

Table E6. Electricity consumption intensities (in kilowatthours [kWh]) by end use, 2018Electricity energy intensity^a (kWh/square foot in buildings using electricity for the end use)

	Total	Space heating	Cooling	Ventilation	Water heating	Lighting	Cooking	Refrigeration	Office equipment	Computing	Other
All buildings	12.6	1.5	2.0	2.3	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Building floorspace (square feet)											
1,001 to 5,000	14.5	2.5	2.9	1.8	0.9	2.1	3.0	4.0	0.3	0.6	3.3
5,001 to 10,000	11.2	2.1	2.3	1.5	0.7	1.8	2.4	2.5	0.2	0.4	2.3
10,001 to 25,000	10.7	1.5	1.8	1.5	0.4	1.8	1.0	1.2	0.2	0.9	2.9
25,001 to 50,000	12.0	1.6	2.1	2.0	0.5	2.3	0.5	1.4	0.1	0.6	2.8
50,001 to 100,000	12.0	1.6	2.0	2.3	0.5	2.2	0.6	1.2	0.1	0.7	2.7
100,001 to 200,000	13.1	1.2	1.9	2.7	0.5	2.5	0.6	1.1	0.2	1.1	3.0
200,001 to 500,000	14.9	1.3	2.0	3.3	0.4	2.5	0.5	0.8	0.2	1.7	3.8
Over 500,000	14.2	1.0	1.6	3.9	0.4	2.5	0.7	0.7	0.1	1.2	3.3
Principal building activity											
Education	9.4	1.3	2.1	1.4	0.7	1.6	0.3	0.5	0.1	0.7	2.2
Food sales	53.3	3.7	2.1	3.8	0.2	3.8	3.3	25.5	0.2	Q	Q
Food service	43.8	5.5	5.6	4.9	5.3	3.2	12.4	11.9	0.3	0.3	5.8
Health care	23.8	1.3	2.8	7.2	0.6	3.6	1.1	0.9	0.3	1.7	6.5
Inpatient	28.8	1.3	3.8	8.4	1.4	3.5	1.2	1.2	0.3	2.1	8.3
Outpatient	17.4	1.3	1.4	5.6	0.1	3.7	0.6	0.5	0.3	1.1	4.1
Lodging	14.4	1.4	1.7	3.7	2.5	2.1	1.2	1.2	0.1	0.4	3.1
Mercantile	16.7	1.7	2.0	3.2	0.8	3.8	0.4	2.2	0.2	0.6	3.1
Retail (other than mall)	13.7	1.5	1.9	3.4	0.1	3.5	0.5	1.1	0.1	0.4	2.9
Enclosed and strip malls	19.6	1.8	2.1	2.9	1.3	4.1	0.4	3.1	0.3	0.8	3.3
Office	13.6	1.5	1.5	3.8	0.2	2.3	0.2	0.5	0.2	1.5	3.1
Public assembly	12.1	2.8	4.6	1.2	0.1	1.5	0.5	0.9	0.1	0.3	3.1
Public order and safety	13.9	2.0	2.7	1.8	1.9	3.4	0.5	0.6	0.2	0.8	3.1
Religious worship	4.9	0.7	1.2	0.9	0.1	1.0	0.3	0.3	0.1	0.1	0.9
Service	7.2	1.7	1.5	0.9	0.1	2.3	0.3	0.3	0.1	0.2	2.0
Warehouse and storage	5.8	0.9	1.1	0.5	0.1	1.5	(*)	1.0	(*)	0.2	1.8
Other	29.1	1.5	4.0	2.2	0.1	3.7	0.6	0.7	0.1	9.7	9.7
Vacant	3.9	1.0	1.6	0.4	(*)	0.8	Q	0.2	Q	0.2	1.7
Year constructed											
Before 1920	9.9	1.5	1.4	1.7	0.2	1.7	1.1	0.8	0.1	Q	2.4
1920 to 1945	11.6	1.3	2.0	2.6	0.3	2.0	0.6	1.1	0.2	1.3	2.5
1946 to 1959	9.7	1.3	1.7	1.6	0.5	1.8	0.6	1.0	0.1	0.6	2.5
1960 to 1969	11.7	1.2	2.0	2.1	0.5	2.2	0.9	1.3	0.2	0.6	2.9
1970 to 1979	12.4	1.5	2.0	2.3	0.6	2.3	0.9	1.5	0.2	0.8	2.8
1980 to 1989	13.6	1.5	1.9	2.6	0.5	2.2	0.7	1.4	0.2	1.3	3.2
1990 to 1999	11.8	1.6	2.0	2.3	0.4	2.2	0.7	1.3	0.2	0.6	2.7
2000 to 2009	14.6	1.7	2.3	2.6	0.5	2.5	1.1	1.7	0.2	1.0	3.5
2010 to 2018	13.7	1.6	2.1	2.4	0.7	2.2	1.1	1.6	0.2	0.9	3.4

