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Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	Sum of major fuels consumption (trillion British thermal units [Btu])				Total floorspace of buildings (million square feet)				Energy intensity for sum of major fuels (thousand Btu/square foot)			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	1,226	1,930	2,348	1,284	15,951	25,932	34,907	19,633	76.9	74.4	67.3	65.4
Building floorspace (square feet)												
1,001 to 5,000	78	165	223	110	1,126	2,269	2,979	1,651	69.3	72.7	74.7	66.6
5,001 to 10,000	77	177	212	132	1,154	3,021	3,542	2,488	66.6	58.6	59.8	52.9
10,001 to 25,000	143	319	274	184	2,371	4,469	5,656	3,342	60.5	71.4	48.5	55.0
25,001 to 50,000	176	292	282	209	2,140	4,064	4,716	3,036	82.4	71.9	59.8	68.8
50,001 to 100,000	170	286	434	184	2,195	3,942	6,312	2,853	77.6	72.6	68.8	64.4
100,001 to 200,000	201	212	359	187	2,659	2,759	4,999	2,586	75.5	77.0	71.8	72.3
200,001 to 500,000	218	275	353	158	2,397	3,062	4,203	2,115	90.8	89.9	84.1	74.7
Over 500,000	163	203	210	121	1,908	2,347	2,500	1,562	85.3	86.6	83.9	77.2
Principal building activity												
Education	186	252	301	114	2,545	3,837	4,967	2,275	73.2	65.8	60.6	50.1
Food sales	Q	115	53	Q	Q	404	249	Q	Q	284.2	212.1	Q
Food service	28	89	154	94	138	279	563	405	204.4	318.4	273.0	231.8
Health care	105	172	178	126	779	1,076	1,173	990	135.2	160.2	151.3	126.9
Inpatient	70	138	142	87	367	712	716	463	190.0	193.4	197.8	188.6
Outpatient	36	35	36	38	412	364	457	527	86.5	95.3	78.3	72.6
Lodging	112	152	184	149	1,207	1,661	2,379	1,729	92.7	91.6	77.5	86.4
Mercantile	123	245	374	211	1,394	2,625	4,463	2,300	88.2	93.3	83.9	91.7
Retail (other than mall)	35	101	140	57	606	1,482	2,163	943	57.0	68.3	64.5	60.9
Enclosed and strip malls	88	144	235	153	788	1,143	2,300	1,357	112.1	125.7	102.1	113.1
Office	238	281	373	202	3,196	4,336	5,703	3,427	74.3	64.9	65.4	58.9
Public assembly	95	187	202	99	1,107	1,890	2,711	1,485	86.0	98.8	74.6	66.7
Public order and safety	Q	Q	60	24	Q	Q	673	323	Q	Q	89.8	73.8
Religious worship	32	56	79	27	585	1,444	2,569	873	54.9	38.6	30.6	30.5
Service	66	96	101	54	1,268	2,223	1,684	1,066	52.2	43.3	60.0	50.9
Warehouse and storage	84	177	177	90	2,398	4,714	6,365	4,006	35.0	37.5	27.9	22.5
Other	105	67	101	55	744	601	809	281	141.2	112.1	125.0	194.9
Vacant	Q	10	10	2	Q	544	599	260	Q	17.8	17.1	Q
Year constructed												
Before 1920	84	61	54	33	1,285	1,113	790	412	65.7	54.7	68.8	80.2
1920 to 1945	131	124	85	60	1,589	1,914	1,251	891	82.6	64.7	68.1	67.8
1946 to 1959	116	113	155	60	1,539	1,714	2,420	1,264	75.4	66.1	64.0	47.7
1960 to 1969	159	222	274	109	2,045	2,806	3,758	1,752	77.5	79.2	72.9	62.4
1970 to 1979	187	293	265	160	2,263	3,889	4,243	2,666	82.8	75.4	62.4	60.0
1980 to 1989	176	235	329	222	2,015	2,933	5,244	3,272	87.5	80.1	62.8	67.9
1990 to 1999	137	253	373	194	1,948	4,110	6,158	3,320	70.5	61.7	60.6	58.4
2000 to 2009	154	437	525	275	2,107	4,846	7,050	3,497	73.2	90.2	74.5	78.7
2010 to 2018	80	191	287	169	1,159	2,609	3,994	2,557	69.3	73.3	71.9	66.2

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	Sum of major fuels consumption (trillion British thermal units [Btu])				Total floorspace of buildings (million square feet)				Energy intensity for sum of major fuels (thousand Btu/square foot)			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	1,226	1,930	2,348	1,284	15,951	25,932	34,907	19,633	76.9	74.4	67.3	65.4
Climate zone^a												
Cold or very cold	68	385	N	88	1,099	4,814	N	1,131	61.5	80.0	N	77.7
Cool	509	1,110	N	353	6,984	15,176	N	4,608	72.8	73.1	N	76.5
Mixed mild	650	435	577	250	7,868	5,942	7,660	3,626	82.6	73.1	75.3	69.0
Warm	N	N	1,186	440	N	N	17,361	7,725	N	N	68.3	57.0
Hot or very hot	N	N	585	153	N	N	9,886	2,543	N	N	59.2	60.1
Number of floors												
1	325	842	1,101	585	4,478	11,650	17,683	9,765	72.5	72.3	62.3	59.9
2	266	451	451	269	4,001	6,929	7,821	4,549	66.5	65.1	57.7	59.2
3	191	241	226	90	2,409	3,505	3,188	1,414	79.5	68.8	71.0	63.9
4 to 9	268	282	415	220	3,313	2,649	4,427	2,642	80.8	106.3	93.7	83.1
10 or more	176	114	154	119	1,751	1,199	1,787	1,262	100.7	94.8	86.2	94.5
Elevators and escalators (more than one may apply)												
Any elevators	683	776	969	537	8,202	9,377	12,038	6,885	83.3	82.7	80.5	78.0
1 elevator	210	276	299	145	3,109	4,062	4,660	2,384	67.6	68.0	64.2	60.7
2 to 5 elevators	256	270	379	209	3,009	3,326	4,455	2,526	85.1	81.3	85.1	82.6
6 or more elevators	217	229	290	183	2,085	1,988	2,924	1,974	104.3	115.3	99.3	92.9
Any escalators	77	66	106	Q	890	766	1,292	805	86.4	86.0	81.8	94.1
Number of workers (main shift)												
Fewer than 5	162	289	292	146	3,059	6,270	7,676	4,060	52.8	46.1	38.1	36.1
5 to 9	80	219	250	115	1,322	2,749	4,122	2,129	60.5	79.7	60.7	54.0
10 to 19	102	249	248	179	1,471	3,544	3,911	2,421	69.4	70.2	63.3	74.1
20 to 49	186	383	409	255	2,296	4,507	5,858	3,470	80.9	85.1	69.8	73.5
50 to 99	210	236	393	174	2,347	3,136	4,836	2,642	89.4	75.2	81.4	65.9
100 to 249	219	270	362	181	2,652	3,151	4,425	2,214	82.6	85.7	81.9	81.6
250 or more	267	284	393	233	2,803	2,576	4,078	2,695	95.4	110.1	96.3	86.4
Weekly operating hours												
Fewer than 40	68	135	134	77	1,390	3,282	4,043	2,051	49.2	41.0	33.2	37.4
40 to 48	129	296	338	184	2,318	4,905	7,411	4,191	55.4	60.3	45.6	44.0
49 to 60	218	353	456	238	4,062	5,738	8,352	4,693	53.6	61.6	54.6	50.8
61 to 84	235	317	400	230	2,746	4,062	5,016	2,912	85.5	78.1	79.8	79.1
85 to 167	173	285	322	196	1,822	2,935	3,138	2,143	95.0	97.2	102.7	91.3
Open continuously	404	544	698	358	3,612	5,011	6,948	3,642	111.7	108.5	100.4	98.4
Ownership and occupancy												
Nongovernment owned	965	1,529	1,733	992	12,696	20,467	26,255	15,311	76.0	74.7	66.0	64.8
Owner occupied	574	982	1,104	530	7,704	12,897	16,788	7,966	74.5	76.1	65.7	66.5
Leased to tenant or tenants	388	544	625	461	4,824	7,282	9,140	7,136	80.3	74.8	68.4	64.6
Unoccupied	Q	Q	4	Q	Q	Q	326	Q	Q	Q	11.2	Q
Government owned	261	401	615	292	3,255	5,466	8,653	4,322	80.3	73.3	71.1	67.5
Federal	26	42	69	21	288	406	914	337	91.4	103.1	75.9	62.7
State	84	104	274	116	919	1,329	3,215	1,425	91.3	78.3	85.3	81.1
Local	151	255	271	155	2,048	3,730	4,523	2,559	73.8	68.3	60.0	60.6

