Release date: May 2016

2004 to 2007

2008 to 2012

31

28

31

36

Q

Q

14

10

Q

Q

1,962

1,988

2,176

2,011

Q

890

876

700

Q 15.8

Q 13.9

14.1

17.8

13.3

16.7

16.0

14.6

Q

Q

Table C20. Electricity consumption and conditional energy intensity by climate region, 2012

Total electricity Total floorspace of Electricity consumption buildings using electricity energy intensity (billion kWh) (million square feet) (kWh/square foot) Mixed Mixeddry/ Mixed-Verv Verv Verv drv/ cold/ Mixed cold/ Mixed-Hot-Hot-Marcold/ Mixeddry/ Hot-Mar-Hot-Hot-Mar-Cold humid dry humid humid Hot-dry Cold humid ine Cold humid ine dry humid ine All buildings 419 415 152 220 31,286 27,422 11,743 12,002 2,416 13.4 15.2 13.0 18.4 14.6 **Building floorspace (square feet)** 14.0 1,001 to 5,000 40 48 15 26 Q 2,712 2,545 958 1.096 Q 14.6 18.8 15.2 23.7 5,001 to 10,000 33 37 21 19 3 3,075 2,534 1,561 1,102 218 10.8 14.5 13.6 17.4 13.5 47 10,001 to 25,000 56 20 29 6 5,304 3,734 2,291 1,808 429 10.6 12.7 8.9 15.9 14.7 25,001 to 50,000 47 47 20 30 Q 4,311 3,163 1,922 1,900 375 10.9 14.9 10.6 15.8 11.1 72 4.960 4.817 12.9 50.001 to 100.000 65 17 33 5 1.480 1.943 403 14.5 13.4 11.5 16.9 100,001 to 200,000 62 25 4.241 4.214 265 14.7 25.8 59 36 1.666 1.975 14.1 14.9 18.4 3,445 200,001 to 500,000 59 29 17.0 11.3 65 24 4.287 1.328 1.265 327 15.2 18.0 22.7 Over 500,000 43 54 10 19 Q 2,396 2,970 536 912 Q 18.1 18.1 18.9 20.5 Q Principal building activity Education 43 51 11 27 0 4.739 4.426 1,075 1.878 Q 9.1 11.6 10.3 14.3 0 54.6 Food sales 25 18 Q 7 Q 540 326 Q 135 Q 45.8 55.7 Q Q Food service 23 34 11 13 Q 636 636 229 250 Q 35.8 52.7 47.4 51.8 Q Health care 39 32 12 22 2 1,754 1,218 398 686 100 22.3 26.1 29.8 32.0 22.9 23 25 Q 14 878 790 268 364 Q 26.7 31.2 37.3 37.5 Q Inpatient Q Outpatient 16 7 2 8 Q 876 427 130 322 Q 18.0 16.7 14.2 25.7 Q 31 1,999 1,929 836 917 Q Lodging 31 10 15 Q Q 15.4 16.1 12.3 16.9 67 28 44 17.1 22.2 18.0 Mercantile 62 6 3.911 3,444 1.652 1.979 335 17.9 17.1 1.977 20.5 Retail (other than mall) 27 Q 13.5 17.2 Q 22 12 19 Q 1,623 699 924 13.7 Enclosed and strip malls 40 39 16 25 Q 1,934 1,821 953 1,054 Q 20.7 21.6 17.1 23.7 Q Office 93 87 27 34 13 6,033 5,496 1,873 1,776 774 15.4 15.8 14.3 19.1 17.3 Public assembly 29 22 12 15 Q 2,351 1,479 834 622 Q 12.4 14.6 14.4 24.2 Q 5 Q 477 Q Q Q Public order and safety 10 Q Q 597 Q 9.7 17.2 Q Q 7 9 2 5 Q 1,623 1,698 461 674 Q 4.6 4.2 7.8 Q Religious worship 5.1 Service Q Q 14 14 4 4 1.924 1.503 580 429 7.1 9.5 9.1 0 7.4 Q 22 22 2.858 Q 6.3 4.9 11.5 Warehouse and storage 23 Q 3.910 3.584 2.023 5.7 14 Q Other 19 23 8 Q Q 763 677 249 Q Q 24.9 33.7 32.8 Q Vacant 3 2 Q Q Q 627 410 323 Q Q 4.5 3.7 Q Q Q Year constructed 15 14 Q Q Q 2.198 1,217 Q Q Q 6.9 11.6 Q Q Q Before 1920 1920 to 1945 23 26 8 7 Q 2,484 2,173 667 420 Q 9 4 11.8 11.4 15.6 Q 1946 to 1959 37 25 11 11 Q 3,066 2,407 964 577 Q 12.0 10.4 10.9 19.5 Q 1960 to 1969 47 55 24 17 4 4,095 3,375 1,490 931 306 15.9 18.7 12.5 11.4 16.4 59 26 3 4,055 1,497 232 19.1 17.2 13.1 1970 to 1979 64 18 3.099 1.674 15.8 11.0 1980 to 1989 62 67 26 69 9 4,277 4,365 2,228 3,208 712 14.6 15.4 11.5 21.4 13.2 73 40 1990 to 1999 69 23 4.769 4.288 2.200 344 15.3 18.4 21.6 1.518 16.2 15.3 39 33 25 Q 2000 to 2003 11 Q 2.392 2.313 952 1.376 16.2 14.3 11.7 18.1 Q

Table C20. Electricity consumption and conditional energy intensity by climate region, 2012