Table E6. Electricity consumption intensities (in kilowatthours [kWh]) by end use, 2018

Electricity energy intensity^a (kWh/square foot in buildings using electricity for the end use)

	Total	Space heating	Cooling	Ventilation	Water heating	Lighting	Cooking	Refrigeration	Office equipment	Computing	Other
All buildings	12.6	1.5	2.0	2.3	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Census region and division											
Northeast	12.0	1.8	1.2	2.5	0.4	2.4	0.6	1.1	0.2	1.0	3.0
New England	11.6	1.9	0.9	2.3	0.5	2.1	0.7	1.6	0.2	0.6	3.4
Middle Atlantic	12.1	1.7	1.2	2.5	0.4	2.4	0.6	1.0	0.2	1.1	2.9
Midwest	11.7	2.3	1.3	2.2	0.5	2.1	0.8	1.4	0.1	0.9	2.9
East North Central	11.7	2.2	1.4	2.3	0.6	2.1	0.8	1.6	0.1	0.8	2.8
West North Central	11.6	2.7	1.2	2.0	0.4	2.0	0.6	0.9	0.1	1.2	3.1
South	13.9	1.3	3.2	2.3	0.5	2.3	1.0	1.4	0.2	0.8	3.0
South Atlantic	14.4	1.4	3.2	2.5	0.6	2.3	1.1	1.4	0.2	0.8	3.2
East South Central	12.4	1.5	2.6	2.1	0.5	2.2	0.8	1.3	0.2	0.7	2.6
West South Central	13.7	1.1	3.4	2.2	0.4	2.2	1.0	1.4	0.2	0.8	3.0
West	12.1	1.0	1.4	2.4	0.5	2.1	1.0	1.7	0.2	1.1	3.0
Mountain	12.8	1.3	1.5	2.5	0.6	2.2	1.2	1.8	0.2	1.3	2.6
Pacific	11.7	0.8	1.4	2.3	0.5	2.1	0.8	1.7	0.2	0.9	3.2
Climate zone^b											
Cold or very cold	12.5	2.6	0.7	2.2	0.4	1.9	1.0	1.8	0.1	1.3	3.7
Cool	11.3	2.0	1.0	2.3	0.6	2.2	0.7	1.3	0.1	0.9	2.8
Mixed mild	12.9	1.9	1.7	2.6	0.4	2.3	0.8	1.1	0.2	1.0	3.1
Warm	13.0	1.3	2.5	2.3	0.5	2.2	1.1	1.5	0.2	0.8	3.0
Hot or very hot	14.1	0.4	4.2	2.2	0.5	2.2	0.9	1.5	0.2	0.8	2.9
Number of floors											
1	12.5	1.8	2.3	1.8	0.6	2.2	1.2	2.0	0.2	0.7	2.9
2	10.7	1.2	1.8	1.8	0.5	2.1	0.7	1.1	0.1	0.6	2.4
3	12.1	1.6	1.9	2.3	0.4	2.1	0.5	1.0	0.1	1.0	2.9
4 to 9	15.1	1.3	2.0	3.5	0.4	2.4	0.7	0.8	0.2	1.5	4.2
10 or more	16.7	1.2	1.6	5.2	0.4	2.2	0.8	0.6	0.2	2.1	3.8
Elevators and escalators (more than one may apply)											
Any elevators	14.0	1.3	1.9	3.3	0.5	2.3	0.6	0.8	0.2	1.3	3.5
1 elevator	10.9	1.5	1.8	2.1	0.4	1.9	0.5	0.8	0.2	0.8	2.6
2 to 5 elevators	15.1	1.4	2.1	3.4	0.5	2.4	0.6	0.8	0.2	1.8	3.7
6 or more elevators	17.4	1.0	2.0	5.0	0.4	2.5	0.7	0.7	0.2	1.6	4.5
Any escalators	14.8	1.2	1.9	3.9	0.5	2.5	0.7	0.8	0.1	1.4	3.3
Number of workers (main shift)											
Fewer than 5	8.2	1.7	2.2	0.9	0.3	1.3	0.8	1.6	0.1	0.5	2.3
5 to 9	11.8	1.9	2.0	1.6	0.5	1.9	1.8	1.7	0.2	0.4	3.0
10 to 19	11.3	1.5	1.8	1.9	0.7	2.0	1.6	1.7	0.1	0.5	2.3
20 to 49	13.6	1.7	2.0	2.1	0.6	2.4	1.1	1.7	0.2	1.4	2.7
50 to 99	13.6	1.4	2.1	2.4	0.5	2.5	0.5	1.4	0.1	0.7	3.4
100 to 249	14.5	1.3	2.1	3.2	0.5	2.9	0.5	1.1	0.2	0.8	3.3
250 or more	17.4	1.2	1.9	4.7	0.4	2.7	0.6	0.7	0.2	1.9	4.5
Weekly operating hours											
Fewer than 40	6.8	1.4	1.7	0.5	0.2	1.0	0.6	0.9	0.1	0.5	2.2
40 to 48	9.1	1.4	1.7	1.2	0.3	1.6	0.4	0.6	0.2	0.7	2.6
49 to 60	9.9	1.4	1.6	1.7	0.4	1.9	0.5	0.8	0.2	0.9	2.2
61 to 84	13.7	1.7	2.0	2.3	0.6	2.7	0.9	1.7	0.2	0.7	3.1
85 to 167	17.6	2.1	2.5	2.9	0.6	3.3	1.6	3.6	0.1	0.4	3.5
Open continuously	19.1	1.5	2.6	4.8	1.1	2.8	1.0	1.6	0.2	1.7	4.5

