Table C19. Electricity consumption and conditional energy intensity by census division (part 3), 2018

Electricity

Total electricity

	-	Total electricity consumption (billion kilowatthours [kWh]) Total floorspace of buildings using electricit (million square feet)					energy intensity (kWh/square foot)				
	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific		
All buildings	156	95	137	11,349	7,411	11,781	13.7	12.8	11.7		
Building floorspace (square feet)											
1,001 to 5,000	17	8	12	933	480	1,046	18.5	16.6	11.8		
5,001 to 10,000	17	10	15	1,307	833	1,395	13.0	12.2	10.8		
10,001 to 25,000	21	12	21	2,006	1,316	1,972	10.2	9.1	10.5		
25,001 to 50,000	18	14	22	1,650	1,099	1,937	11.1	12.4	11.6		
50,001 to 100,000	27	16	17	2,193	1,223	1,630	12.3	12.7	10.4		
100,001 to 200,000	20	17	19	1,333	1,158	1,425	15.2	14.6	13.7		
200,001 to 500,000	21	8	22	1,265	632	1,483	16.3	13.4	15.0		
Over 500,000	15	Q	8	662	Q	892	22.2	15.5	9.3		
Principal building activity											
Education	18	8	13	1,800	895	1,379	10.2	8.9	9.1		
Food sales	Q		Q	Q	Q	Q	Q		Q		
Food service	10	8	7	193	210	194	49.2	38.9	34.6		
Health care	9	8	14	355	404	586	26.2	19.2	24.3		
Inpatient	7	Q	9	237	Q	302	29.8	Q	29.6		
Outpatient	Q	3	5	Q	243	284	Q	12.6	18.7		
Lodging	10	11	12	756	827	902	13.2	13.3	13.1		
Mercantile	28	18	21	1,598	1,125	1,174	17.7	16.4	18.0		
Retail (other than mall)	11	7	5	671	563	380	16.0	13.0	13.1		
Enclosed and strip malls	18	11	16	927	562	795	19.0	19.8	20.3		
Office	26	17	26	1,905	1,358	2,069	13.7	12.2	12.7		
Public assembly	13	6	8	893	570	915	15.0	10.6	8.7		
Public order and safety	Q	Q	2	Q	Q	162	Q	Q	12.4		
Religious worship	4	Q	2	619	Q	530	6.2	Q	4.3		
Service	5	3	5	619	462	605	7.6	7.4	7.7		
Warehouse and storage	14	5	15	1,891	857	2,847	7.4	5.9	5.3		
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q		
Vacant	Q	Q	Q	Q	Q	Q	Q	Q	Q		
Year constructed											
Before 1920	Q	Q	Q	Q	Q	Q	Q	Q	Q		
1920 to 1945	6	2	9	451	224	667	13.1	Q	13.6		
1946 to 1959	8	3	7	632	390	812	12.9	8.0	8.4		
1960 to 1969	14	5	15	1,088	450	1,300	12.9	11.5	11.7		
1970 to 1979	19	10	17	1,355	1,047	1,538	13.9	9.8	11.0		
1980 to 1989	24	17	22	1,879	1,276	1,965	12.7	13.5	11.4		
1990 to 1999	21	16	23	1,855	1,242	1,974	11.2	12.5	11.5		
2000 to 2009	37	22	26	2,326	1,522	1,894	16.1	14.4	13.8		
2010 to 2018	25	14	17	1,588	1,010	1,491	15.6	14.3	11.5		
Climate zone ^a											
Cold or very cold	N	Q	Q	N	Q	Q	N	11.8	10.6		
Cool	N	40	Q	N	3,077	1,323	N	12.9	13.8		
Mixed mild	Q		25	Q	Q	2,346	12.1	12.3	10.7		
Warm	52	Q	81	3,722	Q	6,878	13.9	8.8	11.7		
Hot or very hot	84	25	Q	5,966	1,614	Q	14.1	15.4	11.2		
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Table C19. Electricity consumption and conditional energy intensity by census division (part 3), 2018

Electricity

Total electricity

consumption buildings using electricity energy intensity (kWh/square foot) (billion kilowatthours [kWh]) (million square feet) West West West South South South Central Mountain **Pacific** Central Mountain **Pacific** Central Mountain **Pacific** All buildings 156 95 137 11,349 7,411 11,781 13.7 12.8 11.7 **Number of floors** 89 45 63 6,630 3,627 5,777 13.5 12.5 10.8 2 27 19 30 2,406 1,689 2,780 11.1 11.3 10.7 3 7 8 9.7 12 810 592 822 14.6 11.3 4 to 9 21 11 29 1,141 813 1,830 18.0 13.8 16.0 7 Q 8 Q 573 19.8 18.4 13.5 10 or more 362 **Elevators and escalators** (more than one may apply) 51 40 57 3,381 2,877 4,004 15.2 14.0 14.2 Any elevators 1 elevator 14 11 14 1,246 1,069 1,312 11.6 10.0 10.6 22 25 1,477 1,006 17.1 16.5 2 to 5 elevators 17 1,521 14.9 15 Q 1,172 15.3 15.3 6 or more elevators 18 658 Q 22.6 7 Any escalators Q 4 351 Q 286 20.9 Q 13.7 Number of workers (main shift) 7.6 23 9 7.6 Fewer than 5 18 2,347 1,183 2,437 9.6 7 5 to 9 20 14 1,364 722 1,407 14.9 9.8 9.7 10 to 19 20 11 18 1,534 983 1,438 13.2 11.4 12.8 20 to 49 25 23 23 17.3 10.8 1,999 1,319 2,151 12.4 50 to 99 19 21 15 1,545 1,174 1,468 13.5 12.8 13.2 21 100 to 249 21 13 1,377 869 1,345 15.3 14.6 15.2 250 or more 26 17 24 1,182 1,161 1,534 22.0 14.7 15.5 Weekly operating hours 10 1,136 431 1,478 Fewer than 40 3 10 8.6 6.1 6.6 25 40 to 48 13 23 2,717 1,420 2,690 9.3 9.2 8.4 49 to 60 30 24 23 2,569 2,212 2,472 11.6 10.6 9.4 61 to 84 28 15 26 1,884 955 1,943 14.8 15.7 13.5 85 to 167 18 17 18 837 847 1,170 21.9 20.1 15.4 Open continuously 45 24 38 2,207 1,546 2,029 20.2 15.3 18.5 Ownership and occupancy Nongovernment owned 119 75 107 8,599 5,614 9,259 13.9 13.4 11.6 72 37 54 5,433 3,172 4,673 11.8 11.6 Owner occupied 13.2 Leased to tenant or tenants 47 38 53 3,131 2,428 4,513 15.1 15.5 11.7 Q Q Q Q Q Unoccupied Q Q Q Q 36 Government owned 20 30 2,750 1,797 2,522 13.2 11.0 11.9 Federal Q Q 3 Q Q 257 Q Q 10.3 9 773 State 15 10 1,016 652 15.1 13.3 13.1 18 10 Local 17 1,553 1,065 1,493 11.6 9.6 11.6 Party responsible for operation of energy systems 125 75 106 9,342 6,126 8,912 13.4 12.2 11.9 **Building** owner 24 14 24 1,584 966 2,256 15.0 14.6 10.5 Business owner or tenant Q Q 5 Q Q 358 Q Q Property management 13.2 Other Q Q 3 Q Q 256 Q Q 10.7

Table C19. Electricity consumption and conditional energy intensity by census division (part 3), 2018