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	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	1,226	1,930	2,348	1,284	15,951	25,932	34,907	19,633	76.9	74.4	67.3	65.4
Party responsible for operation of energy systems												
Building owner	1,023	1,608	1,911	1,020	13,448	21,859	28,685	15,290	76.1	73.6	66.6	66.7
Business owner or tenant	161	239	324	192	2,034	2,842	4,674	3,292	79.0	84.2	69.4	58.3
Property management	19	31	53	41	265	430	725	573	72.6	71.6	73.4	71.1
Other	23	52	59	31	205	801	823	477	111.2	64.7	71.6	65.1
Provider of direct input on energy-related equipment purchases												
Building owner	1,061	1,666	2,009	1,052	13,953	22,684	30,258	15,967	76.1	73.4	66.4	65.9
Business owner or tenant	97	149	200	141	1,234	1,729	2,704	1,918	78.8	86.2	74.0	73.3
Property management	Q	Q	30	Q	Q	Q	393	Q	Q	Q	75.3	Q
Other	59	93	109	67	617	1,265	1,552	1,470	94.9	73.4	70.3	45.3
Number of establishments												
1	792	1,335	1,562	779	10,254	18,669	23,733	12,736	77.2	71.5	65.8	61.2
2 to 5	195	326	402	282	2,796	3,859	5,957	3,820	69.6	84.6	67.5	73.9
6 to 10	87	106	141	104	1,172	1,311	1,908	1,148	74.0	81.0	74.1	90.3
11 to 20	79	74	123	65	759	736	1,533	867	104.5	100.4	80.0	75.5
More than 20	70	83	115	51	785	967	1,412	835	88.9	86.0	81.4	61.4
Currently unoccupied	Q	5	5	Q	Q	390	365	Q	Q	12.2	13.6	Q
Predominant exterior wall material												
Brick, stone, or stucco	646	985	1,347	616	8,079	11,616	18,335	8,104	80.0	84.8	73.4	76.0
Concrete (block or poured)	287	381	454	314	3,608	4,672	6,316	4,761	79.6	81.5	71.8	65.9
Concrete panels	68	144	209	113	883	2,110	3,015	2,323	76.9	68.4	69.2	48.8
Siding or shingles	89	161	65	69	1,294	2,217	1,124	1,357	69.0	72.6	57.7	51.1
Metal panels	58	180	192	68	1,147	4,378	4,899	1,774	50.9	41.0	39.2	38.6
Window glass	41	44	50	51	396	450	685	661	102.5	97.9	73.1	77.6
Other	37	36	32	52	544	489	532	653	67.1	72.7	60.2	79.2
Predominant roof material												
Metal surfacing	81	287	480	158	1,852	5,702	9,752	3,629	43.5	50.4	49.2	43.5
Synthetic or rubber	605	758	783	441	7,029	8,655	9,849	6,030	86.0	87.5	79.5	73.2
Built-up	234	445	553	312	3,081	5,119	6,955	4,154	75.8	87.0	79.4	75.2
Slate or tile shingles	45	79	77	71	710	892	1,318	1,077	63.8	89.0	58.8	65.8
Wooden materials (including shingles)	Q	Q	21	40	Q	Q	227	814	Q	Q	93.0	49.3
Asphalt, fiberglass, or other shingles	188	276	284	168	2,351	4,528	4,588	2,591	79.9	61.0	61.8	64.7
Concrete	18	Q	75	53	249	Q	989	513	73.3	Q	75.9	103.5
Other	44	45	75	40	393	577	1,231	825	111.0	77.9	61.0	48.9
Roof tilt												
Flat	885	1,194	1,468	850	10,648	13,377	18,431	11,797	83.1	89.3	79.6	72.1
Shallow pitch	190	482	579	304	2,699	8,448	10,882	5,580	70.6	57.0	53.2	54.5
Steeper pitch	151	254	300	129	2,604	4,108	5,594	2,255	58.0	61.9	53.7	57.2

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	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	1,226	1,930	2,348	1,284	15,951	25,932	34,907	19,633	76.9	74.4	67.3	65.4
Cool roof characteristics (more than one may apply)												
White or reflective coating or paint	328	634	929	598	3,767	7,627	12,470	8,934	87.1	83.2	74.5	66.9
White or reflective tiles or shingles	43	44	101	33	452	515	1,215	532	94.9	85.3	83.3	61.6
Aluminum coating	56	61	168	59	1,114	956	3,100	978	49.9	63.8	54.1	60.6
Ballasted roof system	121	199	131	97	1,273	2,295	1,623	1,085	94.8	86.8	80.7	89.7
Other cool roof property	27	Q	51	24	386	Q	698	241	70.6	Q	73.0	98.5
Renovations since 2000 (more than one may apply)												
Any type of renovation	709	1,010	1,155	601	8,419	12,619	15,951	8,176	84.2	80.0	72.4	73.5
Addition or annex	164	346	292	132	1,893	4,018	3,410	1,534	86.8	86.1	85.6	86.0
Reduction in floorspace	44	49	43	18	422	538	585	238	103.6	91.4	73.5	74.7
Roof replacement	362	492	504	262	4,394	5,933	7,265	3,270	82.4	82.9	69.4	80.0
Interior wall reconfiguration	358	504	532	275	4,209	6,338	7,074	3,661	85.2	79.6	75.2	75.2
Window replacement	221	282	205	156	2,667	3,264	3,124	1,922	83.0	86.5	65.5	81.3
HVAC equipment upgrade	526	620	692	363	5,893	7,252	9,635	4,794	89.3	85.5	71.9	75.8
Lighting upgrade	507	697	700	431	5,958	8,390	9,312	5,438	85.1	83.0	75.2	79.3
Electrical upgrade	352	395	392	206	3,872	4,485	4,924	2,480	91.0	88.0	79.7	82.9
Plumbing system upgrade	330	372	383	207	3,759	4,158	4,908	2,711	87.8	89.5	78.0	76.3
Insulation upgrade	195	181	178	109	2,257	2,055	2,406	1,263	86.4	88.2	74.1	86.1
Fire, safety, or security upgrade	399	508	489	262	4,398	5,671	6,570	3,347	90.6	89.5	74.4	78.4
Structural upgrade	99	105	96	93	1,045	1,150	1,126	882	94.9	90.9	85.2	105.4
Other	Q	Q	59	14	Q	Q	606	233	Q	Q	98.0	59.3
No renovations	466	783	1,006	556	6,619	11,442	16,367	9,403	70.4	68.4	61.5	59.1
Buildings constructed 2013 or later	52	137	187	126	913	1,871	2,589	2,053	56.4	73.0	72.0	61.6
Energy sources (more than one may apply)												
Electricity	1,226	1,930	2,348	1,284	15,811	25,488	34,353	19,192	77.5	75.7	68.3	66.9
Natural gas	957	1,682	1,741	1,062	11,331	20,410	21,895	14,086	84.4	82.4	79.5	75.4
Fuel oil	518	473	596	371	5,930	4,585	6,794	3,875	87.3	103.2	87.7	95.8
District heat	207	189	249	140	1,823	1,507	2,130	1,284	113.6	125.6	117.1	108.9
District chilled water	65	105	206	101	520	746	2,059	963	125.0	141.0	100.3	104.7
Propane	150	149	172	128	2,470	2,381	3,358	1,948	60.6	62.4	51.3	65.6
Solar	85	54	43	112	1,214	650	531	1,424	70.2	83.3	81.4	78.9
Wood, coal, and other	21	39	51	33	415	617	676	405	51.6	63.4	76.2	82.7
Space-heating energy sources (more than one may apply)												
Electricity	495	821	1,343	645	6,375	9,632	19,917	9,679	77.6	85.2	67.4	66.7
Natural gas	806	1,500	1,346	897	9,984	18,816	17,479	11,764	80.8	79.7	77.0	76.2
Fuel oil	167	92	41	22	2,515	710	728	180	66.2	129.1	56.7	120.2
District heat	199	171	248	134	1,779	1,428	2,092	1,247	112.0	119.7	118.6	107.5
Propane	39	32	58	Q	920	1,111	1,264	601	42.5	28.7	46.2	88.3
Other sources ^b	Q	15	Q	Q	Q	375	Q	Q	Q	39.8	Q	Q