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	Total	Space heating	Cooling	Ventilation	Water heating	Lighting	Cooking	Refrigeration	Office equipment	Computing	Other
All buildings	12.6	1.5	2.0	2.3	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Ownership and occupancy											
Nongovernment owned	12.9	1.5	1.9	2.4	0.5	2.3	0.9	1.6	0.2	0.9	3.0
Owner occupied	12.6	1.4	2.0	2.5	0.5	2.1	1.0	1.5	0.2	0.8	3.0
Leased to tenant or tenants	13.5	1.7	1.7	2.4	0.6	2.6	0.8	1.6	0.2	1.1	3.0
Unoccupied	2.4	Q	1.8	(*)	Q	Q	Q	Q	Q	Q	1.2
Government owned	11.7	1.5	2.4	2.0	0.5	1.9	0.7	0.8	0.2	0.9	3.0
Federal	13.9	1.4	1.9	3.5	0.3	2.8	0.6	0.4	0.2	1.3	3.4
State	13.4	1.5	2.9	2.2	0.6	1.9	1.2	1.0	0.2	0.9	4.0
Local	10.5	1.6	2.3	1.6	0.5	1.7	0.5	0.8	0.2	0.8	2.4
Party responsible for operation of energy systems											
Building owner	12.5	1.5	2.0	2.4	0.5	2.1	0.9	1.3	0.2	0.9	3.0
Business owner or tenant	12.9	1.7	1.8	1.9	0.6	2.6	0.9	2.1	0.1	0.8	2.7
Property management	14.7	1.9	2.1	3.0	0.4	2.6	0.5	1.6	0.2	0.8	3.2
Other	14.1	1.4	2.2	2.5	0.8	2.7	0.8	1.1	0.2	1.2	3.2
Provider of direct input on energy-related equipment purchases											
Building owner	12.4	1.5	2.0	2.4	0.5	2.1	0.9	1.3	0.2	0.9	3.0
Business owner or tenant	14.1	1.8	1.9	1.9	0.6	2.8	0.9	2.3	0.2	1.1	2.9
Property management	15.6	2.4	1.8	2.8	0.7	3.0	Q	2.3	0.2	0.7	3.2
Other	12.7	1.6	1.9	2.3	0.7	2.3	0.7	1.2	0.2	0.9	3.0
Number of establishments											
1	12.1	1.6	2.1	2.1	0.5	2.0	1.0	1.4	0.1	0.9	3.0
2 to 5	13.0	1.4	2.0	2.6	0.4	2.4	0.7	1.5	0.2	0.8	2.9
6 to 10	14.5	1.6	1.6	3.0	0.5	2.8	0.5	1.7	0.2	1.1	3.0
11 to 20	16.0	1.6	1.8	3.5	0.7	3.2	0.4	1.5	0.2	1.0	3.2
More than 20	15.5	1.5	1.6	3.8	0.6	3.1	0.3	0.9	0.3	1.5	2.9
Currently unoccupied	2.9	Q	1.6	Q	Q	Q	Q	Q	Q	Q	1.7
Predominant exterior wall material											
Brick, stone, or stucco	13.3	1.5	2.2	2.5	0.6	2.2	1.0	1.3	0.2	0.9	3.0
Concrete (block or poured)	13.6	1.5	2.1	2.5	0.5	2.5	0.8	1.8	0.1	1.0	2.9
Concrete panels	11.5	1.2	1.5	2.1	0.2	2.2	0.5	0.9	0.1	1.4	2.9
Siding or shingles	12.8	2.3	1.6	1.8	0.8	2.2	1.0	1.8	0.2	0.6	3.9
Metal panels	8.1	1.4	1.7	1.2	0.2	1.8	0.5	1.1	0.1	0.3	2.5
Window glass	15.7	1.9	1.9	3.7	0.3	2.3	0.8	0.7	0.2	1.9	3.8
Other	14.2	1.7	1.4	3.3	0.4	2.2	0.6	1.6	0.2	1.8	3.0
Predominant roof material											
Metal surfacing	9.8	1.8	2.1	1.2	0.4	1.9	1.1	1.4	0.1	0.4	2.7
Synthetic or rubber	14.4	1.5	1.9	2.9	0.5	2.5	0.8	1.6	0.2	1.1	3.2
Built-up	13.7	1.5	2.2	2.7	0.6	2.3	1.0	1.3	0.2	1.2	2.9
Slate or tile shingles	11.4	1.4	2.3	1.9	0.7	1.8	1.0	1.5	0.2	0.5	2.4
Wooden materials (including shingles)	10.8	1.1	2.1	2.0	Q	1.9	1.0	1.8	0.2	0.3	2.4
Asphalt, fiberglass, or other shingles	11.1	1.5	1.8	2.0	0.6	2.0	0.6	1.0	0.2	0.7	2.8
Concrete	16.7	1.6	2.5	3.0	0.6	2.4	0.9	1.0	0.2	Q	4.1
Other	13.1	1.1	1.9	2.0	0.4	2.1	1.3	1.5	0.2	0.8	4.0