Total electricity Total floorspace of Electricity buildings using electricity consumption energy intensity (billion kWh) (million square feet) (kWh/square foot) Mixed Mixed Mixed-Verv Verv drv Verv drv/ cold/ Mixedcold/ Mixed Hot-Hot-Marcold/ Mixeddry/ Hot-Mar-Hot-Hot-Mar-Cold humid dry humid ine Cold humid Hot-dry humid ine Cold humid dry humid ine All buildings 419 415 152 220 31,286 27,422 11,743 12,002 2,416 13.4 15.2 13.0 18.4 14.6 Census region and division Northeast 142 79 N N N 10.283 5,008 N N N 13.8 15.7 Ν N N New England 51 Ν Ν Ν N 4.192 Ν N Ν Ν 12.1 Ν Ν Ν Ν Middle Atlantic 91 79 Ν Ν N 6,091 5,008 Ν N Ν 15.0 15.7 Ν Ν Ν Midwest 210 39 N 15,875 2,685 N N 13.3 14.5 N N Ν East North Central 158 Q Ν Ν Ν 11,506 Q Ν Ν Ν 13.7 Q Ν Ν Ν West North Central 53 22 12.1 Ν Ν Ν Ν 4.369 1.647 Ν Ν Ν 13.5 Ν Ν South Ν 298 219 19.729 1,495 8.9 Ν 13 Ν Ν 11,802 Ν Ν 15.1 18.6 South Atlantic Ν Ν 203 N 83 N Ν 13.073 4.534 N N 15.6 N 18.3 East South Central Ν 51 Ν 20 Ν Ν 3,761 N 1,063 Ν Ν 13.6 Ν 18.4 Ν West South Central Ν 44 13 116 Ν Ν 2,895 1,495 6,204 Ν Ν 15.0 8.9 18.7 Ν Ν 35 West 67 139 Q 5,128 Ν 10,248 Q 2.416 13.1 Ν 13.6 Q 14.6 Mountain 41 Ν 27 Ν Ν 3,318 Ν 1,494 Ν Ν 12.2 Ν 17.7 Ν Ν Pacific 26 Ν 113 Q 35 1,811 Ν 8.753 Q 2.416 14.6 Ν 12.9 Q 14.6 **Number of floors** One 158 171 77 126 14 11,779 11,970 6,521 6,855 927 13.4 14.3 11.8 18.4 14.9 Two 97 87 30 38 8,256 6,088 2,492 2,403 690 11.7 14.3 12.0 15.8 10.7 Three 55 36 8 9 Q 2,289 697 527 Q 12.3 Q 4.425 15.7 11.6 16.6 Four to nine 80 78 29 9 408 22.6 21.8 35 5.246 4,616 1,577 1,570 15.2 17.0 18.2 31 9 2,459 Q 19.6 17.6 Ten or more 43 12 Q 1,580 455 647 19.3 18.4 Q **Elevators and escalators** (more than one may apply) 197 188 12,793 10,758 3,953 1,081 15.4 17.5 17.0 19.8 16.9 Any elevators 57 78 18 3,357 Number of elevators One 59 50 11 23 5 4,935 3,460 1,052 1,322 351 11.9 14.3 10.0 17.6 13.0 74 27 Two to five 82 32 8 5.279 3.898 1.476 1.625 434 15.5 18.9 18.2 19.4 19.1 57 20 23 3,400 829 21.9 19.1 24.0 23.1 18.4 Six or more 65 5 2.578 1.006 296 Any escalators 26 25 6 8 Q 1.386 1,366 373 363 Q 18.5 18.0 15.4 22.5 Q Number of workers (main shift) 45 47 22 O 5.991 5.006 2.326 1.890 316 7.5 9.4 7.0 11.7 9.3 Fewer than 5 16 5 to 9 34 0 10.7 143 109 15 2 8.3 36 17 23 0 3.165 2.519 1.533 1.505 10 to 19 42 46 20 22 3 3.373 2.883 1.708 1.382 277 12.3 15.9 11.7 15.9 9.8 20 to 49 71 66 28 44 10 5,387 4,280 2,115 2,154 577 13.2 15.4 13.1 20.6 18.1 50 to 99 73 71 21 44 5 4,891 4,634 1,441 2,209 302 15.0 15.3 14.4 20.0 15.2 100 to 249 67 61 28 26 Q 4,203 3,744 1,554 1,211 Q 16.0 16.4 17.7 21.2 Q 87 88 23 9 20.3 20.2 23.7 250 or more 39 4.276 4.356 1.066 1.651 466 21.8 19.5 Weekly operating hours Fewer than 40 14 11 5 5 Q 2,642 2,065 987 752 Q 5.2 5.3 5.1 6.5 Q 40 to 48 11.5 2,295 9.0 8.8 9.9 48 45 26 31 5.297 5,072 2,614 459 13.5 49 to 60 86 82 23 38 9 7,407 6,958 2,419 2,845 796 11.7 11.8 9.6 13.4 11.1 86 78 20.6 61 to 84 34 45 6 6.188 4.682 2.305 2.189 437 13.9 16.7 14.7 14.6 85 to 167 75 66 22 30 4.080 2.679 1.278 1.045 282 18.5 24.6 17.0 28.4 25.3 110 7 Open continuously 134 43 72 5.672 5,966 2.140 2.876 339 19.4 22.4 20.0 25.0 21.4

Table C20. Electricity consumption and conditional energy intensity by climate region, 2012