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	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	1,226	1,930	2,348	1,284	15,951	25,932	34,907	19,633	76.9	74.4	67.3	65.4
Primary space-heating energy source												
Electricity	168	376	885	315	2,650	4,676	14,237	6,054	63.6	80.4	62.2	52.0
Natural gas	715	1,344	1,077	760	8,893	17,082	14,158	9,927	80.4	78.7	76.1	76.5
Fuel oil	104	Q	19	Q	1,632	Q	408	Q	63.7	Q	45.9	Q
District heat	189	164	229	126	1,696	1,363	1,873	1,159	111.7	120.0	122.2	108.5
Propane	Q	16	27	Q	508	797	751	Q	40.3	20.5	36.5	Q
Other sources ^b	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Cooling energy sources (more than one may apply)												
Electricity	1,116	1,746	2,196	1,143	14,054	22,160	31,905	16,406	79.4	78.8	68.8	69.7
Natural gas	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
District chilled water	65	105	206	101	520	746	2,059	963	125.0	141.0	100.3	104.7
Water-heating energy sources (more than one may apply)												
Electricity	574	804	1,251	556	7,664	10,882	19,834	8,745	74.9	73.9	63.1	63.5
Natural gas	601	1,242	1,269	871	6,978	14,118	14,834	10,722	86.2	88.0	85.6	81.3
Fuel oil	88	29	25	Q	1,154	194	322	Q	76.6	147.2	77.1	Q
District heat	161	123	134	75	1,380	958	1,167	700	116.8	127.8	114.7	107.3
Propane	28	Q	53	Q	482	Q	860	Q	57.3	Q	61.8	Q
Cooking energy sources (more than one may apply)												
Electricity	480	877	906	503	5,198	9,198	10,589	5,523	92.4	95.3	85.5	91.0
Natural gas	536	816	904	585	5,216	7,671	9,205	5,614	102.8	106.4	98.2	104.1
Propane	82	22	75	49	1,017	290	1,227	566	80.7	75.7	61.2	85.7
Energy end uses (more than one may apply)												
Buildings with space heating	1,199	1,907	2,239	1,222	15,465	24,096	31,527	17,572	77.5	79.1	71.0	69.5
Buildings with cooling	1,178	1,805	2,321	1,211	14,557	22,577	33,255	17,118	80.9	80.0	69.8	70.7
Buildings with water heating	1,200	1,892	2,272	1,226	15,001	23,634	31,781	17,301	80.0	80.0	71.5	70.9
Buildings with cooking	744	1,164	1,308	737	8,071	12,282	15,176	8,051	92.2	94.8	86.2	91.5
Buildings with manufacturing	77	207	110	89	979	2,302	2,067	1,522	78.9	89.8	53.2	58.8
Buildings with electricity generation	616	740	834	529	6,798	7,193	9,746	5,720	90.6	102.8	85.5	92.5
Buildings with lighting	1,225	1,926	2,340	1,282	15,760	25,183	34,055	19,106	77.7	76.5	68.7	67.1
Percentage of floorspace heated												
Not heated	27	23	109	62	486	1,837	3,380	2,060	55.2	12.4	32.1	30.0
1% to 50%	41	81	198	122	1,095	1,661	4,818	3,046	37.3	48.8	41.1	40.0
51% to 99%	295	365	613	324	3,212	4,032	8,281	4,648	91.9	90.4	74.0	69.8
100%	863	1,461	1,429	776	11,158	18,402	18,428	9,878	77.4	79.4	77.5	78.5
Percentage of floorspace cooled												
Not cooled	48	124	27	73	1,394	3,356	1,652	2,515	34.7	37.1	16.1	29.0
1% to 50%	200	274	225	159	3,624	5,427	6,519	4,152	55.3	50.5	34.5	38.3
51% to 99%	490	570	788	350	5,243	6,607	9,780	4,647	93.5	86.3	80.6	75.3
100%	487	961	1,308	702	5,691	10,543	16,955	8,319	85.6	91.2	77.1	84.4

Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	Sum of major fuels consumption (trillion British thermal units [Btu])				Total floorspace of buildings (million square feet)				Energy intensity for sum of major fuels (thousand Btu/square foot)			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	1,226	1,930	2,348	1,284	15,951	25,932	34,907	19,633	76.9	74.4	67.3	65.4
Percentage lit when open												
0%	N	Q	Q	Q	N	Q	Q	Q	N	Q	Q	Q
1% to 50%	114	224	176	86	2,018	4,754	5,048	2,352	56.5	47.2	34.9	36.7
51% to 99%	543	930	1,048	595	6,450	10,568	13,858	7,971	84.2	88.0	75.7	74.6
100%	564	760	1,107	598	7,115	9,323	14,811	8,628	79.3	81.5	74.8	69.3
Building never open or electricity not used	5	14	8	4	367	1,040	945	646	14.3	13.8	8.6	6.4
Percentage lit during off hours												
0%	112	170	236	141	2,230	4,352	5,419	3,577	50.0	38.9	43.5	39.5
1% to 50%	889	1,500	1,725	936	11,610	19,201	25,236	13,753	76.6	78.1	68.4	68.0
51% to 100%	171	204	283	168	1,480	1,524	2,778	1,461	115.2	133.7	101.9	115.0
Building always open with no off hours	55	57	104	38	492	410	921	401	112.1	137.8	112.6	95.4
Electricity not used	N	N	N	N	Q	Q	554	440	N	N	N	N
Heating equipment (more than one may apply)												
Packaged heating units	541	1,054	1,323	748	6,568	12,471	18,507	10,518	82.4	84.5	71.5	71.1
Furnaces	174	466	332	215	2,562	7,055	4,552	3,103	67.8	66.1	72.9	69.1
Individual space heaters	290	457	472	302	3,794	6,298	6,794	4,236	76.5	72.6	69.5	71.3
Boilers	582	772	622	471	7,386	8,614	7,445	5,385	78.8	89.6	83.5	87.4
Heat pumps	203	272	422	262	2,502	3,025	6,318	3,265	81.0	90.0	66.8	80.2
District heat	199	171	248	134	1,779	1,428	2,092	1,247	112.0	119.7	118.6	107.5
Duct reheat	95	158	295	83	1,069	1,694	3,660	996	88.9	93.1	80.5	83.2
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Cooling equipment (more than one may apply)												
Packaged air-conditioning units	780	1,207	1,512	815	9,366	14,019	21,324	11,581	83.3	86.1	70.9	70.4
Residential-type central air conditioners	239	476	436	174	2,790	6,687	6,230	2,563	85.6	71.2	70.0	67.8
Individual air conditioners	311	296	285	174	3,657	3,387	4,428	2,146	85.1	87.3	64.3	80.9
Central chillers	346	425	592	315	3,722	4,575	6,522	3,107	93.0	92.9	90.8	101.4
Heat pumps	179	162	262	216	2,394	2,034	4,170	2,501	75.0	79.9	62.7	86.4
District chilled water	65	105	206	101	520	746	2,059	963	125.0	141.0	100.3	104.7
Swamp coolers	Q	Q	33	103	Q	Q	439	1,311	Q	Q	75.5	78.5
Other	Q	N	Q	Q	Q	N	Q	Q	Q	N	Q	Q

Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	Sum of major fuels consumption (trillion British thermal units [Btu])				Total floorspace of buildings (million square feet)				Energy intensity for sum of major fuels (thousand Btu/square foot)			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	1,226	1,930	2,348	1,284	15,951	25,932	34,907	19,633	76.9	74.4	67.3	65.4
HVAC features (more than one may apply)												
Economizer cycle	622	917	846	630	6,948	10,004	9,425	7,711	89.6	91.6	89.8	81.8
Variable air volume (VAV) system	479	695	843	504	5,195	7,959	10,180	5,934	92.2	87.4	82.8	84.9
Dedicated outside air system (DOAS)	180	239	303	160	1,743	2,202	3,426	1,655	103.5	108.5	88.3	96.6
Demand controlled ventilation (DCV)	242	191	262	155	2,763	2,445	3,399	1,866	87.6	78.0	77.2	83.2
Regular HVAC maintenance	1,113	1,642	2,116	1,155	13,396	19,821	28,848	15,949	83.1	82.8	73.3	72.4
Building automation system (BAS) controls heating or cooling	710	976	1,197	695	7,665	10,073	14,346	8,378	92.6	96.9	83.4	82.9
Internet-connected or smart thermostat	47	84	162	86	652	1,229	2,899	1,185	72.2	68.4	56.0	72.4
Programmable thermostat	247	387	385	279	3,733	5,846	6,437	4,865	66.0	66.2	59.8	57.4
Main equipment replaced since 2000 (more than one may apply)												
Heating	486	659	690	357	6,012	9,489	11,249	5,701	80.8	69.4	61.3	62.7
Cooling	411	452	495	276	5,307	6,184	7,636	3,886	77.5	73.1	64.8	71.0
Water-heating equipment												
Centralized system	770	1,340	1,494	815	9,881	16,972	21,111	11,316	78.0	78.9	70.7	72.0
Distributed system	244	265	349	179	2,886	3,220	5,109	3,093	84.6	82.2	68.4	57.9
Combination of centralized and distributed systems	186	287	429	232	2,234	3,442	5,561	2,892	83.2	83.4	77.1	80.4
Generation technologies (more than one may apply)												
Reciprocating engine generators	537	658	770	406	5,771	6,335	8,899	4,158	93.0	103.9	86.5	97.5
Solar panels	84	54	42	108	1,211	636	520	1,384	69.2	84.5	81.1	77.7
Other generation technology	56	59	42	48	470	541	548	497	118.2	109.3	76.5	96.6
Lighting equipment types (more than one may apply)												
Incandescent	368	510	603	357	4,136	5,931	7,274	3,740	89.1	86.0	82.9	95.3
Standard fluorescent	983	1,470	1,857	1,013	12,356	19,199	26,601	14,756	79.6	76.5	69.8	68.7
Compact fluorescent	564	821	945	586	6,318	9,007	11,489	6,876	89.3	91.1	82.3	85.2
High-intensity discharge (HID)	177	295	333	184	2,096	3,054	4,244	1,962	84.6	96.6	78.4	93.9
Halogen	261	320	472	311	2,581	3,297	5,936	3,198	101.1	97.0	79.5	97.3
LED	965	1,402	1,578	965	11,641	16,613	20,663	12,931	82.9	84.4	76.4	74.7
Other	N	Q	Q	Q	N	Q	Q	Q	N	Q	Q	Q
Refrigeration equipment (more than one may apply)												
Any refrigeration	1,061	1,726	2,125	1,108	12,962	21,011	28,694	14,922	81.9	82.1	74.1	74.2
Walk-in units	584	923	1,071	608	5,493	8,043	10,369	5,479	106.4	114.8	103.2	111.0
Cases or cabinets	527	827	995	550	5,324	7,642	10,221	5,331	99.0	108.3	97.4	103.2
Large cold storage areas	71	118	144	108	540	705	1,343	1,004	130.8	167.0	107.5	108.1
Commercial ice makers	507	929	1,258	660	5,157	8,764	13,922	6,829	98.3	106.0	90.4	96.6
Residential-type or compact units	870	1,355	1,678	886	10,759	17,793	23,691	12,492	80.9	76.2	70.8	70.9
Vending machines	613	994	1,327	617	7,167	11,359	16,051	7,494	85.5	87.5	82.6	82.3
No refrigeration	165	204	222	176	2,989	4,921	6,213	4,710	55.2	41.5	35.8	37.4

Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	Sum of major fuels consumption (trillion British thermal units [Btu])				Total floorspace of buildings (million square feet)				Energy intensity for sum of major fuels (thousand Btu/square foot)			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	1,226	1,930	2,348	1,284	15,951	25,932	34,907	19,633	76.9	74.4	67.3	65.4
Office equipment (more than one may apply)												
Desktop computers	1,114	1,748	2,156	1,165	13,897	21,432	30,192	16,492	80.2	81.6	71.4	70.6
With multiple monitors	751	1,052	1,410	803	8,928	12,903	18,299	10,714	84.2	81.5	77.1	75.0
Laptop computers	985	1,479	1,798	953	11,999	18,798	25,117	13,461	82.1	78.7	71.6	70.8
Dedicated servers	808	1,137	1,361	813	9,474	13,726	17,711	10,685	85.3	82.8	76.8	76.1
Tablets charged in building	728	1,091	1,411	764	8,447	12,818	17,690	9,823	86.2	85.1	79.8	77.8
Large floor-standing office devices ^c	851	1,109	1,436	769	9,853	14,091	19,509	10,636	86.4	78.7	73.6	72.3
Smaller desktop office devices ^c	1,048	1,550	1,951	1,049	13,145	19,163	27,409	14,750	79.7	80.9	71.2	71.1
Interactive whiteboards	295	365	420	209	3,542	4,667	5,892	2,838	83.4	78.3	71.3	73.5
Televisions or video displays	950	1,385	1,781	942	11,323	16,168	23,646	12,481	83.9	85.6	75.3	75.5
Point-of-sale devices or cash registers	581	913	1,088	656	6,127	9,093	11,564	6,822	94.9	100.4	94.1	96.2
Food preparation or serving areas in non-food service buildings (more than one may apply)												
Snack bar, concession stand, or coffee shop	176	280	312	236	1,614	2,935	3,369	2,443	108.8	95.3	92.7	96.5
Fast food or small restaurant	187	299	302	234	1,657	2,581	3,165	2,356	113.0	115.9	95.5	99.5
Cafeteria or large restaurant	290	365	398	216	3,161	4,250	4,837	2,283	91.9	85.8	82.4	94.8
Commercial kitchen or food preparation area	348	506	575	312	3,289	4,923	6,243	3,244	105.9	102.8	92.0	96.2
Small kitchen area	302	484	442	279	3,784	6,211	6,683	3,840	79.7	78.0	66.2	72.6
Separate computer areas (more than one may apply)												
Server closet	731	1,049	1,264	732	8,779	12,544	17,501	9,898	83.2	83.6	72.2	73.9
Data center	238	277	309	238	2,570	3,036	3,409	2,369	92.6	91.1	90.6	100.3
Computer-based training room	257	403	457	284	2,945	4,509	5,745	3,356	87.2	89.3	79.5	84.5
Student or public computer center	199	266	335	207	2,273	3,202	4,635	2,418	87.4	83.1	72.2	85.8
Window and interior lighting features (more than one may apply)												
Multipaned windows	1,031	1,629	1,861	1,018	12,812	20,761	25,145	13,977	80.5	78.5	74.0	72.8
Tinted window glass	557	950	1,277	735	6,274	10,859	17,061	10,169	88.8	87.5	74.8	72.3
Reflective window glass	250	443	470	390	2,618	4,768	5,450	5,093	95.3	92.9	86.3	76.6
External overhangs or awnings	336	616	854	561	3,445	6,990	11,241	7,042	97.4	88.1	76.0	79.7
Skylights or atriums	260	449	452	325	3,193	5,228	6,385	5,009	81.4	85.9	70.8	64.8
Light scheduling	568	740	956	648	6,304	8,096	11,521	7,630	90.2	91.4	83.0	84.9
Occupancy sensors	761	970	1,099	695	9,010	11,768	14,044	9,482	84.5	82.4	78.3	73.3
Multilevel lighting or dimming	220	432	391	298	2,189	4,420	4,496	3,318	100.6	97.8	86.9	89.8
Daylight harvesting	114	155	208	165	1,350	1,390	2,488	2,017	84.6	111.8	83.8	82.0
Plug-load control	19	55	49	56	181	569	764	446	102.6	97.1	64.7	124.9
Demand responsive lighting	31	54	38	37	354	684	538	468	87.2	79.4	70.3	78.5
Building automation system (BAS) for lighting	234	376	502	351	2,713	3,673	6,054	4,205	86.3	102.3	82.9	83.4

Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	Sum of major fuels consumption (trillion British thermal units [Btu])				Total floorspace of buildings (million square feet)				Energy intensity for sum of major fuels (thousand Btu/square foot)			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	1,226	1,930	2,348	1,284	15,951	25,932	34,907	19,633	76.9	74.4	67.3	65.4
Electric vehicle (EV) charging												
Charging stations associated with the building	111	172	227	224	1,658	2,083	3,348	3,075	67.1	82.3	67.9	73.0

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

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

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

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

HVAC = Heating, ventilation, and air conditioning.

^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.

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.

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Relative standard errors (RSEs) for Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	RSEs for sum of major fuels consumption				RSEs for total floorspace of buildings				RSEs for energy intensity for sum of major fuels			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	5.8	6.5	6.1	7.7	7.2	7.4	6.1	7.1	3.7	3.6	3.1	5.0
Building floorspace (square feet)												
1,001 to 5,000	18.6	11.6	10.2	9.8	14.6	14.5	9.7	8.7	11.5	8.7	7.6	6.9
5,001 to 10,000	16.4	11.5	11.9	13.4	14.0	16.1	10.3	10.1	11.5	14.0	8.5	11.4
10,001 to 25,000	15.6	18.2	12.3	10.6	14.6	13.5	11.6	12.3	11.3	11.9	8.5	8.3
25,001 to 50,000	17.1	11.9	10.4	10.8	12.8	13.6	9.2	11.8	10.2	6.2	6.0	8.6
50,001 to 100,000	10.2	12.3	11.1	12.1	11.6	14.2	8.6	10.5	5.4	7.0	6.9	6.9
100,001 to 200,000	11.5	11.8	9.7	14.2	11.3	10.6	9.2	13.2	6.3	4.7	4.7	10.3
200,001 to 500,000	12.9	13.5	11.4	14.8	11.4	12.1	7.3	11.1	7.0	8.5	7.0	8.7
Over 500,000	12.3	11.1	13.5	41.0	14.3	14.2	15.7	29.3	7.9	7.7	8.4	21.4
Principal building activity												
Education	8.9	11.5	14.0	10.1	8.9	11.6	10.5	11.5	4.5	3.5	6.1	5.1
Food sales	48.7	39.0	25.8	27.4	59.3	29.8	27.3	26.2	23.5	16.9	12.8	11.1
Food service	28.5	17.4	12.6	20.7	27.4	12.5	13.6	16.9	20.9	9.8	7.5	9.6
Health care	15.2	14.4	9.7	13.4	15.2	11.5	9.7	14.5	6.2	5.5	4.5	7.2
Inpatient	18.7	17.1	10.9	16.7	20.9	14.9	10.6	19.9	5.8	4.8	3.2	9.3
Outpatient	18.1	20.9	16.4	16.9	17.8	19.7	15.6	15.8	8.9	4.9	5.1	8.8
Lodging	15.8	14.8	15.9	29.8	18.3	12.9	13.9	21.9	6.8	7.4	4.8	11.2
Mercantile	23.2	16.6	10.9	10.8	13.6	16.2	10.3	9.7	12.3	9.2	4.2	5.0
Retail (other than mall)	17.7	21.2	12.7	20.5	15.9	22.3	13.2	16.2	12.6	10.8	6.8	9.9
Enclosed and strip malls	30.7	19.5	15.1	14.8	25.5	17.5	14.0	13.0	10.2	8.6	3.4	5.6
Office	11.0	11.9	10.7	11.5	12.1	11.9	10.7	10.2	3.8	4.1	3.0	4.0
Public assembly	13.4	12.7	14.3	14.8	13.5	11.9	10.7	13.2	8.9	8.8	6.9	10.5
Public order and safety	31.0	47.7	33.3	27.9	27.1	38.1	28.3	26.6	10.3	16.2	10.7	8.7
Religious worship	23.1	20.1	14.5	24.9	26.2	18.8	14.4	20.5	10.5	11.7	7.7	13.2
Service	16.9	18.4	21.4	18.7	13.5	16.3	18.1	17.4	12.9	9.6	17.8	10.7
Warehouse and storage	18.2	15.9	14.5	18.3	17.2	12.5	14.0	15.0	5.5	9.4	7.4	12.1
Other	27.4	28.5	30.2	33.2	26.5	33.9	26.2	27.0	19.0	25.1	15.6	23.3
Vacant	42.8	27.0	21.6	46.7	37.7	28.8	20.1	39.1	19.8	22.0	18.2	55.6
Year constructed												
Before 1920	18.9	16.8	26.7	47.8	19.4	16.8	21.6	42.3	8.0	10.9	15.8	36.5
1920 to 1945	15.3	18.1	20.9	19.9	13.9	19.8	16.7	19.6	7.7	7.6	12.2	11.8
1946 to 1959	17.9	17.2	18.3	15.3	17.3	18.9	14.6	13.0	6.9	9.1	10.3	12.5
1960 to 1969	10.2	13.2	13.3	13.9	11.8	12.2	8.1	14.5	9.9	10.0	10.1	9.9
1970 to 1979	16.0	12.7	10.5	15.7	15.9	10.9	10.3	17.1	7.9	6.8	7.9	16.0
1980 to 1989	13.1	13.6	7.9	23.6	10.2	12.7	9.6	14.3	11.7	5.7	7.4	11.9
1990 to 1999	12.5	12.7	7.9	10.7	13.5	16.4	9.5	12.0	8.6	10.5	5.1	6.6
2000 to 2009	12.9	11.6	11.7	12.2	16.0	11.1	11.5	11.3	10.9	9.1	4.7	9.1
2010 to 2018	22.9	15.4	12.7	15.2	16.8	16.1	12.9	16.8	15.6	12.1	7.6	8.6