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	Total	Space heating	Cooling	Ventilation	Water heating	Lighting	Cooking	Refrigeration	Office equipment	Computing	Other
All buildings	12.6	1.5	2.0	2.3	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Roof tilt											
Flat	14.4	1.6	2.1	2.9	0.5	2.5	0.9	1.4	0.2	1.1	3.3
Shallow pitch	10.4	1.5	1.9	1.5	0.4	2.0	0.8	1.4	0.1	0.7	2.6
Steeper pitch	10.1	1.5	1.8	1.5	0.5	1.6	0.7	1.3	0.2	0.4	2.8
Cool roof characteristics (more than one may apply)											
White or reflective coating or paint	13.9	1.3	2.1	2.7	0.5	2.4	1.0	1.5	0.2	0.9	3.4
White or reflective tiles or shingles	16.0	2.1	2.6	2.5	1.0	2.2	1.3	1.8	0.2	Q	3.5
Aluminum coating	11.1	1.5	2.1	1.7	0.5	2.1	1.1	1.8	0.1	0.5	2.4
Ballasted roof system	14.3	1.7	1.9	3.0	0.4	2.1	0.7	0.9	0.2	1.5	3.7
Other cool roof property	15.2	2.0	1.8	3.4	0.5	2.6	0.6	1.3	0.2	1.4	3.2
Renovations since 2000 (more than one may apply)											
Any type of renovation	13.1	1.5	1.9	2.7	0.5	2.3	0.8	1.2	0.2	1.0	3.0
Addition or annex	13.7	1.6	2.1	2.9	0.6	2.2	0.7	1.3	0.2	0.8	3.1
Reduction in floorspace	15.0	1.6	1.9	3.4	0.7	2.6	0.6	1.3	0.2	1.1	3.1
Roof replacement	13.1	1.4	1.9	2.7	0.6	2.2	0.8	1.2	0.2	1.0	3.0
Interior wall reconfiguration	13.4	1.4	1.8	3.0	0.4	2.3	0.6	1.0	0.2	1.1	3.1
Window replacement	12.6	1.4	1.6	2.7	0.6	2.2	0.8	1.2	0.2	0.9	2.8
HVAC equipment upgrade	13.5	1.4	1.9	2.9	0.5	2.3	0.8	1.2	0.2	1.0	3.1
Lighting upgrade	13.6	1.5	1.8	2.9	0.5	2.3	0.8	1.3	0.2	1.1	3.1
Electrical upgrade	14.1	1.6	1.9	3.0	0.5	2.3	0.9	1.2	0.2	1.2	3.2
Plumbing system upgrade	13.9	1.5	1.9	3.1	0.5	2.2	0.8	1.2	0.2	1.1	3.2
Insulation upgrade	13.5	1.3	1.9	3.0	0.4	2.2	0.8	1.1	0.2	1.0	3.3
Fire, safety, or security upgrade	13.8	1.5	1.9	2.9	0.6	2.3	0.7	1.1	0.2	1.1	3.2
Structural upgrade	15.1	1.1	1.7	3.3	0.7	2.4	0.9	1.3	0.2	1.5	3.8
Other	17.6	2.0	2.6	5.0	0.3	3.4	0.7	0.9	0.1	0.7	3.9
No renovations	12.0	1.6	2.1	1.9	0.5	2.2	1.0	1.5	0.2	0.9	3.0
Buildings constructed 2013 or later	13.0	1.5	2.1	2.3	0.7	2.1	1.1	1.8	0.1	0.6	3.3
Energy sources (more than one may apply)											
Electricity	12.6	1.5	2.0	2.3	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Natural gas	12.7	1.4	1.9	2.5	0.5	2.3	0.8	1.4	0.2	0.8	2.9
Fuel oil	16.6	1.5	2.1	3.4	0.5	2.4	0.9	1.2	0.2	2.0	4.3
District heat	16.8	1.1	1.8	4.2	0.7	2.5	0.8	0.8	0.2	1.6	5.8
District chilled water	17.2	1.3	0.9	3.6	0.5	2.4	0.8	1.0	0.2	1.9	7.1
Propane	11.7	1.3	1.6	1.7	0.5	2.0	1.1	1.8	0.1	0.5	3.1
Solar	12.8	1.2	1.8	2.8	0.6	2.4	0.6	1.5	0.1	0.8	2.7
Wood, coal, and other	11.8	1.7	1.8	1.8	0.5	2.3	1.0	1.6	0.1	0.9	2.5
Space-heating energy sources											
Electricity	14.7	1.5	2.1	2.4	0.6	2.4	0.9	1.6	0.2	1.0	3.1
Electricity main	15.2	1.9	2.4	2.2	0.6	2.3	1.1	1.6	0.2	1.1	3.1
Electricity secondary	13.9	1.0	1.7	2.6	0.6	2.6	0.7	1.6	0.2	0.8	3.1
Other excluding electricity	10.8	N	1.7	2.3	0.3	2.1	0.8	1.1	0.1	0.7	2.8
Buildings without heating	9.7	N	4.1	1.3	0.5	1.6	1.3	2.2	0.1	2.3	3.4

