

Table E10. Fuel oil consumption and energy intensities (gallons) by end use, 2012

	Total fuel oil consumption (million gallons)				Fuel oil energy intensity ¹ (gallons/thousand square feet in buildings using fuel oil for the end use)			
	Total	Space heating	Water heating	Other	Total	Space heating	Water heating	Other
All buildings	974.2	672.9	5.9	295.5	48.2	156.7	3.1	18.2
Building floorspace (square feet)								
1,001 to 5,000	151.3	140.3	Q	Q	250.4	340.6	Q	Q
5,001 to 10,000	74.5	70.3	Q	4.1	133.2	191.8	Q	20.6
10,001 to 25,000	146.9	127.9	Q	18.4	130.8	179.6	Q	46.5
25,001 to 50,000	101.5	70.9	Q	30.3	68.1	124.1	Q	30.9
50,001 to 100,000	170.8	119.5	Q	50.5	60.5	171.3	Q	22.0
100,001 to 200,000	146.5	102.6	0.7	43.3	51.3	187.4	2.8	18.1
200,001 to 500,000	98.2	20.2	0.3	77.8	18.3	33.5	Q	16.2
Over 500,000	84.4	21.1	0.2	63.1	15.7	55.0	1.0	12.6
Principal building activity								
Education	205.4	164.6	1.1	39.8	94.0	156.5	1.6	29.3
Food sales	Q	Q	Q	Q	Q	Q	Q	Q
Food service	Q	Q	Q	Q	Q	Q	Q	Q
Health care	142.4	79.7	0.8	61.8	51.3	166.9	2.4	24.2
Inpatient	117.0	68.9	0.8	47.3	51.9	169.9	3.3	22.8
Outpatient	Q	Q	Q	Q	48.7	Q	Q	Q
Lodging	61.1	Q	Q	26.5	29.8	Q	Q	14.4
Mercantile	68.7	58.3	Q	10.3	61.4	199.0	Q	13.7
Retail (other than mall)	52.9	50.1	Q	Q	116.5	206.1	Q	Q
Enclosed and strip malls	Q	Q	Q	7.6	Q	Q	Q	13.4
Office	131.4	65.4	Q	65.9	24.7	116.9	Q	14.0
Public assembly	47.8	Q	Q	17.8	28.7	Q	Q	11.9
Public order and safety	16.8	Q	Q	12.1	18.5	Q	Q	13.5
Religious worship	38.9	Q	Q	Q	99.5	Q	Q	Q
Service	118.5	112.3	Q	6.2	161.7	285.8	Q	16.5
Warehouse and storage	38.4	Q	Q	18.2	21.6	Q	Q	14.4
Other	71.0	Q	Q	23.8	96.2	Q	Q	49.1
Vacant	Q	Q	Q	Q	Q	Q	Q	Q
Year constructed								
Before 1920	119.0	112.9	Q	3.8	108.2	181.4	Q	9.6
1920 to 1945	104.6	77.8	Q	26.5	72.3	141.3	Q	26.1
1946 to 1959	132.8	111.1	0.5	21.2	86.8	188.0	1.7	20.9
1960 to 1969	143.6	112.8	0.8	30.1	59.7	162.3	2.1	16.8
1970 to 1979	118.4	71.0	Q	46.8	45.3	121.4	Q	21.4
1980 to 1989	113.9	54.8	Q	58.4	29.9	130.0	Q	17.6
1990 to 1999	98.4	54.1	Q	43.9	30.8	147.9	Q	14.9
2000 to 2003	75.2	Q	Q	21.2	51.3	Q	Q	16.8
2004 to 2007	22.2	Q	Q	17.0	14.8	Q	Q	12.3
2008 to 2012	46.1	Q	Q	26.6	40.6	Q	Q	27.3