Relative standard errors (RSEs) for Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	RSEs for sum of major fuels consumption				RSEs for total floorspace of buildings				RSEs for energy intensity for sum of major fuels			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	5.8	6.5	6.1	7.7	7.2	7.4	6.1	7.1	3.7	3.6	3.1	5.0
Climate zone^a												
Cold or very cold	17.0	19.3	0.0	45.3	16.8	22.1	0.0	44.5	9.8	10.3	0.0	6.6
Cool	14.6	11.9	0.0	17.3	13.7	12.4	0.0	16.5	3.6	3.6	0.0	7.1
Mixed mild	9.8	25.4	22.5	45.1	12.3	23.0	20.8	39.9	6.7	7.1	4.2	15.3
Warm	0.0	0.0	14.3	10.9	0.0	0.0	13.8	10.7	0.0	0.0	4.2	6.7
Hot or very hot	0.0	0.0	13.2	27.0	0.0	0.0	15.1	33.9	0.0	0.0	6.7	11.3
Number of floors												
1	8.7	8.6	8.4	7.5	9.7	9.5	8.8	8.1	10.2	5.3	3.8	4.7
2	10.6	12.1	7.4	10.5	9.6	10.3	8.1	8.8	6.7	4.4	5.9	7.7
3	16.4	12.7	16.8	19.1	16.7	14.3	15.1	19.4	6.5	5.9	6.6	9.6
4 to 9	11.3	12.3	15.3	12.7	10.9	12.4	13.0	13.3	4.5	8.0	5.9	9.1
10 or more	9.7	18.4	22.1	39.7	12.2	25.1	22.5	30.1	6.4	9.4	8.7	15.9
Elevators and escalators (more than one may apply)												
Any elevators	7.0	7.3	11.5	13.2	8.0	7.5	9.5	11.8	3.5	3.4	4.0	6.6
1 elevator	9.9	10.2	18.9	13.1	10.8	9.8	13.8	14.3	7.3	4.2	6.9	8.7
2 to 5 elevators	10.7	12.5	12.6	10.3	11.3	10.7	10.6	9.6	5.4	5.8	5.8	7.6
6 or more elevators	10.0	13.2	13.0	30.1	12.8	13.9	16.0	23.7	6.1	8.3	7.0	12.3
Any escalators	19.1	18.4	21.7	57.1	17.5	20.5	23.6	43.9	8.3	6.8	10.8	21.9
Number of workers (main shift)												
Fewer than 5	17.2	12.2	11.8	10.5	15.6	13.9	10.6	13.4	5.8	9.9	5.1	10.7
5 to 9	16.2	20.4	11.0	12.6	15.4	17.6	10.3	13.8	10.4	17.6	5.5	7.4
10 to 19	13.1	14.5	10.3	12.0	15.2	18.6	11.4	11.5	10.0	9.8	6.9	10.8
20 to 49	9.3	10.0	9.3	11.5	7.9	10.9	9.6	8.6	7.7	5.6	5.5	8.6
50 to 99	14.4	11.3	13.9	14.1	12.6	10.2	11.7	11.8	10.1	6.0	5.9	7.4
100 to 249	12.4	11.8	9.9	14.6	13.7	10.2	8.4	15.4	7.0	6.2	2.9	7.8
250 or more	9.0	10.9	9.4	23.4	10.5	12.2	11.0	16.6	4.7	6.6	5.9	11.2
Weekly operating hours												
Fewer than 40	18.2	17.6	14.5	13.9	19.3	11.0	12.5	15.5	5.9	13.3	7.9	14.3
40 to 48	14.0	17.3	7.5	9.9	13.2	12.1	9.4	9.9	6.0	12.7	5.0	6.7
49 to 60	8.9	13.4	7.6	9.8	9.2	11.6	7.2	8.7	3.2	6.0	4.3	6.2
61 to 84	10.6	10.2	14.0	12.3	12.6	9.3	10.9	10.6	8.7	5.8	7.4	6.0
85 to 167	13.0	11.3	10.3	13.2	11.9	12.3	10.7	16.0	6.8	7.1	9.9	11.5
Open continuously	7.6	9.0	9.5	15.5	9.1	9.8	9.1	13.3	6.1	5.9	5.2	6.9
Ownership and occupancy												
Nongovernment owned	7.3	6.7	5.3	8.2	8.2	7.9	6.0	8.0	4.6	4.0	3.0	5.8
Owner occupied	9.9	6.2	6.0	11.6	10.2	7.0	6.2	8.9	3.8	5.7	4.1	7.8
Leased to tenant or tenants	10.6	11.6	8.0	7.9	10.1	11.9	8.1	9.3	8.4	2.7	4.3	6.5
Unoccupied	64.3	44.8	41.7	45.2	45.3	44.0	28.3	46.0	36.1	47.7	32.7	64.2
Government owned	10.4	11.0	15.9	12.7	11.1	11.9	12.5	11.1	3.2	5.7	6.1	6.0
Federal	26.9	32.3	30.5	44.9	31.7	25.7	28.3	33.5	13.5	14.5	10.0	25.7
State	25.6	21.2	28.8	22.3	25.5	21.8	22.0	17.8	5.1	11.8	10.6	10.9
Local	10.1	10.6	10.9	11.9	10.8	12.0	11.8	13.8	4.3	5.2	4.0	5.5