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Electricity energy intensity^a (kWh/square foot in buildings using electricity for the end use)

	Total	Space heating	Cooling	Ventilation	Water heating	Lighting	Cooking	Refrigeration	Office equipment	Computing	Other
All buildings	12.6	1.5	2.0	2.3	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Primary space-heating energy source											
Electricity	15.2	1.9	2.4	2.2	0.6	2.3	1.1	1.6	0.2	1.1	3.1
Natural gas	11.5	1.0	1.7	2.3	0.4	2.3	0.8	1.3	0.1	0.7	2.7
Fuel oil	7.6	1.1	1.0	1.2	0.3	1.7	0.4	1.0	0.1	0.4	2.2
District heat	16.4	0.8	1.8	4.1	0.6	2.5	0.8	0.8	0.2	1.7	5.6
Propane	9.1	1.4	1.5	1.2	0.6	1.5	1.0	2.1	0.1	0.3	2.1
Other sources ^c	5.9	Q	Q	0.7	Q	1.3	Q	Q	0.1	0.2	1.7
Cooling energy sources											
Electricity	13.0	1.5	2.0	2.4	0.5	2.3	0.9	1.4	0.2	1.0	2.6
Other excluding electricity	16.1	0.8	N	3.2	0.4	2.2	0.7	0.9	0.2	0.8	8.4
Buildings without cooling	6.8	2.5	N	0.2	0.1	1.0	Q	0.6	(*)	0.1	5.0
Water-heating energy sources											
Electricity	13.5	1.7	2.0	2.2	0.5	2.3	0.8	1.4	0.2	1.0	3.0
Other excluding electricity	12.6	1.3	2.0	2.7	N	2.1	0.9	1.4	0.2	0.9	3.0
Buildings without water heating	6.6	1.3	2.4	0.9	N	1.6	Q	0.5	0.1	0.4	2.7
Cooking energy sources											
Electricity	15.7	1.6	2.0	3.0	0.8	2.5	0.9	1.9	0.2	0.8	3.4
Other excluding electricity	13.9	1.5	2.4	2.8	0.8	2.3	N	1.8	0.2	0.7	2.9
Buildings without cooking	10.4	1.5	1.9	1.8	0.3	2.0	N	0.8	0.2	1.1	2.8
Energy end uses (more than one may apply)											
Buildings with space heating	12.8	1.5	1.9	2.4	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Buildings with cooling	13.1	1.5	2.0	2.4	0.5	2.3	0.9	1.4	0.2	0.9	2.8
Buildings with water heating	13.1	1.6	2.0	2.4	0.5	2.3	0.9	1.4	0.2	0.9	3.0
Buildings with cooking	15.2	1.6	2.1	2.9	0.8	2.4	0.9	1.9	0.2	0.8	3.2
Buildings with manufacturing	12.5	1.5	1.3	2.0	0.3	2.2	0.8	1.9	0.1	0.5	4.1
Buildings with electricity generation	16.1	1.6	2.1	3.3	0.6	2.5	0.7	1.3	0.2	1.7	4.0
Buildings with lighting	12.7	1.5	2.0	2.3	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Percentage of floorspace heated											
Not heated	9.7	N	4.1	1.3	0.5	1.6	1.3	2.2	0.1	2.3	3.4
1% to 50%	8.9	0.7	1.5	1.3	0.2	1.7	0.7	1.5	0.1	0.9	1.9
51% to 99%	13.6	1.4	1.9	2.8	0.6	2.4	0.8	1.7	0.2	0.8	2.9
100%	13.2	1.8	2.0	2.4	0.5	2.3	0.9	1.2	0.2	0.9	3.2
Percentage of floorspace cooled											
Not cooled	6.8	2.5	N	0.2	0.1	1.0	Q	0.6	(*)	0.1	5.0
1% to 50%	6.8	1.2	0.9	1.0	0.2	1.7	0.6	0.8	0.1	0.3	1.6
51% to 99%	14.4	1.4	2.0	2.9	0.6	2.4	0.8	1.6	0.2	1.2	3.0
100%	15.3	1.7	2.6	2.8	0.7	2.5	1.0	1.6	0.2	1.1	3.3
Percentage lit when open											
0%	Q	Q	Q	Q	Q	N	N	Q	Q	Q	Q
1% to 50%	7.2	1.2	1.8	1.1	0.3	0.9	0.6	0.8	0.1	0.6	1.9
51% to 99%	13.9	1.5	2.0	2.7	0.6	2.3	0.8	1.5	0.2	1.0	3.2
100%	13.7	1.6	2.1	2.5	0.5	2.6	1.1	1.5	0.2	0.9	3.2
Building never open or electricity not used	3.8	1.6	1.6	(*)	Q	1.0	Q	Q	Q	Q	1.7