Total electricity Total floorspace of Electricity buildings using electricity consumption energy intensity (kWh/square foot) (billion kilowatthours [kWh]) (million square feet) West West West South South South Central Mountain **Pacific** Central Mountain **Pacific** Central Mountain **Pacific** All buildings 156 95 137 11,349 7,411 11,781 13.7 12.8 11.7 Provider of direct input on energyrelated equipment purchases **Building** owner 135 79 109 9,936 6,396 9,255 13.6 12.4 11.7 13 1,229 15.6 Business owner or tenant 10 16 811 625 16.0 13.3 Property management Q Q Q Q Q Q Q Q Q Other 6 4 9 473 328 1,110 12.3 13.5 8.5 **Number of establishments** 101 57 85 7,826 4,698 7,760 13.0 12.0 11.0 2 to 5 31 23 26 2,133 1,596 2,195 14.4 14.3 11.9 7 6 to 10 7 12 454 454 686 16.4 15.1 17.2 11 to 20 6 5 8 394 336 530 14.8 14.5 14.7 More than 20 10 Q 507 Q 537 20.5 12.0 6 Q Currently unoccupied Q Q Q Q Q Q Q Q Predominant exterior wall material 81 58 13.4 Brick, stone, or stucco 49 5,864 3,566 4,371 13.9 13.7 Concrete (block or poured) 36 25 32 2,289 1,878 2,827 15.6 13.5 11.3 9 Concrete panels 5 18 812 467 1,855 11.1 9.8 9.7 Siding or shingles Q 4 9 Q Q 8.9 312 967 12.4 Metal panels 20 3 10 586 1,058 10.8 9.0 1,854 5.3 Window glass 4 5 5 18.3 17.0 15.6 194 311 347 Other Q 4 5 Q 291 356 Q 14.0 15.4 **Predominant roof material** 39 11 3,463 1,038 2,306 11.4 10.8 7.8 Metal surfacing 18 41 40 Synthetic or rubber 39 2,559 2,827 3,203 15.9 13.8 12.5 Built-up 35 22 35 2,342 1,567 2,582 15.0 13.7 13.4 Slate or tile shingles 6 Q 11 413 Q 14.1 13.3 Q Wooden materials (including 4 3 Q Q 340 390 Q 12.0 7.6 shingles) Asphalt, fiberglass, or other shingles 18 10 18 1,528 1,016 1,519 12.1 9.4 12.1 5 Concrete Q 6 232 Q 397 20.7 Q 16.3 Other 10 Q 6 708 Q 525 13.5 Q 11.0 **Roof tilt** Flat 93 68 88 6,149 4,943 6,657 15.1 13.8 13.2 Shallow pitch 43 22 34 3,508 1,952 3,478 12.2 11.1 9.9 Steeper pitch 20 5 15 1,693 516 1,646 11.8 10.1 9.3 Cool roof characteristics (more than one may apply) White or reflective coating or paint 59 50 61 4,276 3,668 5,152 13.9 13.6 11.8 White or reflective tiles or shingles Q Q 4 398 332 20.5 11.4 Q Q Aluminum coating 1,051 14 5 7 623 17.5 10.6 272 13.6 Ballasted roof system 8 10 3 391 815 270 20.4 12.8 11.4

Q

Q

Q

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Q

Other cool roof property

Table C19. Electricity consumption and conditional energy intensity by census division (part 3), 2018

buildings using electricity

energy intensity

Total electricity

consumption

(billion kilowatthours [kWh]) (million square feet) (kWh/square foot) West West West South South South Central Mountain **Pacific** Central Mountain **Pacific** Central Mountain **Pacific** All buildings 156 95 137 11,349 11,781 13.7 12.8 7,411 11.7 Renovations since 2000 (more than one may apply) 72 47 5,303 3,299 4,774 13.6 14.1 12.3 Any type of renovation 59 Addition or annex 16 11 11 1,131 783 751 14.0 15.2 14.1 Reduction in floorspace Q Q Q Q Q Q Q Q Q Roof replacement 29 21 24 2,292 1,350 1,903 12.8 15.6 12.4 23 23 Interior wall reconfiguration 36 2,395 1,701 1,961 15.1 13.4 11.8 Window replacement 970 12 12 11 916 953 12.8 12.1 11.6 43 HVAC equipment upgrade 28 35 3,150 2,113 2,626 13.7 13.1 13.1 Lighting upgrade 42 33 42 2,967 2,308 3,075 14.3 14.4 13.6 Electrical upgrade 23 14 20 1,541 1,132 1,347 15.2 12.7 14.5 22 14.5 Plumbing system upgrade 16 19 1,522 1,202 1,453 13.0 12.9 Insulation upgrade 11 10 6 760 795 468 14.1 12.4 12.0 25 Fire, safety, or security upgrade 31 19 2,258 1,399 1,944 13.6 13.6 13.0 Structural upgrade 4 Q 7 324 Q 466 13.6 Q 15.6 4 Other Q Q 160 Q Q 23.8 Q Q 67 37 4,989 5,846 No renovations 68 3,276 13.4 11.2 11.6 Buildings constructed 2013 or later 17 11 11 1,057 15.8 13.7 9.6 836 1,161 **Energy sources** (more than one may apply) Electricity 156 95 137 11,349 7,411 11,781 13.7 12.8 11.7 7,488 107 73 Natural gas 103 5,948 8,138 12.2 12.6 14.2 Fuel oil 30 34 33 1,637 1,899 1,976 18.1 18.0 16.6 9 9 District heat 14 Q 401 883 15.7 23.3 16.1 District chilled water 11 Q 12 721 267 25.2 17.2 696 15.1 Propane 10 Q 13 722 700 1,248 13.7 13.6 10.5 Solar Q 4 16 396 1,012 Q 15.8 Q 9.5 Wood, coal, and other Q Q Q Q Q Q Q Q Q Space-heating energy sources Electricity 97 56 70 6,485 3,856 5,823 15.0 14.6 12.1 72 30 4,726 11.4 Electricity main 44 2,200 3,855 15.1 13.7 **Electricity secondary** 26 26 27 1,759 1,657 1,968 14.8 15.7 13.5 Other excluding electricity 50 36 54 4,013 3,350 4,543 12.5 10.7 11.9 **Buildings** without heating 8 Q 13 Q Q 1,415 9.4 Q 9.2 **Primary space-heating** energy source 15.1 72 30 44 4,726 2,200 11.4 Electricity 3,855 13.7 Natural gas 66 53 64 5,010 4,523 5,404 13.2 11.6 11.9 Q Q Fuel oil Q Q Q Q Q Q Q District heat Q 8 13 Q 362 797 16.0 23.1 16.6 Q Q Q Q Propane Q Q Q Q Q Other sources^b Q Q Q Q Q Q Q Q Q **Cooling energy sources** 146 Electricity 91 118 10,446 6,790 9,616 14.0 13.4 12.3 Other excluding electricity 8 Q 10 Q 121 590 14.0 12.7 16.9 2 3 **Buildings** without cooling 10 Q 500 1,575 5.8 5.0 6.1

Table C19. Electricity consumption and conditional energy intensity by census division (part 3), 2018

