers, copiers, scanners, or FAX machines.