Table E6. Electricity consumption intensities (in kilowatthours [kWh]) by end use, 2018

Electricity energy intensity^a (kWh/square foot in buildings using electricity for the end use)

	Total	Space heating	Cooling	Ventilation	Water heating	Lighting	Cooking	Refrigeration	Office equipment	Computing	Other
All buildings	12.6	1.5	2.0	2.3	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Percentage lit during off hours											
0%	7.4	1.5	1.9	0.9	0.3	1.2	0.7	1.0	0.1	0.3	2.3
1% to 50%	12.6	1.5	2.0	2.4	0.5	2.2	0.8	1.3	0.2	0.8	2.9
51% to 100%	21.3	2.1	2.5	4.2	0.9	3.8	1.0	2.1	0.2	2.5	5.1
Building always open with no off hours	20.5	1.8	2.6	4.0	1.1	4.3	1.6	2.9	0.1	1.3	3.9
Electricity not used	N	N	N	N	N	N	N	N	N	N	N
Heating equipment (more than one may apply)											
Packaged heating units	13.8	1.6	2.1	2.5	0.6	2.4	1.0	1.8	0.2	0.7	2.9
Furnaces	10.9	1.7	1.5	1.8	0.6	2.2	0.6	1.7	0.2	0.6	2.1
Individual space heaters	12.3	1.4	1.6	2.0	0.5	2.3	0.7	1.3	0.2	1.0	2.6
Boilers	13.2	1.4	1.9	2.8	0.5	2.2	0.7	1.0	0.2	0.9	3.4
Heat pumps	14.8	1.2	2.1	2.7	0.7	2.6	0.7	1.3	0.2	1.2	2.9
District heat	16.4	1.1	1.8	4.1	0.7	2.4	0.8	0.8	0.2	1.6	5.5
Duct reheat	17.2	1.9	2.0	3.4	0.6	2.8	0.5	1.4	0.2	1.4	3.7
Other	36.9	3.2	1.7	3.2	0.9	4.4	1.5	9.1	0.2	0.3	Q
Cooling equipment (more than one may apply)											
Packaged air-conditioning units	13.7	1.6	2.0	2.5	0.5	2.5	1.0	1.7	0.2	0.9	2.7
Residential-type central air conditioners	11.7	1.5	1.7	2.1	0.5	2.2	0.6	1.4	0.2	0.9	2.4
Individual air conditioners	12.8	1.6	1.8	2.3	0.9	2.4	0.8	1.3	0.2	0.8	2.6
Central chillers	16.0	1.2	2.5	3.8	0.4	2.4	0.7	0.9	0.2	1.8	3.6
Heat pumps	13.8	1.2	1.8	2.7	0.5	2.3	0.7	1.1	0.2	1.3	2.9
District chilled water	17.2	1.3	0.9	3.6	0.5	2.4	0.8	1.0	0.2	1.9	7.1
Swamp coolers	13.0	1.1	1.9	2.2	0.4	2.3	0.6	2.5	0.1	0.7	2.5
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
HVAC features (more than one may apply)											
Economizer cycle	15.0	1.5	1.9	3.2	0.5	2.4	0.8	1.3	0.2	1.4	3.4
Variable air volume (VAV) system	14.9	1.5	2.2	3.1	0.5	2.3	0.8	1.0	0.2	1.4	3.8
Dedicated outside air system (DOAS)	16.9	1.7	2.1	3.3	0.5	2.4	1.3	1.8	0.2	1.2	4.7
Demand controlled ventilation (DCV)	13.5	1.4	2.0	2.5	0.4	2.3	0.6	1.1	0.1	1.6	3.0
Regular HVAC maintenance	13.6	1.5	2.1	2.5	0.5	2.3	0.9	1.4	0.2	1.0	3.1
Building automation system (BAS) controls heating or cooling	15.6	1.6	2.2	3.2	0.5	2.4	0.8	1.3	0.2	1.5	3.9
Internet-connected or smart thermostat	11.9	1.3	2.1	2.0	0.5	2.1	0.9	1.8	0.1	0.4	2.4
Programmable thermostat	10.4	1.5	1.7	1.7	0.5	2.1	1.1	1.3	0.1	0.5	2.1
Main equipment replaced since 2000 (more than one may apply)											
Heating	11.7	1.4	1.8	2.2	0.5	2.2	0.7	1.3	0.2	0.7	2.5
Cooling	11.7	1.3	1.9	2.3	0.5	2.1	0.7	1.0	0.2	0.9	2.4
Water-heating equipment											
Centralized system	12.7	1.7	2.0	2.3	0.5	2.1	0.9	1.4	0.2	0.9	3.0
Distributed system	13.4	1.5	2.0	2.1	0.7	2.4	1.1	1.6	0.2	1.1	3.0
Combination of centralized and distributed systems	14.5	1.2	2.1	3.2	0.4	2.6	0.5	1.2	0.2	1.1	3.2