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

	South		D161-	South	D.A	D161-	South	. A	D!f!-
	Central	Mountain	Pacific	Central	Mountain	Pacific	Central	Mountain	Pacific
All buildings	156	95	137	11,349	7,411	11,781	13.7	12.8	11.7
Water-heating energy sources									
Electricity	88	48	64	6,166	3,155	5,590	14.2	15.2	11.5
Other excluding electricity	62	41	65	4,320	3,570	4,986	14.2	11.6	13.0
Buildings without water heating	6	6	9	863	686	1,205	7.5	8.3	7.1
Cooking energy sources									
Electricity	62	40	44	3,637	2,708	2,814	17.1	14.8	15.7
Other excluding electricity	23	15	23	1,442	830	1,699	15.7	17.8	13.7
Buildings without cooking	71	40	70	6,270	3,873	7,268	11.3	10.3	9.7
Energy end uses									
(more than one may apply)									
Buildings with space heating	148	92	124	10,498	7,206	10,366	14.1	12.8	12.0
Buildings with cooling	154	92	128	11,003	6,911	10,206	14.0	13.4	12.5
Buildings with water heating	149	89	129	10,487	6,725	10,576	14.2	13.3	12.2
Buildings with cooking	85	55	67	5,079	3,538	4,513	16.7	15.5	14.9
Buildings with manufacturing	8	5	11	754	599	923	10.4	8.8	12.1
Buildings with electricity									
generation	45	43	51	2,721	2,547	3,157	16.6	16.9	16.0
Buildings with lighting	156	95	137	11,334	7,390	11,716	13.7	12.8	11.7
Percentage of floorspace heated									
Not heated	8	Q	13	Q	Q	1,415	9.4	Q	9.2
1% to 50%	17	9	18	1,650	611	2,436	10.2	15.0	7.3
51% to 99%	39	21	35	2,576	1,909	2,739	15.3	11.1	12.8
100%	91	62	72	6,273	4,687	5,191	14.6	13.2	13.8
Percentage of floorspace cooled									
Not cooled	2	3	10	Q	500	1,575	5.8	5.0	6.1
1% to 50%	13	10	19	1,910	1,126	3,026	6.6	8.6	6.3
51% to 99%	47	29	35	2,839	1,955	2,692	16.6	14.6	12.8
100%	94	54	74	6,253	3,831	4,488	15.0	14.1	16.5
Percentage lit when open									
0%	Q	Q	Q	Q	Q	Q	Q	Q	Q
1% to 50%	15	7	9	1,954	789	1,563	7.9	8.2	5.9
51% to 99%	69	41	62	4,547	3,095	4,876	15.1	13.4	12.8
100%	71	47	65	4,731	3,477	5,151	15.1	13.5	12.6
Building never open or electricity									
not used	Q	Q	Q	Q	Q	Q	Q	Q	Q
Percentage lit during off hours									
0%	17	6	20	1,797	964	2,612	9.5	6.2	7.5
1% to 50%	114	74	92	8,436	5,824	7,930	13.5	12.8	11.6
51% to 100%	19	12	20	888	486	975	21.7	25.2	20.5
Building always open with no off hours	Q	Q	5	Q	Q	263	Q	Q	20.9
Electricity not used	N	N		N	N	N	N		N
Licentity flot useu		IN	IN		IV.	I N	IV	IV	

Table C19. Electricity consumption and conditional energy intensity by census division (part 3), 2018

Electricity

Total electricity

consumption buildings using electricity energy intensity (kWh/square foot) (billion kilowatthours [kWh]) (million square feet) West West West South South South Central Mountain **Pacific** Central Mountain **Pacific** Central Mountain **Pacific** All buildings 156 95 137 11,349 7,411 11,781 13.7 12.8 11.7 **Heating equipment** (more than one may apply) Packaged heating units 92 66 72 6,609 4,812 5,705 13.9 13.8 12.5 25 11.1 **Furnaces** 16 19 1,927 1,367 1,736 11.5 13.1 Individual space heaters 29 21 27 1,984 1,792 2,445 14.4 11.9 11.2 **Boilers** 32 35 40 2,172 2,528 2,857 14.9 14.0 13.9 17 21 29 1,974 14.7 Heat pumps 1,200 1,291 14.4 16.4 District heat 9 9 14 373 874 16.3 23.1 16.0 Q Duct reheat 20 7 10 1,049 367 628 18.7 17.8 15.2 Other Q Q Q Q Q Q Q Q Q **Cooling equipment** (more than one may apply) Packaged air-conditioning units 103 67 88 7,224 4,733 6,849 14.3 14.1 12.8 Residential-type central air conditioners 26 11 18 2,175 1,027 1,536 11.8 10.8 11.8 Individual air conditioners 13.1 18 13 19 1,251 654 1,492 14.0 19.4 Central chillers 30 20 36 1,703 1,114 1,993 17.8 17.5 18.1 8 Heat pumps 15 21 508 1,072 1,428 15.7 14.4 15.0 District chilled water 11 Q 12 721 267 696 15.1 25.2 17.2 Swamp coolers Q 8 9 Q 578 734 Q 13.2 12.2 Other Q Q Q Q Q Q Q Q Q **HVAC** features (more than one may apply) Economizer cycle 53 45 64 3,008 3,232 4,479 17.7 13.9 14.3 Variable air volume (VAV) system 52 35 50 3,239 2,621 3,313 16.1 13.4 15.2 18 Dedicated outside air system (DOAS) 12 16 965 Q 945 18.6 16.4 16.6 Demand controlled ventilation (DCV) 1,016 730 1,136 16 12 17 15.9 16.5 15.2 Regular HVAC maintenance 88 119 9,460 9,328 138 6,622 14.6 13.3 12.8 Building automation system (BAS) controls heating or cooling 75 52 70 4,744 3,552 4,826 15.9 14.7 14.5 Internet-connected or smart thermostat 14 7 9 1,153 509 677 11.8 12.9 13.4 21 32 Programmable thermostat 28 2,286 10.1 1,723 3,143 12.0 12.3 Main equipment replaced since 2000 (more than one may apply) Heating 47 23 42 3,828 2,086 3,615 12.3 11.1 11.6 Cooling 32 20 25 2,353 1,604 2,282 13.8 12.5 11.2 Water-heating equipment Centralized system 90 63 78 6,596 4,942 6,375 13.6 12.6 12.3 Distributed system 27 12 23 2,159 2,208 13.4 10.4 885 12.5 Combination of centralized and distributed systems 32 15 28 1,732 899 1,993 18.6 16.5 13.9

Table C19. Electricity consumption and conditional energy intensity by census division (part 3), 2018