	Total e consun (billion			Total floo buildings (million s	using ele	ectricity		Electricity energy intensity (kWh/square foot)							
	•		Mixed dry/ Hot- dry	Hot- humid	Mar- ine	Very cold/ Cold	Mixed- humid	Mixed- dry/ Hot-dry	Hot- humid	Mar- ine		Mixed- humid	Mixed- dry/ Hot- dry	Hot- humid	Mar- ine
All buildings	419	415	152	220	35	31,286	27,422	11,743	12,002	2,416	13.4	15.2	13.0	18.4	14.6
Ownership and occupancy															
Nongovernment owned	331	320	129	179	30	23,706	20,294	9,939	9,625	2,057	13.9	15.8	13.0	18.5	14.3
Owner occupied	154	141	56	95	10	11,942	9,021	4,072	4,592	693	12.9	15.6	13.7	20.7	14.3
Leased to tenant(s)	129	133	57	64	16	8,298	8,339	4,423	3,748	1,001	15.5	16.0	12.9	17.0	15.7
Owner occupied and leased	48		16	19	4	3,146	2,804	1,313	1,225	332	15.1	16.3	12.2	15.9	11.6
Unoccupied	1		Q	Q	Q	319	Q	Q	Q	Q	2.0	Q	Q	Q	Q
Government owned	 89	95	23	42	6	7,580	7,128	1,804	2,376	360	11.7	13.4	12.9	17.7	16.0
Federal	6		Q	Q	Q	402	996	Q	Q	Q	15.2	13.1	Q	Q	Q
State	31		7	12	Q	2,298	1,876	468	747	Q	13.5	15.2	15.7	15.7	Q
Local	52		15	28	4	4,880	4,256	1,270	1,534	213	10.6	12.7	11.8	18.0	16.8
Party responsible for operation and maintenance of energy systems															
Building owner	353	342	120	184	30	27,241	23,035	9,248	10,051	2,089	13.0	14.8	12.9	18.3	14.6
Business owner or tenant	58		30	29	4	3,457	3,513	2,321	1,542	301	16.7	17.2	13.0	19.1	14.3
Property management Other	3 5		Q Q	Q Q	Q N	259 330	572 302	Q Q	Q Q	Q N	12.0 15.7	15.0 15.9	Q Q	Q Q	Q N
Provider of direct input on energy- related equipment purchases															
Building owner	362		128	188	32	28,012	23,809	9,849	10,323	2,153	12.9	14.8	12.9	18.2	14.7
Business owner or tenant	45		23	24	3	2,511	2,566	1,686	1,163	236	17.8	18.4	13.4	20.9	14.1
Property management	3		Q	Q	Q	210	344	Q	Q	Q	16.3	13.4	Q	Q	Q
Other	9	12	Q	5	Q	553	703	Q	274	Q	15.9	17.4	Q	17.8	Q
Number of establishments															
One	258	265	100	136	18	20,588	17,572	7,534	7,562	1,229	12.5	15.1	13.3	18.0	14.7
2 to 5	100	71	26	44	8	6,741	5,626	2,299	2,427	663	14.8	12.5	11.3	18.2	12.8
6 to 10	22	25	7	13	Q	1,379	1,447	570	648	Q	15.7	17.4	11.7	20.0	Q
11 to 20	20	27	7	12	Q	1,206	1,289	470	629	Q	16.7	21.0	14.0	19.7	Q
More than 20	19		13	15	Q	1,017	1,280	690	666	Q	18.8	21.5	18.3	22.1	Q
Currently unoccupied	1	(*)	Q	Q	Q	356	209	Q	Q	Q	2.0	Q	Q	Q	Q
Predominant exterior wall material															
Brick, stone, or stucco	195		63	91	11	14,497	14,463	4,777	5,030	842	13.4	16.3	13.2	18.2	13.3
Concrete (block or poured)	98		42	75	13	6,675	6,071	3,177	3,732	749	14.6	15.5	13.4	20.2	17.4
Concrete panels	47		23	20	4	2,769	2,039	1,990	1,284	366	16.9	12.9	11.6	15.6	11.4
Siding or shingles	36		Q	6	2	2,973	1,219	799	409	165	12.0	12.5	15.5	14.8	13.2
Metal panels	26		5	20	Q	3,167	2,872	617	1,247	Q	8.2	9.2	8.7	16.3	Q
Window glass	11		Q	Q	Q	509	388	Q	Q	Q	21.5	27.9	Q		Q
Other No one major type	4		Q Q	Q Q	Q Q	371 325	Q Q	Q Q	Q Q	Q Q	11.1	Q Q	Q Q		Q Q
Predominant roof material															
Metal surfacing	47	61	16	41	Q	4,850	5,511	1,605	2,852	206	9.7	11.1	10.1	14.4	Q
Synthetic or rubber	192		37	53	9	12,621	7,768	2,254	2,320	651	15.2	17.0	16.2	22.9	13.2
Built-up	90		45	69	15	6,438	7,088	3,529	3,408	842	14.0	16.6	12.6	20.2	18.1
Slate or tile shingles	11		17	10	Q	1,077	1,283	1,138	549	Q	10.1	13.6	14.9	18.7	Q
Wooden materials (including			- -												
shingles) Asphalt, fiberglass, or	4	4	3	Q	Q	269	245	386	Q	Q	13.4	16.4	8.2	Q	Q
other shingles	67	67	26	33	4	5,381	4,661	2,219	2,028	390	12.4	14.3	11.8	16.3	9.5
Concrete	Q		5	10	Q	2,301 Q	480	343	595	Q	Q		15.9	17.3	Q
Other	Q		Q	Q	Q	Q	Q	Q	Q	Q N	Q		13.3 Q	Q	Q
No one major type	Q		Q	Q	Q	Q	Q	Q	Q Q	Q	Q		Q		Q

Table C20. Electricity consumption and conditional energy intensity by climate region, 2012