Table E6. Electricity consumption intensities (in kilowatthours [kWh]) by end use, 2018

Electricity energy intensity^a (kWh/square foot in buildings using electricity for the end use)

	Total	Space heating	Cooling	Ventilation	Water heating	Lighting	Cooking	Refrigeration	Office equipment	Computing	Other
All buildings	12.6	1.5	2.0	2.3	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Generation technologies (more than one may apply)											
Reciprocating engine generators	16.4	1.6	2.2	3.3	0.5	2.5	0.8	1.3	0.2	1.9	4.1
Solar panels	12.8	1.2	1.8	2.8	0.6	2.4	0.5	1.5	0.1	0.8	2.7
Other generation technology	18.3	2.3	1.7	3.8	1.1	3.1	0.7	1.1	0.2	Q	4.4
Lighting equipment types (more than one may apply)											
Incandescent	14.7	1.5	2.0	2.6	0.7	3.2	0.8	1.4	0.2	1.0	3.2
Standard fluorescent	12.7	1.5	2.0	2.4	0.5	2.2	0.8	1.3	0.2	1.0	3.0
Compact fluorescent	14.8	1.5	2.0	3.0	0.6	2.6	0.7	1.3	0.2	1.2	3.3
High-intensity discharge (HID)	14.5	1.1	2.1	2.9	0.4	2.9	0.6	0.9	0.1	1.5	3.5
Halogen	15.4	1.2	2.2	2.8	0.7	3.2	0.9	1.6	0.2	1.1	3.1
LED	13.9	1.5	2.0	2.7	0.6	2.3	0.8	1.5	0.2	1.1	3.2
Other	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Refrigeration equipment (more than one may apply)											
Any refrigeration	13.5	1.5	2.0	2.5	0.5	2.3	0.9	1.4	0.2	0.9	3.1
Walk-in units	18.6	1.8	2.4	3.6	0.9	2.8	1.1	2.7	0.2	0.9	4.1
Cases or cabinets	17.5	1.7	2.2	3.3	0.7	2.7	1.1	2.6	0.2	1.1	3.6
Large cold storage areas	23.9	1.5	2.1	3.1	0.7	2.8	1.3	6.2	0.2	0.8	7.0
Commercial ice makers	16.4	1.6	2.4	3.3	0.7	2.6	1.0	2.1	0.2	0.9	3.5
Residential-type or compact units	12.7	1.5	1.9	2.4	0.5	2.3	0.7	1.1	0.2	0.9	2.9
Vending machines	14.5	1.5	2.1	3.0	0.5	2.6	0.6	1.3	0.2	1.0	3.3
No refrigeration	8.5	1.5	2.1	1.4	0.3	1.7	0.5	N	0.1	1.2	2.6
Office equipment (more than one may apply)											
Desktop computers	13.2	1.5	2.0	2.5	0.5	2.3	0.9	1.4	0.2	0.9	3.1
With multiple monitors	13.9	1.4	1.9	2.8	0.4	2.4	0.6	1.1	0.2	1.2	3.3
Laptop computers	13.1	1.4	1.9	2.5	0.5	2.3	0.7	1.2	0.2	1.0	3.0
Dedicated servers	14.1	1.5	1.9	2.7	0.5	2.5	0.6	1.2	0.2	1.4	3.1
Tablets charged in building	14.3	1.5	2.0	2.8	0.6	2.5	0.7	1.3	0.2	1.2	3.2
Large floor-standing office devices ^d	13.3	1.5	1.9	2.7	0.5	2.4	0.5	1.0	0.2	1.1	3.1
Smaller desktop office devices ^d	13.2	1.5	2.0	2.5	0.5	2.3	0.8	1.3	0.2	0.9	3.1
Interactive whiteboards	12.7	1.5	1.9	2.6	0.5	2.1	0.5	0.7	0.2	1.2	3.1
Televisions or video displays	13.9	1.5	2.0	2.7	0.6	2.4	0.7	1.3	0.2	1.0	3.1
Point-of-sale devices or cash registers	16.7	1.8	2.2	3.2	0.7	2.7	1.1	2.3	0.2	0.9	3.5
Food preparation or serving areas in non-food service buildings (more than one may apply)											
Snack bar, concession stand, or coffee shop	15.4	1.3	2.0	3.4	0.6	2.4	0.6	1.8	0.2	1.0	3.3
Fast food or small restaurant	17.9	1.6	1.8	4.2	0.7	3.2	0.6	2.2	0.2	0.9	3.7
Cafeteria or large restaurant	13.7	1.2	2.1	3.2	0.5	2.3	0.6	0.9	0.2	1.0	3.0
Commercial kitchen or food preparation area	16.2	1.4	2.3	3.6	0.7	2.7	0.6	1.8	0.2	0.8	3.5
Small kitchen area	12.0	1.4	1.7	2.4	0.7	2.1	0.5	1.1	0.2	0.8	2.5