Total electricity

consumption buildings using electricity energy intensity (billion kilowatthours [kWh]) (million square feet) (kWh/square foot) West West West South South South Central Mountain **Pacific** Central Mountain **Pacific** Central Mountain **Pacific** All buildings 156 95 137 11,349 7,411 11,781 13.7 12.8 11.7 **Generation technologies** (more than one may apply) 42 39 33 2,458 2,116 2,042 17.1 18.2 16.2 Reciprocating engine generators Q 4 972 9.5 15.8 Solar panels 15 Q 396 Q Other generation technology Q Q 7 Q Q 370 Q Q 18.8 Lighting equipment types (more than one may apply) Incandescent 32 24 41 2,080 1,364 2,376 15.4 17.5 17.1 Standard fluorescent 113 73 109 8,448 5,645 9,112 13.4 12.9 11.9 Compact fluorescent 53 37 67 3,653 2,541 4,335 14.4 14.5 15.4 High-intensity discharge (HID) 14 16 15 830 988 974 16.8 16.6 15.9 Halogen 32 25 33 2,087 1,366 1,832 15.4 18.4 17.8 LED 102 71 101 6,506 5,168 7,763 15.6 13.8 13.0 Other Q Ν Q Q Ν Q Q Ν Q Refrigeration equipment (more than one may apply) Any refrigeration 139 82 116 9,599 6,068 8,854 14.5 13.5 13.1 Walk-in units 64 46 56 3,063 2,505 2,974 20.9 18.5 18.7 Cases or cabinets 64 41 54 3,236 2,262 3,069 19.7 18.1 17.5 362 9 Q 8 459 18.3 Large cold storage areas Q 25.4 Q 79 Commercial ice makers 53 58 4,501 3,254 3,575 17.5 16.3 16.1 Residential-type or compact units 114 62 95 8,220 5,023 7,470 13.8 12.3 12.8 Vending machines 83 49 59 5,166 3,410 4,084 16.0 14.4 14.6 No refrigeration 16 13 22 1,751 1,343 2,927 9.3 7.4 9.8 Office equipment (more than one may apply) **Desktop computers** 142 88 124 10,093 6,477 10,014 14.1 13.6 12.4 With multiple monitors 85 60 86 5,585 4,276 6,439 14.1 13.3 15.3 Laptop computers 114 72 102 8,299 5,327 8,133 13.7 13.6 12.5 92 90 **Dedicated servers** 59 6,133 4,161 6,524 14.9 14.2 13.8 Tablets charged in building 89 61 76 5,940 4,293 5,530 15.0 14.1 13.8 Large floor-standing office devices^c 88 58 82 6,291 4,427 6,208 13.9 13.0 13.2 Smaller desktop office devices^c 135 80 112 9,505 5,843 8,907 14.2 13.6 12.6 Interactive whiteboards 20 19 18 1,567 1,467 1,371 12.6 12.8 13.1 Televisions or video displays 119 74 95 8,231 5,216 7,266 14.4 14.1 13.1 Point-of-sale devices or cash registers 74 55 58 3,888 3,415 3,407 19.1 16.0 17.1 Food preparation or serving areas in non-food service buildings (more than one may apply) Snack bar, concession stand, or coffee 18 18 19 1,011 1,106 1,337 17.9 16.1 14.4 shop 20 980 17 22 17.6 16.1 Fast food or small restaurant 983 1,373 20.8 23 Cafeteria or large restaurant 16 16 1,450 1,202 1,081 16.1 13.6 14.8 Commercial kitchen or food preparation area 38 25 25 2,013 1,633 1,611 18.9 15.6 15.4 29 1,985 Small kitchen area 23 23 2,367 1,856 12.3 12.6 11.8

Table C19. Electricity consumption and conditional energy intensity by census division (part 3), 2018

Total electricity Total floorspace of consumption buildings using electricity energy intensity (billion kilowatthours [kWh]) (million square feet) (kWh/square foot) West West West South South South Central Mountain **Pacific** Central Mountain **Pacific** Central Mountain **Pacific** All buildings 156 95 137 11,349 11,781 13.7 12.8 7,411 11.7 Separate computer areas (more than one may apply) 5,939 4,104 5,794 13.1 Server closet 81 56 76 13.6 13.6 19.4 Data center 19 14 27 1,077 982 1,387 17.8 14.5 Computer-based training room 29 25 24 2,006 1,782 1,575 14.7 13.9 15.1 Student or public computer center 22 16 18 1,825 1,125 1,293 12.3 14.1 14.0 Window and interior lighting features (more than one may apply) 113 84 95 7,724 6,223 7,692 14.6 13.4 12.4 Multipaned windows Tinted window glass 84 57 78 5,857 3,844 6,266 14.4 14.8 12.5 Reflective window glass 30 39 2,091 2,071 3,021 32 15.1 14.2 13.1 External overhangs or awnings 52 45 56 3.851 2.772 4.270 13.6 16.2 13.0 Skylights or atriums 32 26 34 2,179 1,862 3,137 14.6 14.1 11.0 Light scheduling 68 51 66 3,999 3,220 4,410 16.9 15.9 14.9 Occupancy sensors 63 49 76 4,075 3,607 5,876 15.5 13.6 13.0 Multilevel lighting or dimming 24 26 24 1,314 1,714 1,604 17.9 15.4 14.8 1,239 Daylight harvesting 14 16 15 778 19.6 20.1 12.4 726 Plug-load control Q Q 6 Q Q 312 Q Q 19.1 Q 5 Q Q Demand responsive lighting Q Q Q 14.8 333 Building automation system (BAS) for 35 27 35 2,002 1,678 17.5 16.0 lighting 2,527 13.8 Electric vehicle (EV) charging Charging stations associated with the building 9 16 23 568 1,131 1,944 15.9 14.1 11.9 **Annual consumption** (kilowatthours) 10,000 or less 0 0 0 256 166 267 1.3 1.6 1.8 7 4 10,001 to 50,000 8 906 4.9 5.1 1,138 1,616 5.8 50,001 to 100,000 10 5 11 1,168 680 1,423 8.4 7.4 7.8 12.9 100,001 to 500,000 44 36 3,424 10.5 23 3,442 1,951 11.9

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

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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.

20

35

26

1,874

2,296

1,176

1,240

1,626

842

1,471

2,530

1,052

14.0

16.4

21.4

13.2

17.3

25.6

13.7

13.9

25.1

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.

25

40

30

500,001 to 1,000,000

Over 5,000,000

1,000,001 to 5,000,000

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

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

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

Q = Data withheld either because the relative standard error was greater than 50% or the reporting sample had fewer than 20 buildings.

N = No buildings in reporting sample.