Relative standard errors (RSEs) for Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	RSEs for sum of major fuels consumption				RSEs for total floorspace of buildings				RSEs for energy intensity for sum of major fuels			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	5.8	6.5	6.1	7.7	7.2	7.4	6.1	7.1	3.7	3.6	3.1	5.0
Party responsible for operation of energy systems												
Building owner	6.5	6.9	7.0	8.8	7.5	8.1	6.4	7.2	3.5	4.2	3.7	5.1
Business owner or tenant	18.2	14.5	10.1	11.1	16.2	16.4	10.4	14.0	10.9	6.7	5.7	9.6
Property management	28.1	32.5	22.2	25.3	24.1	30.3	18.5	24.0	11.4	15.1	12.6	16.6
Other	37.1	19.6	20.4	16.9	28.6	19.6	18.2	22.6	16.5	8.8	10.0	20.0
Provider of direct input on energy-related equipment purchases												
Building owner	6.6	7.2	6.8	8.5	7.6	8.1	6.3	7.1	3.6	3.9	3.8	5.2
Business owner or tenant	21.5	16.2	11.2	13.9	15.1	16.2	13.0	19.5	12.1	9.0	7.9	11.2
Property management	35.6	41.1	32.7	28.5	30.7	38.2	25.5	33.4	14.5	11.1	18.2	22.2
Other	22.1	17.6	14.9	16.5	20.7	19.0	13.4	13.7	12.6	11.9	8.8	10.8
Number of establishments												
1	6.2	6.7	8.6	7.1	7.6	8.2	7.6	7.6	4.3	4.4	4.5	5.1
2 to 5	13.9	10.5	9.3	20.4	14.8	8.5	8.5	14.8	6.3	5.6	4.0	9.2
6 to 10	17.4	20.3	12.0	15.5	17.6	22.5	10.8	16.1	8.1	8.8	6.7	6.6
11 to 20	25.9	21.8	16.1	13.6	21.3	24.2	13.8	12.0	10.4	9.1	7.2	7.3
More than 20	23.0	33.0	13.7	16.3	17.9	29.1	14.8	16.1	9.0	9.7	10.5	9.6
Currently unoccupied	54.2	35.3	31.4	53.8	42.0	32.7	25.2	43.0	25.6	35.2	25.2	67.3
Predominant exterior wall material												
Brick, stone, or stucco	7.1	7.8	9.3	11.5	8.4	7.7	7.7	8.6	3.7	4.3	4.4	7.3
Concrete (block or poured)	9.5	11.8	6.7	8.8	11.4	13.9	7.6	9.2	10.6	8.6	4.7	8.0
Concrete panels	19.1	18.1	13.7	17.1	22.2	20.3	11.9	15.7	16.1	8.0	10.9	11.9
Siding or shingles	20.7	25.3	16.0	18.5	21.7	17.2	14.6	24.1	14.9	21.6	9.7	20.9
Metal panels	20.3	13.8	11.2	13.4	18.8	13.2	8.1	15.4	15.5	10.0	7.5	10.5
Window glass	25.6	19.0	17.8	25.3	23.8	18.5	18.5	23.4	11.8	9.5	7.2	7.2
Other	34.2	39.1	26.7	20.2	33.2	38.3	21.3	18.1	17.1	10.5	19.8	14.3
Predominant roof material												
Metal surfacing	11.3	15.0	10.7	10.2	9.3	11.6	10.1	11.5	7.4	14.0	4.7	10.1
Synthetic or rubber	8.1	7.8	8.3	9.2	9.2	7.5	7.5	9.8	5.0	3.8	3.9	4.6
Built-up	9.7	12.2	9.3	19.0	10.9	12.5	6.8	12.8	3.9	5.0	6.5	10.3
Slate or tile shingles	24.0	23.3	19.0	21.6	19.1	28.4	17.4	19.3	12.9	16.1	12.3	5.8
Wooden materials (including shingles)	54.7	41.6	23.2	20.6	54.3	48.0	26.3	23.2	13.3	27.9	19.0	17.5
Asphalt, fiberglass, or other shingles	12.4	13.7	9.2	16.5	13.6	12.4	9.5	14.2	8.9	5.5	5.8	12.8
Concrete	24.7	35.0	19.3	29.9	26.3	29.6	19.4	15.7	16.7	16.5	12.2	23.1
Other	38.8	16.2	14.5	16.9	19.8	16.4	15.4	21.9	35.2	13.4	9.9	19.3
Roof tilt												
Flat	6.5	7.7	6.3	10.0	7.7	7.1	5.2	9.0	4.8	3.8	3.8	5.7
Shallow pitch	13.3	10.2	9.4	7.6	12.0	10.4	9.3	9.2	8.9	4.3	3.8	8.4
Steeper pitch	12.0	16.1	9.3	18.1	13.5	12.4	9.8	15.8	5.2	16.0	5.1	8.3

Relative standard errors (RSEs) for Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	RSEs for sum of major fuels consumption				RSEs for total floorspace of buildings				RSEs for energy intensity for sum of major fuels			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	5.8	6.5	6.1	7.7	7.2	7.4	6.1	7.1	3.7	3.6	3.1	5.0
Cool roof characteristics (more than one may apply)												
White or reflective coating or paint	10.3	10.5	7.4	12.9	10.9	8.9	6.6	9.9	5.5	6.3	4.1	6.7
White or reflective tiles or shingles	24.1	26.8	23.2	16.4	22.0	24.7	18.9	15.7	18.9	13.0	9.2	15.2
Aluminum coating	17.1	20.8	16.2	18.4	18.4	24.3	11.8	30.9	14.0	14.6	10.7	26.8
Ballasted roof system	11.1	17.8	13.0	44.2	11.9	19.5	15.4	27.6	4.9	5.3	10.7	24.5
Other cool roof property	34.7	26.3	34.4	30.4	33.4	31.9	34.8	27.6	13.9	15.1	12.4	15.8
Renovations since 2000 (more than one may apply)												
Any type of renovation	7.6	5.7	5.9	10.5	7.1	8.2	6.0	8.9	3.7	4.6	3.3	6.2
Addition or annex	12.3	9.4	10.1	12.2	12.2	12.3	9.3	13.9	7.0	6.1	7.9	9.0
Reduction in floorspace	32.2	28.8	22.6	46.0	26.1	25.7	23.8	33.2	18.6	12.0	11.7	19.1
Roof replacement	10.0	6.6	7.1	18.5	9.9	8.6	8.0	13.5	4.5	4.3	5.0	10.6
Interior wall reconfiguration	10.6	6.1	7.4	20.7	10.3	7.5	5.7	13.5	5.5	5.2	4.4	9.5
Window replacement	11.3	8.6	11.8	26.5	9.7	12.3	10.3	18.9	4.9	7.0	7.0	12.9
HVAC equipment upgrade	9.5	6.6	7.3	15.6	9.6	8.9	7.3	12.1	4.5	5.7	4.8	8.2
Lighting upgrade	9.5	6.4	7.2	13.4	8.2	8.7	6.5	10.7	3.9	4.4	3.3	7.5
Electrical upgrade	9.3	8.4	10.4	22.4	9.4	11.6	10.9	15.3	4.0	6.7	5.7	11.3
Plumbing system upgrade	10.4	9.1	9.4	21.4	10.8	11.7	8.5	14.3	4.2	6.5	5.3	10.6
Insulation upgrade	14.9	10.8	11.1	37.6	14.6	16.1	10.8	27.4	7.0	9.2	7.2	17.7
Fire, safety, or security upgrade	10.6	7.0	7.6	19.8	9.7	8.9	7.2	14.0	4.3	5.0	4.9	9.5
Structural upgrade	19.7	12.9	15.4	42.0	15.5	19.3	15.7	32.7	11.4	11.5	6.5	15.9
Other	29.6	45.3	16.4	32.1	28.3	59.9	17.0	30.5	8.7	52.8	7.1	23.2
No renovations	7.8	9.2	8.9	6.9	9.9	8.4	8.2	7.4	6.4	5.6	4.3	4.7
Buildings constructed 2013 or later	20.5	21.2	12.3	15.3	19.9	18.4	14.8	15.6	12.4	15.5	8.5	8.6
Energy sources (more than one may apply)												
Electricity	5.8	6.5	6.1	7.7	7.1	7.3	6.0	7.0	3.7	3.4	3.1	4.7
Natural gas	6.2	7.0	6.1	9.3	8.2	7.5	6.3	8.6	4.6	2.7	3.1	4.1
Fuel oil	9.8	12.0	6.2	18.9	10.3	10.3	7.9	17.2	6.0	6.5	4.2	7.3
District heat	9.0	19.4	31.4	20.6	9.5	18.6	30.2	16.5	5.4	9.8	4.1	9.5
District chilled water	16.9	25.9	32.6	23.6	18.4	25.4	26.8	17.1	7.7	10.5	8.7	11.9
Propane	13.1	25.9	14.2	33.3	13.8	14.8	13.9	22.7	6.6	22.8	6.9	21.6
Solar	23.8	19.8	21.5	20.5	24.6	19.0	26.4	16.2	7.1	11.6	13.7	9.4
Wood, coal, and other	37.7	30.5	26.9	31.3	33.3	30.7	18.5	33.9	16.8	21.4	26.4	19.3
Space-heating energy sources (more than one may apply)												
Electricity	9.3	10.0	5.7	8.4	9.1	9.4	6.3	7.9	4.0	5.3	2.7	6.8
Natural gas	6.4	7.7	5.8	10.3	8.6	8.0	6.5	9.0	5.3	2.5	3.1	4.1
Fuel oil	18.9	24.8	22.4	40.6	16.6	18.5	23.4	41.6	7.4	13.1	9.3	8.3
District heat	10.2	15.0	31.6	20.2	10.2	17.7	30.8	16.2	5.6	7.7	4.0	10.1
Propane	27.2	25.6	29.6	71.6	18.6	21.0	26.6	44.9	18.7	14.5	13.3	45.6
Other sources ^b	54.4	32.3	55.8	48.1	34.8	34.1	48.7	42.3	36.2	18.7	17.3	40.5