Table E6. Electricity consumption intensities (in kilowatthours [kWh]) by end use, 2018

Electricity energy intensity^a (kWh/square foot in buildings using electricity for the end use)

	Total	Space heating	Cooling	Ventilation	Water heating	Lighting	Cooking	Refrigeration	Office equipment	Computing	Other
All buildings	12.6	1.5	2.0	2.3	0.5	2.2	0.9	1.4	0.2	0.9	3.0
Separate computer areas (more than one may apply)											
Server closet	13.5	1.4	1.9	2.7	0.5	2.4	0.7	1.2	0.2	0.9	3.0
Data center	16.2	1.2	1.8	3.9	0.4	2.5	0.6	1.0	0.2	1.6	4.3
Computer-based training room	13.9	1.5	2.0	3.0	0.5	2.4	0.6	1.0	0.2	1.1	3.2
Student or public computer center	12.2	1.4	2.1	2.2	0.7	2.1	0.6	0.9	0.2	0.9	2.9
Window and interior lighting features (more than one may apply)											
Multipaned windows	13.3	1.6	2.0	2.5	0.6	2.3	0.9	1.4	0.2	1.0	3.1
Tinted window glass	14.1	1.5	2.2	2.7	0.5	2.4	0.8	1.4	0.2	1.1	3.1
Reflective window glass	15.5	1.5	1.9	3.1	0.6	2.6	0.7	1.4	0.2	1.5	3.7
External overhangs or awnings	14.3	1.5	2.1	2.5	0.7	2.4	0.9	1.9	0.2	0.9	3.0
Skylights or atriums	13.0	1.3	1.8	2.8	0.4	2.2	0.6	1.1	0.2	1.0	3.0
Light scheduling	15.5	1.5	2.0	3.2	0.6	2.5	0.8	1.6	0.2	1.5	3.5
Occupancy sensors	13.8	1.5	1.9	2.9	0.5	2.2	0.6	1.3	0.2	1.1	3.4
Multilevel lighting or dimming	15.4	1.5	2.1	3.4	0.5	2.2	0.9	1.4	0.2	1.1	3.8
Daylight harvesting	16.4	1.3	1.9	3.7	0.5	2.6	0.5	1.5	0.2	1.9	3.6
Plug-load control	18.4	1.6	2.4	3.3	0.8	2.1	1.1	1.3	0.2	Q	5.3
Demand responsive lighting	12.4	1.4	1.6	2.7	0.6	2.1	0.9	1.3	0.2	0.7	3.0
Building automation system (BAS) for lighting	16.1	1.6	2.1	3.4	0.6	2.6	0.8	1.7	0.2	1.2	3.6
Electric vehicle (EV) charging											
Charging stations associated with the building	12.9	1.2	1.7	2.9	0.4	2.3	0.7	1.1	0.1	1.1	2.9
Annual consumption (kilowatthours)											
10,000 or less	1.5	0.4	0.3	0.1	(*)	0.5	Q	0.1	0.1	0.1	0.6
10,001 to 50,000	4.8	1.0	1.0	0.6	0.1	1.2	0.2	0.4	0.1	0.2	1.3
50,001 to 100,000	8.0	1.4	1.5	1.1	0.3	1.7	0.5	1.1	0.2	0.4	1.9
100,001 to 500,000	11.3	1.5	2.0	1.7	0.5	2.0	1.3	1.7	0.2	0.6	2.3
500,001 to 1,000,000	13.1	2.0	2.2	2.2	0.7	2.2	1.3	1.2	0.1	0.8	2.8
1,000,001 to 5,000,000	16.5	1.6	2.3	3.1	0.6	2.9	0.7	1.8	0.2	1.0	4.0
Over 5,000,000	22.1	1.5	2.6	5.3	0.5	3.2	0.7	1.2	0.2	2.7	5.9

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

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

Estimates for types of equipment represent consumption in buildings that have the equipment, not the consumption by the specific piece of equipment.

HVAC = Heating, ventilation, and air conditioning.

^aThe electricity intensity calculation is conditional on the presence of the end use, and therefore the intensities for each end use will not sum to the total electricity intensity. In this table, each column is calculated as electricity consumption for the end use divided by the floorspace in buildings that use electricity for the particular end use.

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

^c*Other sources* includes wood, coal, solar, and all other energy sources.

^d*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.

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