	RSEs for tot consumption			al floorspace o ing electricity		RSEs for electricity energy intensity			
	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific
All buildings	10.3	12.8	4.8	11.7	13.4	7.7	4.8	6.8	6.5
Building floorspace (square feet)									
1,001 to 5,000	18.8	18.2	13.0	14.6	17.0	9.3	12.9	12.4	14.5
5,001 to 10,000	21.0	23.5	14.0	19.4	22.6	10.7	13.1	19.4	12.5
10,001 to 25,000	21.7	16.7	15.2	22.2	15.0	18.0	15.4	13.0	11.5
25,001 to 50,000	21.0	22.3	13.3	18.0	20.9	14.5	8.7	6.1	16.6
50,001 to 100,000	13.1	18.5	13.6	14.7	14.2	14.6	5.8	7.9	8.6
100,001 to 200,000	9.3	25.7	18.6	10.3	17.6	18.9	8.4	20.6	15.1
200,001 to 500,000	13.8	24.2	16.9	13.3	23.2	12.4	7.9	6.5	11.5
Over 500,000	17.6	57.4	18.7	15.7	59.2	26.0	13.2		17.8
Principal building activity									
Education	20.3	13.6	14.9	20.3	15.2	15.8	7.1	6.9	10.1
Food sales	46.4	16.9	48.0	48.6	18.2	46.1	21.3	4.9	18.6
Food service	24.4	27.7	31.5	25.1	21.9	26.2	9.4		14.2
Health care	18.0	23.7	15.9	16.9	20.0	20.2	4.6		15.7
Inpatient	20.0	33.2	20.7	20.0	31.8	25.4	4.6	7.6	22.4
Outpatient	36.1	20.4	23.6	29.1	19.7	24.0	10.8		14.9
Lodging	23.4	48.6	12.6	21.7	43.0	14.7	6.9	10.4	10.0
Mercantile	15.3	15.9	13.0	15.1	15.6	10.7	3.9	5.8	6.6
Retail (other than mall)	19.6	19.2	31.7	21.6	21.9	24.2	8.7	9.8	15.5
Enclosed and strip malls	21.0		18.4	21.1	22.6	15.9	4.0	8.0	6.5
Office	16.3	18.8	12.4	18.0	21.0	10.0	10.2		4.8
Public assembly	23.0	26.3	11.8	19.1	26.5	13.7	6.2		11.2
Public order and safety	56.7	39.5	41.5	48.3	37.0	38.5	17.4	25.8	11.2
Religious worship	13.8	36.7	27.3	16.6	28.2	28.6	12.8	23.5	12.6
Service	34.6	18.7	18.3	33.8	20.2	27.0	30.1	9.4	12.8
	22.3	33.3	22.5						
Warehouse and storage				27.5	30.1	17.2	21.1	16.6	18.0
Other	54.0	91.8	33.3	44.9	46.0	34.5	28.1	94.2	19.9
Vacant	46.5	93.1	46.5	51.3	71.3	51.2	42.7	82.5	24.8
Year constructed									
Before 1920	62.8		34.7	73.3	65.9	35.5	47.1	86.0	26.8
1920 to 1945	26.9		24.9	27.0	33.6	23.4	18.3	62.8	20.0
1946 to 1959	27.8	29.3	18.2	26.6	30.3	15.2	17.7	22.0	19.4
1960 to 1969	19.2	28.7	14.9	17.2	22.9	17.9	12.0	17.4	13.1
1970 to 1979	23.6	25.6	19.5	22.1	19.0	23.5	9.1	12.3	25.6
1980 to 1989	15.3	36.4	12.9	16.3	33.7	10.0	8.6	8.3	7.9
1990 to 1999	12.9	17.7	13.0	19.9	16.8	15.8	11.5	7.2	12.2
2000 to 2009	19.6	13.9	18.3	19.6	13.0	16.8	8.2	9.6	7.7
2010 to 2018	21.6	27.9	18.5	23.0	28.2	20.1	6.7	9.2	12.6
Climate zone ^a									
Cold or very cold	0.0	54.5	54.1	0.0	64.1	58.0	0.0	29.1	16.3
Cool	0.0	18.6	51.7	0.0	15.2	41.2	0.0	11.3	18.0
Mixed mild	84.7	78.0	42.5	88.1	72.7	47.6	16.6	17.3	10.5
Warm	41.6	68.9	9.3	41.4	69.1	8.8	5.1	0.6	8.1
Hot or very hot	20.2	14.7	82.9	21.1	16.6	85.2	8.8	4.6	9.4

	RSEs for tot consumption	al electricity n		RSEs for total floorspace of buildings using electricity			RSEs for electricity energy intensity			
	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific	
All buildings	10.3	12.8	4.8	11.7	13.4	7.7	4.8	6.8	6.5	
Number of floors										
1	15.4	12.4	8.6	15.4	13.9	9.4	6.9	7.1	5.9	
2	13.2	12.4	13.0	15.0	11.4	12.7	5.3	8.2	10.9	
3	27.5	26.8	15.3	26.0	36.2	20.8	13.5	12.6	18.6	
4 to 9	22.6	17.9	16.4	23.2	18.2	17.4	12.2	10.0	12.9	
10 or more	31.4	50.4	20.5	27.1	51.9	22.2	8.7	30.9	5.9	
Elevators and escalators (more than one may apply)										
Any elevators	16.3	20.4	10.6	18.0	21.6	13.3	6.9	10.1	8.9	
1 elevator	36.6	16.7	11.7	31.5	21.6	19.4	9.1	10.4	13.6	
2 to 5 elevators	16.4	20.6	13.4	17.5	16.6	11.8	9.8	21.3	8.1	
6 or more elevators	17.5	50.9	19.1	14.3	50.2	20.4	10.5	7.7	14.2	
Any escalators	24.2	67.9	25.8	21.0	66.6	25.7	22.7	9.6	11.9	
Number of workers (main shift)										
Fewer than 5	21.8	20.7	10.4	19.9	21.3	16.5	12.9	4.7	20.8	
5 to 9	20.3	18.5	18.9	17.4	19.1	18.5	7.1	18.0	13.0	
10 to 19	20.1	20.9	13.8	20.9	16.2	15.5	10.3	18.5	12.6	
20 to 49	12.6	20.2	12.1	15.0	11.2	11.6	10.5	17.3	9.3	
50 to 99	25.9	25.7	18.3	26.0	20.7	13.4	6.7	9.1	10.0	
100 to 249	14.2	28.1	14.6	12.7	28.7	17.3	7.3	13.5	7.6	
250 or more	14.2	37.4	15.2	13.1	33.2	15.2	6.6	8.2	11.3	
Weekly operating hours										
Fewer than 40	22.2	23.7	13.6	18.3	17.4	19.0	11.6	16.3	15.0	
40 to 48	16.1	19.4	9.1	16.9	19.2	10.4	10.4	4.3	10.0	
49 to 60	17.4	15.8	9.3	16.8	13.0	11.6	5.8	12.6	7.1	
61 to 84	19.9	29.1	13.6	23.0	22.5	11.5	8.7	19.0	7.7	
85 to 167	20.5	17.0	20.3	15.6	20.3	25.0	14.0	9.3	16.0	
Open continuously	11.1	28.5	8.9	11.8	27.4	11.3	7.4	8.3	9.5	
Ownership and occupancy										
Nongovernment owned	9.2	14.0	5.6	10.3	14.6	9.3	6.4	7.5	7.0	
Owner occupied	10.4	19.7	8.5	11.7	15.7	11.1	5.8	8.2	10.5	
Leased to tenant or tenants	14.6	13.0	8.7	11.3	16.8	10.0	9.0	11.7	7.5	
Unoccupied	79.7	71.3	47.9	88.9	70.9	54.4	47.3	20.5	36.0	
Government owned	20.4	21.1	11.9	20.8	18.6	13.6	5.4	8.4	9.1	
Federal	53.0	40.3	39.2	45.3	44.8	41.5	26.1	11.4	13.8	
State	31.0	32.0	25.9	31.8	23.6	26.2	5.2	16.2	17.8	
Local	20.5	21.2	14.2	21.8	24.7	15.4	9.7	6.9	11.9	
Party responsible for operation										
of energy systems										
Building owner	11.9	13.9	6.3	13.5	13.8	7.9	4.7	7.4	7.3	
Business owner or tenant	13.1	17.0	16.7	14.3	19.2	17.6	9.0	8.0	11.9	
Property management	31.6	43.4	34.4	33.1	43.6	30.1	14.4	21.1	24.2	
Other	65.3	22.5	24.5	45.6	15.9	28.1	37.1	14.5	18.4	