	Total el consum (billion	•				Total floo buildings (million s	using el	ectricity			Electricity energy intensity (kWh/square foot)					
	-	Mixed- humid	Mixed dry/ Hot- dry	Hot- humid	Mar- ine	Very cold/ Cold	Mixed- humid	Mixed- dry/ Hot-dry	Hot- humid	Mar- ine		Mixed- humid	Mixed dry/ Hot- dry	Hot- humid	Mar- ine	
All buildings	419	415	152	220	35	31,286	27,422	11,743	12,002	2,416	13.4	15.2	13.0	18.4	14.6	
Roof characteristics																
Roof tilt																
Flat	273	259	102	140	25	17,994	15,064	7,227	6,941	1,520	15.2	17.2	14.2	20.1	16.4	
Shallow pitch	89	106	39	57	8	7,415	8,052	3,373	3,555	624	11.9	13.2	11.4	16.1	12.2	
Steeper pitch	58	50	11	24	3	5,878	4,305	1,143	1,506	272	9.8	11.6	10.0	15.7	9.8	
Cool roof	98	101	49	66	11	6,506	6,074	2,961	3,231	607	15.1	16.6	16.5	20.6	17.6	
Renovations in buildings																
constructed before 2008																
(more than one may apply)																
Any type of renovation	244	216	56	112	21	17,122	13,851	4,137	5,438	1,364	14.2	15.6	13.5	20.6	15.3	
Addition or annex	90	70	12	30	Q	6,116	4,426	798	1,473	Q	14.7	15.8	14.7	20.7	Q	
Reduction in floorspace	8	20	Q	Q	Q	409	888	Q	Q	Q	19.3	22.8	Q	Q	Q	
Roof replacement	132	114	21	54	8	9,036	6,937	1,631	2,514	647	14.6	16.5	12.8	21.5	12.0	
Exterior wall replacement	23	25	8	13	Q	1,546	1,381	564	587	Q	14.7	18.0	13.7	21.8	Q	
Interior wall reconfiguration	140	113	30	58	15	9,326	6,512	2,151	2,407	854	15.1	17.4	14.0	24.0	17.4	
Window replacement	68	66	9	28	5	5,602	4,201	820	1,171	457	12.1	15.8	11.4	23.5	11.5	
HVAC equipment upgrade	164	148	33	76	12	11,030	8,981	2,268	3,601	768	14.8	16.5	14.5	21.1	16.2	
Lighting upgrade	158	134	37	69	12	10,970	8,087	2,519	3,062	777	14.4	16.6	14.7	22.4	15.0	
Electrical upgrade	102	94	19	41	10	7,061	5,165	1,324	2,019	519	14.4	18.1	14.0	20.3	18.4	
Plumbing system upgrade	87	78	20	31	7	5,876	4,613	1,347	1,523	447	14.7	16.9	14.6	20.5	15.1	
Insulation upgrade	51	42	9	20	Q	3,674	2,423	559	728	Q	13.9	17.2	16.8	27.1	Q	
Fire, safety, or security upgrade	107	99	22	44	11	7,235	5,608	1,550	2,122	648	14.8	17.6	14.0	20.7	16.8	
Structural upgrade	28	19	7	13	Q	1,734	1,091	464	440	Q	16.0	17.3	15.7	28.7	Q	
Other	3	Q	Q	Q	Q	272	Q	Q	Q	Q	11.6	Q	Q	Q	Q	
No renovations	148	164	82	98	14	12,176	11,560	6,717	5,863	988	12.1	14.2	12.2	16.7	14.0	
Buildings constructed 2008 or later	28	36	Q	10	Q	1,988	2,011	890	700	Q	13.9	17.8	16.7	14.6	Q	
Energy sources (more than one may apply)																
Electricity	419	415	152	220	35	31,286	27,422	11,743	12,002	2,416	13.4	15.2	13.0	18.4	14.6	
Natural gas	344	302	113	113	31	24,511	19,361	7,520	5,300	2,033	14.0	15.6	15.1	21.3	15.1	
Fuel oil	139	134	32	63	13	8,008	7,287	1,605	2,597	703	17.4	18.4	20.1	24.1	19.1	
District heat	33	51	Q	8	Q	1,926	3,012	Q	374	Q	16.9	17.0	17.6	22.0	Q	
District chilled water	23	38	10	14	Q	1,227	2,027	Q	752	Q	18.9	18.7	16.9	18.9	Q	
Propane	52	24	9	25	Q	3,574	2,183	842	998	Q	14.5	11.1	10.1	25.0	Q	
Other	21	14	9	Q	Q	1,986	1,017	496	Q	Q	10.4	13.4	18.0	Q	Q	
Space-heating energy sources																
Electricity	231	274	92	157	19	15,252	17,288	6,815	8,300	1,374	15.1	15.9	13.5	18.9	14.2	
Electricity main	80	159	59	132	9	4,771	9,282	4,600	6,969	583	16.8	17.1	12.9	19.0	15.2	
Electricity secondary	151	116	33	25	11	10,481	8,006	2,215	1,331	792	14.4	14.4	14.9	18.6	13.4	
Other excluding electricity	185	136	53	35	15	15,192	9,428	3,669	1,790	944	12.2	14.5	14.5	19.3	15.5	
Buildings without heating	3	5	7	29	Q	842	706	1,259	1,912	Q	4.1	7.0	5.6	15.0	Q	
Primary space-heating																
energy source		450		122		4 774	0.303	4.000	C 000	F02	100	17.4	13.0	10.0	15.2	
Electricity	80	159	59	132	9	4,771	9,282		6,969	583	16.8	17.1	12.9	19.0	15.2	
Natural gas	275	187	77	50	23	20,554	12,884	5,252	2,710	1,588	13.4	14.5	14.6	18.5	14.4	
Fuel oil	15	8	N	N	N	1,623	919	N	N 262	N	9.5	9.0	N	N	N	
District heat	32		Q	8	Q	1,884	2,916		362	Q		17.2	17.6	22.4	Q	
Propane	10		Q	Q	N	1,096	658		Q	N	8.8	9.4	Q	Q	N	
Other	4	Q	N	N	N	516	Q	N	N	N	8.0	Q	N	N	N	

Table C20. Electricity consumption and conditional energy intensity by climate region, 2012