Relative standard errors (RSEs) for Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	RSEs for sum of major fuels consumption				RSEs for total floorspace of buildings				RSEs for energy intensity for sum of major fuels			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	5.8	6.5	6.1	7.7	7.2	7.4	6.1	7.1	3.7	3.6	3.1	5.0
Primary space-heating energy source												
Electricity	15.5	16.9	8.6	8.3	12.5	16.4	8.5	10.4	6.9	9.8	3.4	6.4
Natural gas	6.6	8.3	6.4	11.6	8.5	8.5	7.6	10.1	5.5	2.6	3.7	4.6
Fuel oil	22.4	40.2	27.1	77.4	18.7	30.9	29.8	74.0	10.5	26.0	9.5	8.1
District heat	11.6	15.8	33.7	21.4	11.8	18.8	33.0	17.9	5.8	8.3	3.4	10.1
Propane	53.6	25.7	48.7	55.8	22.0	26.3	38.9	40.6	41.4	10.8	28.6	45.8
Other sources ^b	39.2	36.0	99.7	32.3	43.6	37.9	85.5	58.7	9.1	31.5	52.6	37.4
Cooling energy sources (more than one may apply)												
Electricity	5.9	6.3	5.7	7.6	7.7	7.0	5.9	6.7	3.9	2.9	2.8	4.5
Natural gas	29.5	42.9	47.2	58.8	30.0	52.7	48.3	52.5	13.0	14.4	29.2	52.5
District chilled water	16.9	25.9	32.6	23.6	18.4	25.4	26.8	17.1	7.7	10.5	8.7	11.9
Water-heating energy sources (more than one may apply)												
Electricity	8.2	9.3	6.3	6.8	9.3	9.3	6.5	6.5	6.2	5.3	3.3	5.8
Natural gas	6.8	8.2	6.7	9.5	8.6	8.5	6.5	8.7	4.4	3.2	2.4	4.6
Fuel oil	20.7	31.1	34.3	40.9	20.3	28.2	40.6	39.2	6.5	21.7	17.2	22.1
District heat	10.6	29.5	32.5	23.9	11.1	31.5	31.9	19.4	6.5	17.7	4.5	9.4
Propane	43.3	85.9	25.8	57.4	27.5	33.4	26.1	35.5	27.1	76.9	13.3	47.6
Cooking energy sources (more than one may apply)												
Electricity	7.1	8.6	7.3	13.8	7.1	7.7	6.8	10.9	4.4	4.7	3.3	5.1
Natural gas	8.0	6.9	5.3	11.5	8.5	6.8	5.6	10.4	5.0	3.2	2.6	4.8
Propane	21.2	25.8	23.2	24.6	22.1	24.6	21.1	21.0	12.5	14.6	12.3	14.8
Energy end uses (more than one may apply)												
Buildings with space heating	5.7	6.4	6.3	8.1	7.2	7.0	6.0	7.4	3.7	3.3	3.0	4.6
Buildings with cooling	5.8	6.2	6.1	7.7	7.5	6.8	5.9	6.7	3.9	2.9	3.0	4.4
Buildings with water heating	5.5	6.4	6.1	8.0	7.2	7.1	5.6	7.1	3.9	3.3	2.8	4.4
Buildings with cooking	6.0	7.0	5.6	10.6	6.5	7.0	5.5	9.0	3.9	3.5	2.3	4.7
Buildings with manufacturing	22.2	21.9	14.9	18.9	22.9	15.6	12.6	15.4	14.0	19.2	11.1	13.2
Buildings with electricity generation	7.2	8.1	6.6	14.2	9.0	7.1	7.3	12.7	5.8	4.7	4.2	5.8
Buildings with lighting	5.7	6.4	6.1	7.7	7.1	7.2	5.9	6.9	3.7	3.3	3.0	4.6
Percentage of floorspace heated												
Not heated	42.0	27.2	20.1	15.2	23.4	22.8	17.4	16.9	39.7	20.4	11.4	20.6
1% to 50%	20.9	15.6	10.0	16.5	19.7	19.2	10.6	14.1	11.2	15.7	6.5	10.6
51% to 99%	10.7	10.5	10.2	8.2	11.3	10.4	9.6	8.6	5.2	5.8	5.3	5.6
100%	6.3	7.3	6.7	11.1	7.3	7.3	6.6	9.0	4.5	3.6	3.3	5.2
Percentage of floorspace cooled												
Not cooled	21.4	32.9	19.9	24.7	16.6	14.9	16.1	18.6	9.3	29.5	13.9	19.3
1% to 50%	11.3	10.7	9.7	13.1	11.9	9.8	10.3	11.9	11.3	6.3	6.4	8.2
51% to 99%	8.0	9.8	10.2	12.8	8.9	10.0	9.3	10.2	5.8	4.6	4.7	7.6
100%	8.4	6.7	6.7	10.3	10.4	8.0	6.6	9.0	4.3	5.3	2.8	4.7

Relative standard errors (RSEs) for Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	RSEs for sum of major fuels consumption				RSEs for total floorspace of buildings				RSEs for energy intensity for sum of major fuels			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	5.8	6.5	6.1	7.7	7.2	7.4	6.1	7.1	3.7	3.6	3.1	5.0
Percentage lit when open												
0%	0.0	57.4	103.7	102.1	0.0	49.8	61.1	61.7	0.0	17.3	89.6	93.7
1% to 50%	15.3	13.5	10.7	14.6	16.3	13.0	10.8	14.9	9.3	7.3	6.3	11.5
51% to 99%	7.1	8.0	7.0	10.2	7.2	7.1	6.3	8.7	5.8	4.3	3.6	6.7
100%	7.9	9.3	7.8	7.7	7.6	10.9	7.4	7.7	4.7	4.3	4.1	5.3
Building never open or electricity not used	40.0	23.5	25.8	34.7	29.6	24.1	20.2	27.8	30.4	18.4	25.9	35.0
Percentage lit during off hours												
0%	15.8	15.9	14.0	17.5	14.8	12.2	14.0	15.4	8.9	8.3	5.4	10.0
1% to 50%	6.9	6.8	6.2	9.3	7.6	7.6	5.5	7.1	4.4	3.7	3.3	5.4
51% to 100%	15.9	16.5	10.5	12.0	16.2	13.4	10.8	12.8	8.3	9.3	8.2	10.3
Building always open with no off hours	22.4	26.5	18.4	30.8	24.3	28.2	17.8	28.5	9.2	8.7	12.1	12.9
Electricity not used	0.0	0.0	0.0	0.0	54.1	38.7	26.6	34.4	0.0	0.0	0.0	0.0
Heating equipment (more than one may apply)												
Packaged heating units	8.4	7.9	6.7	9.2	7.7	8.0	7.1	8.4	7.3	3.4	3.2	5.5
Furnaces	14.1	10.1	11.2	13.2	15.0	10.0	10.3	11.0	6.8	5.3	4.6	7.5
Individual space heaters	10.7	11.2	9.0	16.8	10.4	10.2	7.9	11.7	5.7	6.1	4.6	10.4
Boilers	7.1	9.3	5.9	14.6	9.3	7.6	5.9	12.7	3.9	4.6	3.8	5.6
Heat pumps	10.9	12.2	9.1	18.9	12.5	13.9	7.9	12.4	6.8	9.4	6.1	8.5
District heat	10.2	15.0	31.6	20.2	10.2	17.7	30.8	16.2	5.6	7.7	4.0	10.1
Duct reheat	21.2	15.6	9.1	17.4	17.4	16.3	9.7	16.8	13.0	6.3	4.9	8.5
Other	61.5	90.2	35.9	29.6	61.9	62.6	34.3	29.9	8.9	63.0	7.9	7.7
Cooling equipment (more than one may apply)												
Packaged air-conditioning units	6.0	6.9	6.5	6.5	8.0	7.7	6.6	7.0	5.5	3.1	3.5	4.2
Residential-type central air conditioners	10.2	7.0	11.7	16.6	11.5	8.1	10.8	13.4	5.9	4.6	5.7	10.1
Individual air conditioners	11.6	11.8	10.6	17.8	11.9	12.0	9.4	13.0	5.8	4.1	5.2	12.0
Central chillers	7.3	9.8	10.9	10.1	9.5	10.0	9.6	9.6	4.6	3.5	3.9	6.7
Heat pumps	14.7	15.7	11.2	21.1	16.2	17.0	10.3	15.5	8.2	10.7	8.4	8.3
District chilled water	16.9	25.9	32.6	23.6	18.4	25.4	26.8	17.1	7.7	10.5	8.7	11.9
Swamp coolers	56.3	29.0	46.1	17.2	71.5	31.2	39.0	13.7	50.2	11.7	13.3	9.7
Other	70.2	0.0	54.1	57.8	70.2	0.0	59.8	50.8	0.0	0.0	40.9	54.2