	RSEs for tot	al electricity n			al floorspace of ing electricity	F			
	West South	Mountain	Pacific	West South	Mountain	Pacific	West South	Mountain	Pacific
All buildings	10.3	12.8	4.8	11.7	13.4	7.7	4.8	6.8	6.5
Provider of direct input on energy- related equipment purchases									
Building owner	10.9	13.3	5.7	12.7	13.2	8.2	5.0	7.0	7.2
Business owner or tenant	14.3	18.9	21.0	18.4	21.3	25.7	14.7	6.6	13.1
Property management	41.8	68.1	18.8	38.5	63.1	42.9	20.5	46.3	36.2
Other	34.7	34.7	14.1	25.1	47.9	10.8	25.3	35.5	13.4
Number of establishments									
1	14.5	12.5	7.9	15.7	12.0	9.6	4.8	9.0	8.1
2 to 5	13.5	31.9	13.9	11.9	31.4	11.8	5.7	6.0	8.5
6 to 10	23.7	24.0	23.2	21.7	19.1	24.7	8.7	12.5	12.5
11 to 20	32.8	25.5	13.3	30.8	23.7	12.0	11.5	12.2	6.6
More than 20	26.2	26.3	17.8	20.4	33.9	16.5	14.1	18.2	12.0
Currently unoccupied	79.6	93.1	47.9	88.7	71.3	54.4	45.9	82.5	36.0
Predominant exterior wall material									
Brick, stone, or stucco	13.6	18.1	8.6	14.4	16.8	8.8	5.6	9.7	7.8
Concrete (block or poured)	12.2	15.5	10.7	13.1	13.1	12.8	9.7	11.9	13.3
Concrete panels	19.8	21.0	20.7	19.8	27.2	18.2	9.0	11.3	14.1
Siding or shingles	41.5	26.3	22.5	39.7	22.5	27.8	9.0	10.6	23.1
Metal panels	15.0	23.7	13.7	15.2	22.3	16.5	10.4	11.0	22.2
Window glass	25.3	41.4	28.3	26.9	40.6	25.4	13.9	5.0	14.6
Other	53.7	29.2	22.4	44.4	29.5	22.8	34.4	18.9	15.8
Predominant roof material									
Metal surfacing	22.8	19.7	11.3	21.5	20.1	14.8	6.5	9.8	20.3
Synthetic or rubber	12.4	15.6	8.2	12.1	17.1	10.1	8.5	8.1	7.4
Built-up	16.5	33.6	11.8	15.8	28.9	10.7	7.2	12.2	6.8
Slate or tile shingles	26.7	33.0	23.7	11.6	36.6	22.6	20.4	8.6	9.2
Wooden materials (including									
shingles)	29.4	41.5	30.1	46.7	30.9	33.5	47.7	17.1	15.9
Asphalt, fiberglass, or									
other shingles	19.3	20.4	17.9	18.0	17.3	18.3	9.2	8.4	18.8
Concrete	42.9	68.0	25.7	35.7	36.8	17.3	26.3	61.2	12.9
Other	23.1	32.5	21.4	19.7	32.0	29.0	17.4	17.0	28.7
Roof tilt									
Flat	9.0	15.8	7.3	10.9	16.2	8.7	6.6	6.8	5.0
Shallow pitch	14.7	16.9	11.2	15.8	14.2	12.6	7.2	18.5	16.6
Steeper pitch	23.2	18.9	17.8	23.2	11.5	20.9	7.0	20.1	9.3
Cool roof characteristics (more than one	e								
may apply)		24 -		40.5	40.5	400			
White or reflective coating or paint	12.2	21.5	8.4	12.0	19.3	10.3	5.6	5.3	5.6
White or reflective tiles or shingles	52.7	26.8	19.1	38.0	36.2	13.2	24.8	27.8	20.6
Aluminum coating	31.2	35.1	19.3	23.0	36.6	41.0	18.0	18.5	40.5
Ballasted roof system	22.3	48.3	28.2	21.0	35.9	25.1	24.6	22.4	19.9
Other cool roof property	66.1	56.4	37.1	61.1	60.8	30.0	36.9	10.0	22.3

	RSEs for tot	al electricity			al floorspace of ing electricity		ctricity nsity		
	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific
All buildings	10.3	12.8	4.8	11.7	13.4	7.7	4.8	6.8	6.5
Renovations since 2000									
(more than one may apply)									
Any type of renovation	8.9	16.0	6.4	9.7	17.6	8.4	5.9	11.9	8.1
Addition or annex	11.7	19.6	9.5	9.0	21.9	17.3	8.4	7.8	15.2
Reduction in floorspace	52.6	51.2	42.9	41.5	68.3	36.8	32.6	21.1	12.0
Roof replacement	14.5	26.8	11.9	13.6	27.1	13.1	7.3	12.5	12.8
Interior wall reconfiguration	11.8	28.4	14.8	12.6	26.4	10.8	8.3	9.6	9.5
Window replacement	26.3	39.5	17.8	18.9	30.7	22.3	12.4	16.1	13.4
HVAC equipment upgrade	10.5	23.3	10.5	12.2	23.6	11.3	8.0	9.1	10.0
Lighting upgrade	10.9	19.7	9.5	10.0	20.9	10.5	7.0	15.0	8.2
Electrical upgrade	18.8	35.0	15.7	18.1	32.1	8.0	11.7	15.2	15.1
Plumbing system upgrade	16.2	32.4	10.5	12.9	29.2	9.9	9.2	9.4	8.3
Insulation upgrade	16.2	49.6	16.8	18.0	41.2	24.2	10.6	19.4	18.2
Fire, safety, or security upgrade	15.1	29.9	14.5	13.4	27.1	13.7	9.9	8.9	10.2
Structural upgrade	21.3	76.1	19.6	19.5	66.4	18.9	12.6	25.9	23.7
Other	16.5	40.8	43.2	15.7	46.1	38.4	7.3	32.9	24.6
No renovations	18.6	12.4	7.5	19.3	13.0	9.2	7.3	6.7	7.1
Buildings constructed 2013 or later	20.2	29.6	13.2	22.7	28.3	16.7	12.9	6.8	13.5
Energy sources (more than one may apply) Electricity	10.3	12.8	4.8	11.7	13.4	7.7	4.8	6.8	6.5
Natural gas	8.1	15.7	5.4	8.6	16.2	8.9	3.8	7.4	5.4
Fuel oil	12.6	27.4	14.9	13.4	31.4	15.7	10.2	13.0	12.2
District heat	44.7	43.6	24.2	53.4	33.8	18.4	17.8	34.1	11.4
District chilled water	44.0	54.4	27.6	47.5	31.0	20.5	7.8	45.3	13.4
Propane	30.1	51.0	25.5	25.5	40.8	27.3	14.8	17.4	14.5
Solar	46.4	33.6	18.6	47.8	31.9	19.3	18.9	12.3	7.0
Wood, coal, and other	52.2	41.7	51.8	53.0	46.6	48.7	18.4	12.9	42.2
Space-heating energy sources									
Electricity	11.8	13.0	7.3	11.3	13.0	9.6	4.8	6.7	7.9
Electricity main	18.4	11.5	13.5	17.1	14.0	14.1	6.3	6.6	9.0
Electricity secondary	16.9	23.3	11.8	16.0	21.4	12.5	4.5	10.7	8.9
Other excluding electricity	12.1	19.2	11.0	14.3	18.1	11.8	6.6	10.2	6.1
Buildings without heating	48.7	30.8	18.6	56.1	37.4	17.4	30.6	29.5	26.5
Primary space-heating energy source									
Electricity	18.4	11.5	13.5	17.1	14.0	14.1	6.3	6.6	9.0
Natural gas	10.2	18.5	7.7	10.3	18.9	9.8	4.3	8.5	6.2
Fuel oil	72.2	102.4	109.6	81.1	96.9	110.6	83.6	39.1	95.0
District heat	50.0	44.8	26.2	60.9	31.9	21.5	24.1	38.8	10.1
Propane	67.0	96.5	52.8	59.4	80.5	45.6	19.9	56.7	28.4
Other sources ^b	52.1	74.9	37.1	52.1	74.9	59.5	0.0	0.0	34.4
Cooling energy sources									
Electricity	10.1	12.4	5.5	10.5	13.3	6.6	4.3	6.1	5.5
Other excluding electricity	46.1	55.6	29.0	52.6	46.7	21.7	14.2	16.3	18.4
Buildings without cooling	49.8	28.8	27.2	55.1	29.3	22.7	22.6	13.9	27.3