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All buildings	974.2	672.9	5.9	295.5	48.2	156.7	3.1	18.2
Census region and division								
Northeast	651.8	532.5	3.2	116.1	107.2	188.2	2.3	31.2
New England	343.7	304.6	1.5	37.6	184.2	240.0	2.2	44.3
Middle Atlantic	308.0	227.9	1.7	78.5	73.1	146.1	2.4	27.3
Midwest	107.8	65.9	Q	41.6	27.4	98.8	Q	12.7
East North Central	69.6	Q	Q	26.8	26.6	Q	Q	11.8
West North Central	38.2	23.2	Q	14.8	29.0	Q	Q	14.8
South	166.7	63.9	Q	100.4	23.6	87.7	Q	16.0
South Atlantic	117.8	49.7	Q	65.7	26.7	115.3	Q	16.7
East South Central	21.3	Q	Q	9.5	26.7	Q	Q	13.4
West South Central	27.5	Q	Q	25.2	15.0	Q	Q	15.4
West	48.0	Q	Q	37.3	15.3	Q	Q	12.4
Mountain	Q	Q	Q	Q	12.8	Q	Q	12.0
Pacific	34.1	Q	Q	24.8	16.7	Q	Q	12.6
Climate region²								
Very cold/Cold	592.2	459.3	2.1	130.8	74.0	193.4	1.9	21.9
Mixed-humid	313.9	213.0	3.7	97.2	43.1	127.7	5.2	17.0
Mixed-dry/Hot-dry	17.9	Q	Q	17.9	11.2	Q	Q	11.4
Hot-humid	42.5	Q	Q	42.2	16.4	Q	Q	18.1
Marine	7.6	Q	Q	7.3	10.8	Q	Q	10.9
Number of floors								
One	305.9	227.4	Q	77.2	73.9	166.2	3.6	25.9
Two	232.9	178.2	0.7	54.0	69.0	184.9	1.8	21.4
Three	166.5	139.6	1.0	25.9	79.7	193.7	2.0	18.8
Four to nine	207.0	110.7	Q	93.5	33.1	115.6	Q	17.2
Ten or more	61.8	Q	Q	44.8	14.2	59.7	Q	11.4
Number of workers (main shift)								
Fewer than 5	226.9	213.3	Q	13.3	152.4	213.7	1.0	27.9
5 to 9	65.0	59.1	Q	3.0	90.7	169.7	Q	9.7
10 to 19	82.8	66.4	Q	Q	108.3	213.6	Q	33.0
20 to 49	122.4	82.5	Q	39.4	67.1	152.2	Q	28.3
50 to 99	153.3	101.2	Q	51.2	48.9	129.6	Q	20.4
100 to 249	161.3	89.1	0.5	71.7	39.9	129.6	1.5	20.4
250 or more	162.4	61.3	0.7	100.5	19.7	98.0	2.0	13.3
Weekly operating hours								
Fewer than 40	70.1	62.8	Q	Q	130.3	185.2	Q	Q
40 to 48	193.8	155.0	0.3	38.5	72.6	154.1	0.8	22.0
49 to 60	181.2	134.9	Q	45.7	46.3	144.9	Q	15.9
61 to 84	142.9	103.5	Q	38.9	46.0	127.1	Q	16.6
85 to 167	64.1	Q	Q	32.6	34.3	Q	Q	19.4
Open continuously	322.2	185.2	4.4	132.6	39.7	192.3	8.0	17.8