Total electricity Total floorspace of Electricity buildings using electricity energy intensity consumption (billion kWh) (million square feet) (kWh/square foot) Mived Mixed Verv Mixed-Verv Verv drv/ drv/ cold/ Mixed-Hotcold/ Marcold/ Mixed Hot-Mixeddry/ Hot-Hot-Hot-Mar-Cold humid dry humid ine Cold humid Hot-dry humid ine Cold humid dry humid ine All buildings 419 415 152 220 31,286 27,422 11,743 12,002 2,416 13.4 15.2 13.0 18.4 14.6 Cooling energy sources Electricity 391 385 143 208 31 27.377 24.968 10.490 11.043 2,157 14.3 15.4 13.7 18.9 14.4 Other excluding electricity 15 25 Q 10 Q 851 1.397 0 581 0 17.1 17.8 15.2 18.0 0 **Buildings** without cooling 13 6 3 2 Q 3,058 1,057 856 378 226 4.4 5.7 3.5 4.1 15.8 Water-heating energy sources 189 219 7/ 149 13.252 14.954 7.690 14.2 14.7 13.0 19.4 15.1 Electricity 18 5.678 1.180 Other excluding electricity 224 188 71 61 16 16.314 10,818 4.907 3,147 1.075 13.7 17.3 14.6 19.4 15.0 Buildings without water heating 6 9 7 10 Q 1,720 1,650 1,158 1,165 Q 3.7 5.2 6.1 8.6 Q **Cooking energy sources** Electricity 159 156 77 9.761 9.042 2.299 3.437 612 16.3 17.3 20.6 22.5 21.2 47 13 Other excluding electricity 81 90 34 35 7 5.214 4,428 1.730 1,660 363 15.6 20.2 19.4 21.4 18.7 **Buildings** without cooking 178 169 71 108 15 16,311 13,952 7,714 6,904 1,441 10.9 12.1 9.3 15.6 10.7 **Energy end uses** (more than one may apply) Buildings with space heating 416 411 145 192 34 30,444 26,716 10,484 10,090 2,319 13.7 15.4 13.9 19.0 14.7 406 410 32 28.228 Buildings with cooling 149 219 26.365 10.887 11,624 2.190 14.4 15.5 13.7 18.8 14.5 407 Buildings with water heating 413 145 210 34 29.567 25,772 10,585 10,837 2,255 14.0 15.8 13.7 19.4 15.0 Buildings with cooking 241 246 81 113 20 14,975 13,469 4,029 5,098 975 16.1 18.3 20.1 22.1 20.3 **Buildings with manufacturing** 25 13 6 19 Q 2,133 1,273 786 684 Q 11.7 10.3 8.2 28.4 Q Buildings with electricity 179 73 generation 172 49 17 10.597 8.525 2.471 3.168 880 16.9 20.1 20.0 23.1 19.7 Percent of floorspace heated Not heated 3 5 7 29 Q 842 706 1,259 1,912 Q 4.1 7.0 5.6 15.0 Q 1 to 50 19 24 28 21 5 2.299 2.485 1.752 414 8.4 9.7 8.8 12.3 12.6 3.165 5,425 51 to 99 58 81 39 47 8 4.045 2,434 2.146 595 14.3 15.0 16.2 22.1 12.7 100 339 305 78 123 21 24,099 18,806 4,885 6,193 1,310 14.1 16.2 16.0 19.8 16.3 Percent of floorspace cooled 13 6 2 3.058 1.057 856 378 226 4.4 5.7 15.8 Not cooled 3 O 3.5 4.1 2,191 8 6 1 to 50 65 39 25 19 0 7.561 5,220 3,505 415 7 4 7 1 ጸ ጸ 12 4 135 140 785 16.7 20.2 51 to 99 45 52 10 8.314 8.333 2.734 2.562 16.2 16.6 12.6 100 206 231 79 148 17 12,354 12,812 4,648 6,871 990 16.7 18.1 17.0 21.5 16.8 Percent lit when open Q Q Q Q Q Q Q Q Q Q Q Q Q Zero Q Q 3,702 9.7 77 1 to 50 41 36 14 20 3 4.637 2.225 1.689 377 8.9 6.4 11.6 51 to 99 188 168 67 86 16 13,284 10,873 4,849 4,790 1,018 14.2 15.5 13.9 18.0 15.2 188 210 70 114 17 12,498 12,453 4,432 5,359 984 15.0 16.9 15.8 21.3 17.1 Building never open/electricity not used 2 1 Q Q Q 727 315 Q Q Q 2.5 1.6 Q Q Q Percent lit during off hours Zero 83 66 37 36 9 9.716 6.918 4.237 3.080 796 8.5 9.6 8.8 11.8 11.3 1,397 1 to 50 268 263 85 146 23 18.723 17,279 6,139 7,216 14.3 15.2 13.8 20.2 16.6 51 to 100 24 52 62 24 Q 2.252 2,373 1.009 1.102 Q 23.1 26.2 23.5 22.2 Q Building always open with no "off hours" 17 24 7 Q 595 852 359 604 Q 28.0 28.4 18.7 23.3 Q 14 Electricity not used Ν Ν Ν Ν Ν Ν Ν Ν Ν Ν Ν N Ν Ν Ν

Table C20. Electricity consumption and conditional energy intensity by climate region, 2012