	RSEs for tot	al electricity n			al floorspace of ing electricity	R			
	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific
All buildings	10.3	12.8	4.8	11.7	13.4	7.7	4.8	6.8	6.5
Water-heating energy sources									
Electricity	15.3	12.2	9.5	14.4	13.0	6.7	6.0	9.2	10.7
Other excluding electricity	15.3	20.1	10.5	16.0	17.6	10.6	4.5	9.2	7.3
Buildings without water heating	42.8	41.2	23.5	45.9	28.8	17.3	18.7	24.0	32.6
Cooking energy sources									
Electricity	11.0	20.6	7.8	9.8	18.8	11.4	6.7	4.9	8.1
Other excluding electricity	16.9	19.4	14.0	12.4	14.7	15.8	8.0	14.4	10.9
Buildings without cooking	15.3	15.7	10.1	18.0	18.0	9.8	6.5		9.6
Energy end uses									
(more than one may apply)									
Buildings with space heating	9.8	13.0	5.0	10.1	13.7	8.1	4.0	6.9	5.8
Buildings with cooling	10.1	13.0	5.1	10.8	13.5	6.4	4.3		5.3
Buildings with water heating	9.7	13.3	4.6	10.0	14.3	7.2	3.9	7.1	5.7
Buildings with cooking	7.8	16.9	7.1	6.8	15.3	10.8	4.8	5.5	7.8
Buildings with manufacturing	25.5	28.1	25.7	22.3	24.7	19.6	23.4	34.1	15.5
Buildings with electricity									
generation	11.1	22.1	10.4	10.2	24.4	11.8	7.4	10.2	8.3
Buildings with lighting	10.3	12.8	4.8	11.7	13.4	7.6	4.8	6.7	6.4
Percentage of floorspace heated									
Not heated	48.7	30.8	18.6	56.1	37.4	17.4	30.6	29.5	26.5
1% to 50%	16.8	40.4	18.5	20.6	33.7	15.3	19.0	34.6	10.1
51% to 99%	13.3	14.3	10.0	15.4	15.3	9.5	4.1	14.8	5.8
100%	11.6	17.2	6.8	14.8	16.2	9.1	7.5	3.6	8.9
Percentage of floorspace cooled									
Not cooled	49.8	28.8	27.2	55.1	29.3	22.7	22.6	13.9	27.3
1% to 50%	19.3	22.2	12.4	24.8	26.4	13.0	14.1	15.0	7.1
51% to 99%	10.5	20.5	12.9	10.9	17.5	11.9	6.2	14.8	8.8
100%	12.0	18.5	7.3	13.8	18.3	6.1	6.7	3.1	6.7
Percentage lit when open									
0%	105.9	70.2	102.1	110.2	70.2	77.9	222.7	0.0	98.9
1% to 50%	19.1	27.3	15.3	20.5	24.6	19.0	11.9	16.0	19.8
51% to 99%	8.0	17.4	6.4	9.9	16.4	9.8	4.7	7.4	9.7
100%	16.0	13.6	7.5	15.4	14.8	7.9	6.2	9.2	6.0
Building never open or electricity									
not used	44.7	78.4	69.5	49.0	26.5	27.4	37.6	75.6	61.1
Percentage lit during off hours									
0%	30.4	30.9	15.1	25.5	26.7	18.8	10.8	18.1	9.9
1% to 50%	9.3	15.2	4.8	11.1	13.4	7.3	4.2	5.2	6.3
51% to 100%	20.2	25.2	19.7	17.7	14.8	17.6	16.4	28.3	12.2
Building always open with									
no off hours	42.1	39.5	44.8	39.6		38.9	22.2		12.2
Electricity not used	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	RSEs for tot	al electricity			al floorspace of ing electricity		RSEs for ele	-	
	West South			West South			West South		
	Central	Mountain	Pacific	Central	Mountain	Pacific	Central	Mountain	Pacific
All buildings	10.3	12.8	4.8	11.7	13.4	7.7	4.8	6.8	6.5
Heating equipment (more than one may apply)									
Packaged heating units	11.5	13.7	7.4	9.9	14.3	9.7	6.9	5.8	5.8
Furnaces	16.2	27.1	14.6	17.1	16.6	14.0	4.5	11.4	12.9
Individual space heaters	14.8	26.5	10.9	15.7	23.8	10.5	7.0	14.5	12.3
Boilers	9.6	22.9	10.6	12.3	22.1	13.7	6.1	7.0	8.2
Heat pumps	17.1	24.8	21.5	16.4	24.7	12.7	7.9	4.3	11.5
District heat	45.9	44.4	24.4	56.6	31.6	18.6	22.1	37.3	11.6
Duct reheat	13.2	34.2	23.2	12.1	34.2	17.8	9.9	9.0	16.8
Other	99.2	30.1	100.2	99.2	31.4	95.5	0.0	7.9	33.3
Cooling equipment									
(more than one may apply)									
Packaged air-conditioning units	11.8	12.1	6.8	10.1	13.8	7.0	6.6	7.2	4.9
Residential-type central air									
conditioners	17.5	25.9	20.5	19.0	22.1	16.7	6.4	8.7	19.7
Individual air conditioners	16.0	39.9	16.2	13.6	20.2	16.6	7.2	29.8	11.5
Central chillers	12.4	21.4	10.8	11.4	18.5	10.7	6.0	19.4	9.3
Heat pumps	24.4	34.1	17.3	21.3	30.7	14.3	12.0	6.7	6.7
District chilled water	44.0	54.4	27.6	47.5	31.0	20.5	7.8	45.3	13.4
Swamp coolers	71.1	27.3	22.8	64.5	16.3	20.9	17.3	19.9	9.0
Other	90.1	78.7	72.3	97.9	70.1	47.1	67.8	5.1	50.4
HVAC features (more than one may apply)									
Economizer cycle	15.7	18.8	10.3	15.9	19.8	12.8	9.4	6.4	7.6
Variable air volume (VAV) system	19.3	23.1	9.7	23.5	21.5	10.3	8.5	6.3	7.8
Dedicated outside air system (DOAS)	18.7	48.5	18.7	15.9	51.3	12.5	10.6	9.2	12.5
Demand controlled ventilation (DCV)	17.3	31.1	18.5	17.8	20.0	17.9	4.0	29.6	17.2
Regular HVAC maintenance	10.3		6.1	11.6	13.7	8.9	5.3	6.5	5.2
Building automation system (BAS)									
controls heating or cooling	13.6	18.5	9.1	18.4	18.3	9.9	7.5	8.1	7.5
Internet-connected or smart									
thermostat	35.4	36.1	30.1	34.9	27.6	20.1	8.6	18.8	11.9
Programmable thermostat	20.2	10.9	8.8	23.2	14.6	7.9	11.8	9.2	7.6
Main equipment replaced since 2000 (more than one may apply)									
Heating	10.8	13.8	8.6	11.6	14.9	9.1	7.0	3.8	12.1
Cooling	9.7	29.2	12.3	9.3	24.1	13.1	7.8	11.6	10.0
Water-heating equipment									
Centralized system	10.4	16.3	6.9	10.5	15.9	6.5	5.0	7.4	7.9
Distributed system	27.5	14.4	15.0	28.5	17.2	13.1	9.7	10.6	9.3
Combination of centralized and					, _				
distributed systems	15.1	16.0	14.5	13.3	16.8	14.3	8.4	8.5	11.1
Generation technologies									
(more than one may apply)									
Reciprocating engine generators	11.0	23.9	15.3	10.5	27.8	15.8	7.9	12.3	12.0
Solar panels	46.4	33.6	17.3	47.8	31.9	18.8	18.9	12.3	7.8
Other generation technology	29.2	54.7	30.2	47.5	50.7	34.1	66.7	14.6	22.6