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	Total	Space heating	Water heating	Other	Total	Space heating	Water heating	Other
All buildings	974.2	672.9	5.9	295.5	48.2	156.7	3.1	18.2
Predominant roof material								
Metal surfacing	166.9	146.7	Q	19.7	82.5	188.6	Q	15.0
Synthetic or rubber	287.9	176.7	0.7	110.4	36.1	132.1	0.9	16.4
Built-up	229.1	135.1	3.2	90.8	39.6	131.6	Q	18.5
Slate or tile shingles	32.4	Q	Q	10.7	44.8	Q	Q	17.3
Wooden materials (including shingles)	Q	Q	Q	Q	Q	Q	Q	Q
Asphalt, fiberglass, or other shingles	195.1	151.5	1.2	42.4	75.9	190.7	3.9	23.0
Concrete	22.3	Q	Q	Q	36.0	Q	Q	Q
Other	Q	Q	Q	Q	Q	Q	Q	Q
No one major type	Q	Q	Q	Q	Q	Q	Q	Q
Roof characteristics								
Roof tilt								
Flat	496.2	281.8	4.0	210.4	34.5	111.6	3.3	17.4
Shallow pitch	247.5	188.9	Q	57.8	63.6	196.8	3.3	19.4
Steeper pitch	230.4	202.2	Q	27.2	119.5	250.3	Q	23.0
Cool roof	237.3	153.0	0.5	83.9	39.0	169.0	1.1	15.7
Renovations in buildings constructed before 2008 (more than one may apply)								
Any type of renovation	583.9	394.8	5.1	183.9	46.5	148.0	3.9	18.0
Addition or annex	248.1	162.8	1.3	84.1	53.6	149.2	1.8	21.0
Reduction in floorspace	Q	Q	Q	7.6	Q	Q	Q	19.0
Roof replacement	397.8	289.2	1.5	107.1	53.9	154.9	1.5	18.6
Exterior wall replacement	81.8	61.0	Q	20.2	50.0	139.7	Q	16.0
Interior wall reconfiguration	283.1	160.6	3.4	119.2	37.2	123.7	4.5	18.4
Window replacement	254.9	190.7	3.4	60.9	60.1	172.6	4.6	18.6
HVAC equipment upgrade	349.9	199.6	4.3	145.9	39.7	128.5	4.5	19.5
Lighting upgrade	378.2	231.7	3.8	142.8	43.8	154.0	4.0	19.1
Electrical upgrade	277.3	173.6	3.2	100.5	49.6	144.0	4.1	21.2
Plumbing system upgrade	243.1	164.8	3.2	75.1	49.5	161.1	4.9	18.7
Insulation upgrade	96.2	54.6	Q	39.0	38.3	101.6	Q	17.9
Fire, safety, or security upgrade	283.5	171.0	3.6	108.8	41.8	138.1	4.7	19.0
Structural upgrade	67.5	36.8	Q	30.5	38.9	100.7	Q	19.8
Other	Q	Q	Q	Q	Q	Q	Q	Q
No renovations	344.2	258.6	0.8	84.9	52.8	168.6	1.3	16.7
Buildings constructed 2008 or later	46.1	Q	Q	26.6	40.6	Q	Q	27.3

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	Total	Space heating	Water heating	Other	Total	Space heating	Water heating	Other
All buildings	974.2	672.9	5.9	295.5	48.2	156.7	3.1	18.2
Energy sources (more than one may apply)								
Electricity	974.2	672.9	5.9	295.5	48.2	156.7	3.1	18.2
Natural gas	298.1	127.1	0.9	170.0	21.8	68.5	1.4	14.3
Fuel oil	974.2	672.9	5.9	295.5	48.2	156.7	3.1	18.2
District heat	46.6	Q	Q	44.5	15.0	Q	Q	14.9
District chilled water	31.8	Q	Q	31.6	14.9	Q	Q	15.1
Propane	313.5	232.9	4.0	76.5	101.8	185.3	4.9	35.1
Other	58.9	30.1	Q	28.4	52.0	96.8	Q	31.0
Space-heating energy sources								
Fuel oil	753.4	672.9	2.9	77.7	173.1	156.7	1.8	60.3
Fuel oil main	714.8	644.3	2.6	67.9	281.2	253.4	2.1	118.3
Fuel oil secondary	38.7	28.6	Q	9.8	21.4	16.3	Q	13.8
Other excluding fuel oil	207.4	N	Q	204.4	13.5	N	Q	14.0
Buildings without heating	13.4	N	Q	13.3	25.3	N	Q	30.9
Primary space-heating energy source								
Electricity	70.7	3.0	Q	65.0	15.2	7.2	Q	15.3
Natural gas	116.6	15.4	0.2	101.1	12.9	14.4	0.4	12.8
Fuel oil	714.8	644.3	2.6	67.9	281.2	253.4	2.1	118.3
District heat	37.9	Q	Q	37.7	12.7	Q	Q	13.1
Propane	Q	Q	N	Q	Q	Q	N	Q
Other	Q	Q	Q	Q	Q	Q	Q	Q
Cooling energy sources								
Fuel oil	Q	Q	Q	Q	Q	Q	Q	Q
Other excluding fuel oil	794.2	507.7	5.3	281.2	41.3	143.2	3.2	17.5
Buildings without cooling	161.5	157.1	Q	Q	181.2	227.2	Q	Q
Water-heating energy sources								
Fuel oil	433.5	352.5	5.9	75.0	226.8	218.0	3.1	83.3
Other excluding fuel oil	477.2	268.0	N	209.2	26.8	108.8	N	13.8
Buildings without water heating	63.6	52.3	N	Q	129.1	245.7	N	Q
Cooking energy sources								
Fuel oil	Q	Q	Q	Q	Q	Q	Q	Q
Other excluding fuel oil	540.1	361.0	5.0	174.1	42.8	152.3	3.6	16.4
Buildings without cooking	423.2	307.5	Q	114.9	56.4	162.1	Q	20.6
Energy end uses (more than one may apply)								
Buildings with space heating	960.8	672.9	5.8	282.1	48.8	156.7	3.2	17.8
Buildings with cooling	812.7	515.7	5.4	291.7	42.1	143.2	3.1	18.1
Buildings with water heating	910.7	620.6	5.9	284.2	46.2	152.1	3.1	17.7
Buildings with cooking	551.0	365.4	5.1	180.5	43.4	152.5	3.6	16.9
Buildings with manufacturing	46.6	Q	Q	24.5	54.0	Q	Q	47.3
Buildings with electricity generation	491.5	210.5	1.9	279.1	28.8	131.7	1.9	17.5