	Total el consum (billion	•				Total floo buildings (million s	using el	ectricity							
	Very	Mixed-	Mixed dry/ Hot-	Hot-	Mar-	Very cold/	Mixed-	Mixed- dry/	Hot-	Mar-	Very	Mixed-	Mixed- dry/ Hot-	Hot-	Mar-
	Cold	humid	dry	humid	ine	Cold	humid	Hot-dry	humid	ine	Cold	humid	dry	humid	ine
All buildings	419	415	152	220	35	31,286	27,422	11,743	12,002	2,416	13.4	15.2	13.0	18.4	14.6
Heating equipment (more than one may apply)															
Heat pumps	31	92	22	29	6	2,150	6,182	1,669	1,387	458	14.6	14.8	12.9	21.1	12.5
Furnaces	39	43	11	12	Q	3,558	3,009	995	937	Q	10.9	14.3	11.2	12.4	Q
Individual space heaters	130	81	21	29	10	10,112	6,697	1,703	1,607	631	12.9	12.1	12.3	18.1	15.6
District heat	33	51	Q	8	Q	1,926	3,002	Q	362	Q	16.9	17.0	17.6	22.4	Q
Boilers	158	114	36	32	9	11,551	7,029	1,777	1,499	581	13.7	16.3	20.1	21.3	16.2
Packaged heating units	255	250	104	140	22	17,640	15,485	7,351	7,217	1,495	14.5	16.1	14.2	19.4	14.6
Other	18	12	Q	Q	Q	819	487	Q	Q	Q	22.1	23.7	Q	Q	Q
Cooling equipment															
(more than one may apply)															
Residential-type central air															
conditioners	62	59	29	34	Q	5,468	4,620	2,250	2,319	Q	11.4	12.9	13.1	14.6	Q
Heat pumps	36	94	22	29	8	2,457	6,173	1,876	1,451	581	14.5	15.2	11.6	20.1	14.5
Individual air conditioners	63	62	12	20	3	5,046	4,683	1,025	1,344	322	12.5	13.1	11.5	15.0	10.5
District chilled water	23	38	10	14	Q	1,227	2,027	Q	752	Q	18.9	18.7	16.9	18.9	Q
Central chillers	117	117	28	55	11	6,757	5,913	1,348	2,474	549	17.3	19.8	21.1	22.1	20.8
Packaged air conditioning units	248	238	90	133	18	16,452	14,627	6,306	6,449	1,318	15.1	16.3	14.3	20.6	13.5
Swamp coolers	9	Q	10	Q	Q	680	Q		Q Q	Q	13.5	Q	14.2	Q	Q
Other	Q		Q	Q	<u>Q</u>	Q	Q		Q	Q		Q	Q	Q	Q
1990 (more than one may apply) Heating Cooling	141 153	133 156	42 46	62 81	10 10	10,930 11,402	8,958 10,471	3,528 3,633	3,255 4,345	887 850	12.9 13.4	14.9 14.9	11.8 12.7	19.1 18.5	11.0 11.7
Water-heating equipment															
Centralized system	260	251	85	117	15	18,894	15,231	6,259	5,983	1,168	13.8	16.5	13.6	19.5	12.4
Distributed system	48	45	25	37	3	4,184	3,619	2,221	2,298	366	11.4	12.4	11.4	16.0	9.4
Combination of centralized and						4,104	3,019	2,221	2,230	300	11.4	12.4	11.4	10.0	5.4
distributed system	105	111	35	57	16	6,489	6,922	2,105	2,556	721	16.2	16.0	16.5	22.3	22.0
Lighting equipment types (more than one may apply)															
Incandescent	221	216	63	97	15	14,837	13,429	4,139	4,769	1,232	14.9	16.1	15.2	20.3	12.2
Standard fluorescent	406	404	146	207	34	29,315	26,407	11,018	11,096	2,246	13.9	15.3	13.3	18.7	14.9
Compact fluorescent	313	297	103	149	27	20,485	17,410	6,692	7,285	1,944	15.3	17.1	15.4	20.5	13.8
High-intensity discharge (HID)	139	142	35	60	7	8,734	8,547	2,661	3,035	420	15.9	16.6	13.0	19.7	16.5
Halogen	162	166	52	83	15	10,366	9,391	3,257	4,152	893	15.6	17.6	16.1	20.1	16.8
LED	164	134	40	66	11	9,156	6,936	2,514	2,733	732	17.9	19.2	16.1	24.0	15.4
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Refrigeration equipment (more than one may apply)															
Any refrigeration	390	390	137	202	32	27,633	24,268	9,429	10,299	2,015	14.1	16.1	14.5	19.6	15.7
Walk-in units	207	220	64	100	16	10,742	10,079		3,922	775	19.3	21.8	22.4	25.4	21.1
Cases or cabinets	206	202	70	88	17	11,215	9,694	3,232	3,856	722	18.4	20.8	21.6	22.8	23.4
Large cold storage areas	32	33	13	17	<u>-</u> -	1,531	1,297	554	701	Q		25.6	23.6	24.1	Q
Commercial ice makers	213	234	67	119	20	11,045	12,168		5,199	881	19.3	19.2	19.5	23.0	22.2
Residential-type or compact units	322	304	108	149	28	23,817	20,411		8,180	1,762	13.5	14.9	13.2	18.2	15.9
Vending machines	259	252	81	129	21	16,400	15,132		6,115	1,157	15.8	16.7	15.7	21.1	18.4
No refrigeration	30		15	19	4	3,653	3,153	2,314	1,703	401	8.1	8.2	6.7	10.9	9.0
								-,514				0.2			

Table C20. Electricity consumption and conditional energy intensity by climate region, 2012