	RSEs for tot	al electricity n			al floorspace of ing electricity		ctricity nsity		
	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific
All buildings	10.3	12.8	4.8	11.7	13.4	7.7	4.8	6.8	6.5
Lighting equipment types (more than one may apply)									
Incandescent	12.1	30.7	8.3	10.6	25.6	10.2	7.2	16.1	9.3
Standard fluorescent	8.3	13.3	5.0	10.3	14.4	8.8	4.5	8.1	7.5
Compact fluorescent	11.3	20.2	9.3	13.1	19.2	6.9	5.1	4.6	7.0
High-intensity discharge (HID)	16.5	36.3	16.4	16.6	35.2	15.4	7.9	21.2	16.2
Halogen	9.3	25.4	12.7	9.6	25.1	8.9	4.8	14.0	7.1
LED	10.6	14.9	6.0	10.3	14.1	6.6	5.6	6.7	6.5
Other	70.9	0.0	51.3	70.9	0.0	51.3	0.0	0.0	0.0
Refrigeration equipment									
(more than one may apply)	10.1	12.0	г э	11.2	13.8	0.1	4.2	5.4	6.5
Any refrigeration Walk-in units	10.1	13.9	5.2	11.2		8.1	4.3		6.5
	9.5	16.9	9.0	7.2	17.1	9.6	7.5	6.6	7.6
Cases or cabinets	12.5	20.5	8.5	10.0	22.3	10.9	7.5	7.6	7.5
Large cold storage areas	29.2	44.4	32.3	28.8	52.0	19.7	12.2	16.3	20.0
Commercial ice makers	8.9	14.9	10.2	8.1	15.5	11.5	4.6	8.7	7.8
Residential-type or compact units	11.3	15.6	5.8	12.7	15.0	8.1	5.3	6.8	7.2
Vending machines	10.1	17.5	10.3	10.4	20.7	9.8	4.4	8.6	8.7
No refrigeration	15.6	28.2	19.2	16.0	23.1	12.4	11.9	24.0	17.8
Office equipment (more than one may apply)									
Desktop computers	10.0	12.6	4.5	10.9	14.2	7.3	4.7	6.9	5.5
With multiple monitors	8.7	19.0	8.2	9.1	20.0	10.8	5.3	8.4	5.9
Laptop computers	9.3	14.5	5.8	10.6	15.0	7.4	5.6	7.4	6.6
Dedicated servers	8.7	15.5	7.1	10.4	16.2	10.1	5.5	6.8	7.3
Tablets charged in building	7.8	15.2	6.6	9.9	14.8	9.8	5.0	7.4	6.8
Large floor-standing office devices ^c	8.9	17.2	8.3	9.9	17.3	9.6	5.5	8.7	7.4
Smaller desktop office devices ^c	8.6	13.8	5.3	9.9	14.7	7.5	4.6	7.6	5.4
Interactive whiteboards	14.5	32.2	16.1	16.6	26.4	13.1	6.3	8.5	14.0
Televisions or video displays	8.1	13.9	6.4	10.0	14.0	9.3	5.4	7.6	7.0
Point-of-sale devices or cash registers	11.3	17.6	7.8	8.9	18.8	10.8	5.7	9.3	6.6
Food preparation or serving areas									
in non-food service buildings (more than one may apply)									
Snack bar, concession stand, or coffee shop	12.7	31.7	15.1	10.5	30.0	15.1	7.8	9.4	11.2
Fast food or small restaurant	13.0	30.1	16.4	13.1	30.9	16.1	4.2	7.7	9.7
Cafeteria or large restaurant	10.2	37.8	15.6	9.5	31.2	20.8	5.0	11.2	
Commercial kitchen or	10.2	3/.0	13.0	9.3	31.2	20.0	5.0	11.2	10.7
food preparation area	12.4	23.6	11.5	11.9	20.9	13.9	6.0	10.8	7.2
Small kitchen area	10.6	26.0	10.7	9.3	21.2	14.4	9.5	8.9	11.7
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	RSEs for tot consumptio	al electricity n			al floorspace of ing electricity	R e			
	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific	West South Central	Mountain	Pacific
All buildings	10.3	12.8	4.8	11.7	13.4	7.7	4.8	6.8	6.5
Separate computer areas (more than one may apply)									
Server closet	9.7	16.3	7.9	11.9	17.6	10.5	3.6	5.5	6.9
Data center	12.9	47.6	19.0	9.9	44.1	21.4	8.7	8.2	12.3
Computer-based training room	11.7	28.4	14.5	15.5	26.4	17.2	8.1	5.9	8.7
Student or public computer center	11.6	36.3	16.7	11.5	29.9	18.0	6.4	10.7	13.1
Window and interior lighting									
features (more than one may									
apply)									
Multipaned windows	12.7	14.1	6.5	11.9	14.1	9.0	4.8	6.4	6.7
Tinted window glass	12.4	16.7	5.4	11.3	16.9	8.8	6.9	6.9	8.1
Reflective window glass	17.5	26.4	10.6	20.7	23.0	12.8	10.2	7.6	7.3
External overhangs or awnings	14.0	20.3	7.3	12.0	19.8	11.1	5.1	9.0	6.9
Skylights or atriums	10.5	22.9	11.1	6.5	23.9	11.5	8.4	5.6	7.2
Light scheduling	9.7	18.7	8.6	10.4	17.9	9.9	6.4	8.0	8.2
Occupancy sensors	12.7	21.8	8.1	14.7	21.5	9.0	5.0	5.6	6.1
Multilevel lighting or dimming	11.2	29.0	10.4	9.0	27.8	10.1	8.6	5.9	7.7
Daylight harvesting	20.8	24.5	15.9	18.6	13.3	14.3	11.4	22.7	9.2
Plug-load control	28.0	57.9	35.7	29.7	37.3	25.8	8.4	51.0	17.9
Demand responsive lighting	52.2	27.2	31.1	42.1	21.4	34.2	28.9	32.0	26.1
Building automation system (BAS) for									
lighting	9.7	27.0	13.9	12.6	26.4	13.7	9.7	6.7	8.5
Electric vehicle (EV) charging									
Charging stations associated with the									
building	19.7	31.8	10.5	19.0	29.3	10.5	5.5	8.2	4.7
Annual consumption									
(kilowatthours)									
10,000 or less	35.0	32.3	28.1	36.3	34.8	35.2	33.0	12.4	15.9
10,001 to 50,000	20.2	21.5	17.4	22.9	20.9	20.6	9.3	4.6	7.8
50,001 to 100,000	22.4	17.2	9.0	20.0	17.3	9.4	12.9	8.0	12.9
100,001 to 500,000	14.8	14.5	10.9	15.0	14.8	10.9	9.0	12.4	7.7
500,001 to 1,000,000	21.0	17.6	14.3	23.5	18.4	10.2	7.8	4.1	8.0
1,000,001 to 5,000,000	10.4	15.5	12.8	7.7	14.8	14.4	4.8	5.0	7.7
Over 5,000,000	12.8	36.7	15.0	10.6	45.6	14.4	7.3	25.5	10.7

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

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

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

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

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