Relative standard errors (RSEs) for Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	RSEs for sum of major fuels consumption				RSEs for total floorspace of buildings				RSEs for energy intensity for sum of major fuels			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	5.8	6.5	6.1	7.7	7.2	7.4	6.1	7.1	3.7	3.6	3.1	5.0
HVAC features (more than one may apply)												
Economizer cycle	6.0	7.1	8.3	12.2	8.2	6.1	7.9	11.1	4.8	3.1	3.7	5.5
Variable air volume (VAV) system	8.5	6.2	12.6	14.1	10.2	6.7	11.0	11.0	8.0	3.8	5.7	6.1
Dedicated outside air system (DOAS)	11.2	19.6	17.0	30.1	10.9	14.2	14.9	23.1	6.3	16.9	6.1	10.6
Demand controlled ventilation (DCV)	11.0	10.0	10.0	14.7	12.1	11.9	9.3	13.6	6.1	6.9	6.7	12.5
Regular HVAC maintenance	5.7	6.8	6.7	8.5	8.0	6.9	6.2	7.8	4.4	2.7	3.5	4.5
Building automation system (BAS) controls heating or cooling	5.5	7.0	7.5	11.7	7.1	5.1	7.4	9.7	5.6	4.2	2.8	5.4
Internet-connected or smart thermostat	17.6	25.7	17.6	23.7	17.9	26.3	17.6	16.3	12.4	10.1	10.1	10.3
Programmable thermostat	11.6	12.3	13.2	6.7	11.8	11.2	13.3	7.3	6.6	4.6	6.6	6.5
Main equipment replaced since 2000 (more than one may apply)												
Heating	10.1	6.8	7.3	8.6	10.1	8.4	7.8	8.0	5.9	3.8	4.4	7.1
Cooling	11.7	9.9	7.1	17.8	11.8	9.3	5.6	12.6	2.7	3.5	5.1	8.8
Water-heating equipment												
Centralized system	6.9	7.6	8.1	10.0	7.1	7.8	6.5	7.8	3.6	4.1	3.7	4.8
Distributed system	12.4	15.1	11.2	11.3	11.8	13.6	13.7	10.8	11.5	8.1	5.2	8.7
Combination of centralized and distributed systems	13.8	9.1	10.4	12.4	12.6	8.1	10.2	11.2	7.2	4.3	5.2	7.8
Generation technologies (more than one may apply)												
Reciprocating engine generators	7.0	9.7	6.7	17.7	9.3	8.7	7.4	16.1	6.4	5.4	4.4	7.5
Solar panels	24.2	20.0	22.4	18.2	24.7	19.4	27.1	15.9	7.0	11.7	14.1	8.1
Other generation technology	31.0	38.7	24.3	26.9	24.6	31.9	25.6	28.7	20.8	19.8	13.7	12.8
Lighting equipment types (more than one may apply)												
Incandescent	10.1	8.9	7.7	15.4	10.7	9.9	7.4	11.4	5.4	5.6	4.3	9.3
Standard fluorescent	6.3	7.1	6.6	8.4	8.5	8.0	6.4	7.7	4.9	3.2	3.4	5.5
Compact fluorescent	8.2	8.9	8.7	10.9	8.7	9.1	8.0	8.4	4.7	3.7	3.3	5.6
High-intensity discharge (HID)	9.9	14.4	10.6	26.1	10.7	12.5	13.1	19.2	6.8	5.1	7.7	13.3
Halogen	10.4	10.4	6.9	17.0	10.2	11.3	6.6	12.0	6.1	8.2	5.8	8.2
LED	5.8	6.4	6.3	8.6	7.4	6.6	5.7	6.9	4.1	4.1	3.0	4.8
Other	0.0	33.9	60.9	51.3	0.0	26.9	53.5	51.3	0.0	14.6	12.9	0.0
Refrigeration equipment (more than one may apply)												
Any refrigeration	5.4	6.4	6.2	8.5	7.8	7.0	5.8	7.4	4.5	3.7	3.4	4.2
Walk-in units	6.0	7.4	5.5	11.2	6.1	6.7	5.6	9.3	5.6	4.5	2.6	4.3
Cases or cabinets	7.6	7.3	6.2	12.4	7.2	8.3	5.8	11.3	5.8	5.0	3.3	4.8
Large cold storage areas	25.7	35.6	15.6	37.0	16.8	21.9	14.7	29.8	23.8	23.4	7.4	12.6
Commercial ice makers	6.9	6.8	7.4	10.0	7.0	6.4	6.4	9.6	4.4	3.7	3.5	5.4
Residential-type or compact units	5.4	6.9	6.4	8.9	8.2	7.3	6.3	7.7	5.5	3.2	4.1	4.7
Vending machines	6.1	6.2	8.0	11.9	7.8	7.3	6.8	10.8	5.1	3.3	4.1	5.3
No refrigeration	11.3	12.4	10.0	14.4	7.7	12.6	10.1	11.6	8.4	7.4	5.5	12.8

Relative standard errors (RSEs) for Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	RSEs for sum of major fuels consumption				RSEs for total floorspace of buildings				RSEs for energy intensity for sum of major fuels			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	5.8	6.5	6.1	7.7	7.2	7.4	6.1	7.1	3.7	3.6	3.1	5.0
Office equipment (more than one may apply)												
Desktop computers	5.6	6.4	6.2	7.7	7.2	6.9	5.6	7.1	4.3	3.2	3.5	4.3
With multiple monitors	6.5	5.9	7.6	11.2	7.9	6.4	6.1	10.3	5.3	3.1	3.7	4.8
Laptop computers	6.2	6.5	6.8	8.7	7.6	7.0	5.4	7.5	4.5	2.7	4.0	5.5
Dedicated servers	6.5	6.3	4.9	9.5	8.9	6.5	5.5	8.9	4.8	3.1	3.1	5.7
Tablets charged in building	6.7	7.2	7.8	9.9	7.7	7.1	5.8	8.5	4.4	3.8	3.4	5.3
Large floor-standing office devices ^c	6.2	5.6	6.9	10.3	7.6	6.0	5.4	9.1	4.5	2.4	4.0	5.2
Smaller desktop office devices ^c	5.4	7.0	6.1	8.3	7.0	7.8	5.8	7.4	4.6	3.7	3.0	4.4
Interactive whiteboards	8.7	10.1	9.4	24.2	8.1	8.0	8.1	15.1	7.4	5.6	3.8	12.0
Televisions or video displays	6.4	6.7	6.2	8.5	8.0	7.1	5.5	8.0	4.9	3.7	3.4	5.1
Point-of-sale devices or cash registers	7.2	7.6	5.9	11.9	7.7	7.4	5.1	10.8	5.7	4.1	2.5	4.6
Food preparation or serving areas in non-food service buildings (more than one may apply)												
Snack bar, concession stand, or coffee shop	13.4	11.2	9.7	21.1	12.7	12.3	11.7	15.9	6.9	4.6	5.0	8.4
Fast food or small restaurant	14.1	9.7	8.7	20.2	11.6	11.5	9.3	15.9	6.4	5.4	5.5	7.4
Cafeteria or large restaurant	7.1	8.0	7.0	25.2	7.0	7.5	7.2	19.1	4.9	5.0	3.9	9.1
Commercial kitchen or food preparation area	9.8	8.7	7.0	15.8	10.7	9.7	6.5	12.6	5.2	3.5	3.8	7.1
Small kitchen area	9.0	10.4	8.5	19.0	9.1	10.5	8.0	12.6	3.5	4.0	4.6	10.2
Separate computer areas (more than one may apply)												
Server closet	6.7	7.1	5.9	10.6	8.3	7.2	5.7	9.6	3.8	1.9	3.2	4.8
Data center	10.4	9.8	9.0	25.1	14.7	10.3	8.9	22.1	13.4	6.7	5.5	8.9
Computer-based training room	6.1	8.4	9.1	21.2	8.3	7.4	7.6	16.1	5.6	4.6	3.7	8.4
Student or public computer center	8.9	9.4	9.0	23.7	9.8	7.3	7.1	17.0	2.2	3.9	4.5	12.2
Window and interior lighting features (more than one may apply)												
Multipaned windows	5.9	6.4	6.7	9.3	7.0	7.1	6.5	8.1	4.5	3.4	3.1	4.9
Tinted window glass	8.5	8.1	5.9	9.5	8.3	7.3	6.1	8.4	4.3	3.5	3.6	5.9
Reflective window glass	11.7	11.7	10.8	15.3	9.9	11.3	9.2	12.2	9.2	4.8	4.4	8.0
External overhangs or awnings	10.5	7.5	7.4	12.2	12.0	9.5	7.7	10.3	8.1	5.5	2.7	6.2
Skylights or atriums	10.9	8.9	5.9	15.9	12.1	9.2	6.1	11.4	3.0	5.5	4.5	8.7
Light scheduling	9.5	9.1	8.5	11.4	9.7	8.8	6.8	9.5	5.2	4.8	3.7	6.0
Occupancy sensors	6.5	7.7	8.5	12.0	7.8	7.4	7.2	9.8	5.4	3.3	3.6	5.2
Multilevel lighting or dimming	11.7	9.2	17.9	20.5	12.0	10.3	13.0	15.2	6.8	6.5	7.5	8.1
Daylight harvesting	17.1	18.0	10.2	13.9	14.3	17.1	10.3	10.2	9.6	8.8	7.3	10.0
Plug-load control	24.1	41.6	18.4	30.2	25.1	26.0	20.5	21.2	12.0	26.6	13.8	19.9
Demand responsive lighting	29.3	30.0	23.6	21.9	28.1	36.6	24.4	24.7	13.0	14.8	8.6	18.2
Building automation system (BAS) for lighting	11.8	9.0	6.3	17.7	13.3	8.9	6.7	13.6	7.4	4.4	5.5	7.8

Relative standard errors (RSEs) for Table C5. Consumption and gross energy intensity by census region for sum of major fuels, 2018

	RSEs for sum of major fuels consumption				RSEs for total floorspace of buildings				RSEs for energy intensity for sum of major fuels			
	North-east	Mid-west	South	West	North-east	Mid-west	South	West	North-east	Mid-west	South	West
All buildings	5.8	6.5	6.1	7.7	7.2	7.4	6.1	7.1	3.7	3.6	3.1	5.0
Electric vehicle (EV) charging												
Charging stations associated with the building	19.0	15.8	14.0	19.5	17.4	16.7	11.9	12.6	10.3	10.3	5.9	9.6

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

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

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

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

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