Total electricity Total floorspace of Electricity buildings using electricity consumption energy intensity (billion kWh) (million square feet) (kWh/square foot) Mived Mixed Mixed-Verv Verv drv Verv drv/ cold/ Mixedcold/ Mixed Hot-Hot-Marcold/ Mixeddry/ Hot-Mar-Hot-Hot-Mar-Cold humid dry humid ine Cold humid Hot-dry humid ine Cold humid dry humid ine All buildings 419 415 152 220 31,286 27,422 11,743 12,002 2,416 13.4 15.2 13.0 18.4 14.6 Office equipment (more than one may apply) 395 397 143 209 33 28,233 25,161 10,487 10,929 2,252 14.0 15.8 13.7 19.1 14.8 Desktop computers With flat screen monitors 391 391 143 207 33 27 828 24 907 10 407 10.799 2 220 14 1 15 7 137 192 15.0 66 10,043 15.4 With multiple monitors 174 176 90 18 11.074 4,291 4,365 1.173 15.7 17.5 20.6 15.2 Laptop computers 330 325 112 173 28 23,554 21,132 8,003 8,961 1,836 14.0 15.4 14.0 19.3 15.0 **Dedicated servers** 294 292 109 148 26 19,394 17,637 7,303 7,388 1,648 15.2 16.5 14.9 20.0 16.0 297 105 144 24 17,516 7,492 Laser printers 287 20.318 7.372 1,558 14.6 16.4 14.2 19.3 15.1 Inkjet printers 172 179 65 93 15 13,171 12,084 4,887 5,087 1,006 13.1 14.8 13.3 18.3 14.5 FAX machines 350 354 111 185 30 24,671 22,169 8,441 9,504 1,897 14.2 16.0 19.5 15.8 13.1 320 301 105 156 27 22,559 19,141 **Photocopiers** 7,727 8,118 1,732 14.2 15.7 13.6 19.2 15.9 Number of desktop computers None 25 18 9 12 Q 3,053 2,260 1,255 1,073 164 8.0 8.1 7.2 10.9 11.4 1 to 4 62 76 26 37 Δ 5,646 5,258 2,339 2,070 355 11.0 14.4 17.7 12.6 11.1 5 to 9 44 44 24 6 3.424 2.748 1.332 396 12.7 16.1 10.0 18.3 15.5 15 1.522 46 1,707 35 22 22 Q 3.387 2,625 1.369 300 13.6 13.2 12 7 16.0 15.8 10 to 19 20 to 49 67 66 25 49 Δ 4,627 4,189 1,675 2,254 349 14.4 15.7 14.8 21.8 10.8 50 to 99 44 33 18 24 Q 3,047 2,542 1,181 1,371 Q 14.5 12.8 15.0 17.2 Q 3,474 100 to 249 62 61 12 20 5 4,104 785 1,041 324 15.1 17.5 15.8 19.1 15.1 70 250 or more 83 26 33 8 3,998 4,326 1,278 1,491 384 17.6 19.2 20.0 22.3 20.4 **Number of laptop computers** 89 90 40 48 7,732 6,290 3,739 3,041 580 11.5 14.3 10.8 15.7 13.2 None 8 88 8,025 1 to 4 88 34 54 9 6,735 3.030 2,736 636 11.0 13.0 11.3 19.7 13.7 5 to 9 38 44 15 28 Q 2,577 2,712 1,332 1,555 Q 14.9 16.1 11.2 18.0 Q 10 to 19 41 42 25 19 0 2,950 2.525 1.426 1,289 Q 14.0 16.8 17.7 14.9 Q 27 20 to 49 60 45 17 5 3.880 2.992 925 1.505 341 15.6 15.1 17.9 17.7 15.4 33 25 9 17 0 710 Q 15.4 14.1 16.8 24.2 0 50 to 99 2.116 1.753 511 100 to 249 30 39 Q 10 4 1.978 1.979 Q 508 234 14.9 19.5 15.1 19.8 18.1 250 or more 40 43 5 17 Q 2,028 2,436 261 657 Q 19.8 17.8 18.3 26.4 Q Number of dedicated servers None 125 124 43 73 9 11 892 9.785 4 440 4.614 768 10.5 126 98 15.8 11.7 1 to 4 164 171 62 88 11 12.362 11.333 4.780 4.808 814 13.3 15.1 13.0 18.4 13.7 5 to 9 38 28 15 17 Q 2,387 1,795 1,008 872 Q 16.0 15.6 15.0 19.1 Q 10 to 19 41 34 10 20 Q 2,098 1,914 506 901 Q 19.6 18.0 19.3 22.4 Q 20 to 49 26 23 6 13 Q 1,509 1,172 418 530 Q 16.9 19.3 14.9 25.3 Q 25 36 9 1,039 1,422 277 23.8 27.2 33.1 27.3 50 or more 16 6 591 234 25.0 **Number of photocopiers** 99 115 48 65 8 8,727 8,281 4,016 3,884 684 11.4 13.9 11.9 16.7 11.4 One 78 63 30 36 8 6,535 4,855 2.974 2,181 535 11.9 13.0 10.1 16.3 14.8 2 to 4 103 87 33 63 8,011 6.177 2,444 3.211 469 12.8 14.1 13.5 19.6 14.2 52 21 Q Q 5 to 9 54 14 Q 3.691 2.880 932 1.146 14.7 18.0 14.6 18.0 10 or more 85 99 28 37 9 4,322 5,230 1,377 1,579 514 19.6 18.9 20.3 23.2 17.3

Table C20. Electricity consumption and conditional energy intensity by climate region, 2012

Total electricity Total floorspace of Electricity buildings using electricity consumption energy intensity (billion kWh) (million square feet) (kWh/square foot) Mived Mixed Mixed-Verv Verv drv Verv drv/ cold/ Mixedcold/ Mixed Hot-Hot-Marcold/ Mixeddry/ Hot-Mar-Hot-Hot-Mar-Cold humid dry humid ine Cold humid Hot-dry humid ine Cold humid dry humid ine All buildings 419 415 152 220 31,286 27,422 11,743 12,002 2,416 13.4 15.2 13.0 18.4 14.6 Number of TVs or video displays None 83 68 27 38 8 8.419 6.505 3.634 2.888 669 9.9 10.4 7.5 13.0 11.7 One 43 41 14 19 Q 3.519 3.628 1.380 1.241 223 12.3 11.2 9.8 15.2 19.0 2 to 4 78 75 24 52 7 6,455 4,739 1,934 2,811 527 12.1 15.8 12.6 18.4 12.7 5 to 9 51 44 21 30 Q 3,076 2,532 1,031 1,266 Q 16.5 17.3 20.5 23.9 Q 10 to 19 49 53 14 27 Q 2,949 2,763 923 1,269 Q 16.5 19.0 15.0 21.5 Q 42 49 22 22 2.778 1.200 1.066 Q 17.7 20.7 Q 20 to 49 Q 2.788 15.0 18.7 50 to 99 24 29 0 10 1.507 Q 504 Q 20.4 0 0 1.479 16.1 19.4 15.8 49 957 100 or more 57 17 22 3 2.601 2.970 815 203 19.0 19.4 20.6 23.2 15.5 Food preparation or serving areas in non-food service buildings (more than one may apply) 68 65 20 31 6 3.820 3.535 914 1.321 294 17.9 18.3 22.1 23.6 21.4 Snack bar or concession stand Fast food or small restaurant 70 69 29 48 2.893 1.867 345 21.5 20.7 25.7 21.5 3.257 1.425 23.9 Cafeteria or large restaurant 88 104 24 37 6 5,691 6,145 1,161 1,894 331 15.5 17.0 21.0 19.8 19.4 Commercial kitchen/ 105 30 food preparation area 104 45 6.504 5.737 1.478 2.066 365 16.0 18.4 20.3 21.7 8 21.8 38 18.9 76 64 20 286 15.2 Small kitchen area 5 5.783 4.646 1.313 2.027 13.1 13.8 17.2 Separate computer areas (more than one may apply) Data center or server farm 86 79 33 30 11 4,065 3,890 1,414 1,230 505 21.3 20.3 23.1 24.1 21.6 100 100 37 57 Computer-based training room 6 6,406 6,036 2,207 2,756 318 15.5 16.6 16.6 20.7 19.8 Student or public computer center 71 75 22 33 Q 5,892 5,069 1,359 1,892 Q 12.1 14.7 16.3 17.3 Q **HVAC** conservation features (more than one may apply) 54 9,729 3,821 2,347 1,305 16.6 18.2 16.4 22.9 15.5 Economizer cycle 225 177 63 20 13.546 Regular HVAC maintenance 381 367 132 199 30 25,864 22,200 9,200 10,031 1,949 14.7 16.5 14.3 19.8 15.2 Building automation system (BAS)² 238 217 78 116 22 14,019 11,822 4,473 5,501 1,235 17.0 18.3 17.4 21.0 17.5 Window and interior lighting features (more than one may apply) 6,632 355 25.363 20.416 5.878 1.440 1/1 0 15 9 1/1 7 21.2 16.6 Multipaned windows 325 86 141 24 Tinted window glass 224 230 94 145 26 14.273 14,413 7,170 6,933 1,611 15.7 15.9 13.1 20.9 15.9 Reflective window glass 105 89 42 54 9 6,088 4,283 2,554 2,412 500 17.3 20.9 16.6 22.5 18.4 External overhangs or awnings 167 189 66 107 21 10.662 10,362 4.492 5,386 1,160 15.7 18.2 14.7 19.8 17.9 Skylights or atriums 109 113 42 55 7.645 7,033 3.687 2,770 941 14.3 16.0 11.3 20.0 13.4 13 94 Light scheduling 193 164 69 21 11.334 8.922 4.291 4.597 1.119 17.1 18.4 16.0 20.3 18.8 226 22.6 Occupancy sensors 186 66 106 24 14.604 10.406 4.733 4.672 1.456 15.5 17.9 13.9 16.8 Multi-level lighting or dimming 96 90 36 41 9 5.507 4.562 1.887 2.006 571 17.5 19.6 19.2 20.4 16.3 Daylight harvesting 43 27 16 18 4 2,472 1,596 891 918 237 17.6 16.8 18.5 19.7 16.8 Demand responsive lighting 22 27 16 14 1,402 1,379 1,167 693 Q 15.4 19.4 13.3 19.7 Q Q Building automation system (BAS) for 477 lighting 91 66 31 41 4.581 3,376 1,711 1.922 19.8 19.4 17.9 21.4 23.2 11 Equipment usage reduced when building not in full use (more than one may apply) 319 297 113 138 26 24,165 21,130 8,546 7,448 1,858 13.2 14.0 13.2 18.5 14.0 Heating 310 292 114 162 24 22.653 20.659 8.665 8.847 1.692 13.7 14.1 13.2 18.3 14.4 Cooling Lighting 388 375 138 201 34 29,198 25,547 10,596 10,933 2,319 13.3 14.7 13.1 18.4 14.7

Table C20. Electricity consumption and conditional energy intensity by climate region, 2012

	Total el consum (billion	•				Total floo buildings (million s	using el	ectricity		Electricity energy intensity (kWh/square foot)					
	Very cold/ Cold		Mixed dry/ Hot- dry		Mar- ine	Very cold/ Cold	Mixed- humid	Mixed- dry/ Hot-dry	Hot- humid	Mar- ine	•	Mixed- humid	Mixed dry/ Hot- dry	Hot- humid	Mar- ine
All buildings	419	415	152	220	35	31,286	27,422	11,743	12,002	2,416	13.4	15.2	13.0	18.4	14.6
Annual consumption (kilowatthours)															
10,000 or less	2	1	1	(*)	Q	1,444	900	478	161	Q	1.3	1.4	1.2	1.7	Q
10,001 to 50,000	18	15	9	6	Q	4,191	3,106	1,911	1,128	166	4.3	4.9	4.9	5.4	7.6
50,001 to 100,000	22	19	9	11	Q	2,661	2,024	1,506	1,205	Q	8.2	9.2	6.2	8.8	Q
100,001 to 500,000	95	93	37	49	9	7,644	6,936	3,032	2,879	823	12.4	13.4	12.2	16.9	11.3
500,001 to 1,000,000	54	57	17	34	Q	3,574	3,340	1,235	1,723	Q	15.0	17.0	13.8	20.0	Q
1,000,001 to 5,000,000	137	120	46	65	11	8,125	6,552	2,323	3,124	616	16.9	18.4	19.6	20.7	18.0
Over 5,000,000	92	111	34	56	9	3,648	4,564	1,258	1,783	326	25.1	24.2	26.8	31.2	27.2

¹These climate regions were created by the Building America program, sponsored by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE).

Notes: • Because of rounding, data may not sum to totals. • See the *Guide to the 2012 CBECS Detailed Tables* or *CBECS Terminology* for definitions of terms used in these tables and/or comparison of differences with prior CBECS tables. Both references can be accessed from http://www.eia.gov/consumption/commercial/data/2012/ • Site electricity is the amount of electricity delivered to commercial buildings. Primary electricity, which is not included in the *Total of major fuels* category, is site electricity plus the conversion losses in the generation, transmission, and distribution processes. • Statistics for the *Energy end uses* category represent total consumption in buildings that have the end use, not consumption specifically for that particular end use. • HVAC = Heating, ventilation, and air conditioning.

Source: U.S. Energy Information Administration, Office of Energy Consumption and Efficiency Statistics, Forms EIA-871A and E of the 2012 Commercial Buildings Energy Consumption Survey.

²In earlier CBECS publications, BAS was referred to as *Energy Management and Control System (EMCS)*.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 20 buildings were sampled.

N = No cases in reporting sample.

^{(*) =} Value rounds to zero in the units displayed.