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All buildings	974.2	672.9	5.9	295.5	48.2	156.7	3.1	18.2
Percent of floorspace heated								
Not heated	13.4	N	Q	13.3	25.3	N	Q	30.9
1 to 50	69.3	44.2	Q	25.0	34.5	58.8	Q	19.3
51 to 99	132.4	82.1	0.3	49.9	34.7	136.7	0.8	15.7
100	759.2	546.5	5.4	207.2	54.8	185.8	4.2	18.2
Heating equipment (more than one may apply)								
Heat pumps	88.1	31.7	Q	53.6	28.9	62.7	Q	19.4
Furnaces	53.7	42.9	Q	10.7	61.8	234.3	Q	14.9
Individual space heaters	275.3	196.8	1.1	77.4	46.9	121.1	2.0	17.0
District heat	44.1	Q	Q	42.0	14.3	Q	Q	14.1
Boilers	582.7	417.0	2.8	162.9	62.4	165.8	1.9	22.3
Packaged heating units	335.5	212.9	0.8	121.8	35.0	123.2	1.5	14.9
Other	Q	Q	Q	Q	Q	Q	Q	Q
Water-heating equipment								
Centralized system	615.7	460.7	4.8	150.2	56.1	161.9	3.6	17.9
Distributed system	97.8	53.9	Q	43.8	39.0	105.1	Q	22.1
Combination of centralized and distributed system	197.1	105.9	1.1	90.2	31.7	146.9	2.3	16.0
Food preparation or serving areas in non-food service buildings (more than one may apply)								
Snack bar or concession stand	114.4	53.2	0.6	60.6	23.5	101.1	1.5	13.7
Fast food or small restaurant	59.7	Q	Q	41.8	16.5	Q	Q	12.6
Cafeteria or large restaurant	306.3	193.6	2.0	110.7	43.2	146.5	2.3	18.5
Commercial kitchen/ food preparation area	236.7	133.8	3.6	99.3	35.4	120.2	5.5	17.0
Small kitchen area	224.8	163.3	0.7	60.8	48.2	179.5	1.4	15.7
HVAC conservation features (more than one may apply)								
Economizer cycle	313.2	145.1	1.1	167.0	27.8	101.4	1.4	16.4
Regular HVAC maintenance	809.0	515.9	5.6	287.6	42.8	148.9	3.1	18.1
Building automation system (BAS) ³	422.8	209.6	1.6	211.7	30.5	133.1	1.9	16.9
Equipment usage reduced when building not in full use (more than one may apply)								
Heating	672.7	486.4	4.1	182.2	47.5	152.1	2.9	16.6
Cooling	566.4	376.1	3.9	186.4	40.6	142.0	3.0	16.3
Lighting	896.9	618.3	5.4	273.2	47.4	153.0	2.9	18.0

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All buildings	974.2	672.9	5.9	295.5	48.2	156.7	3.1	18.2
Annual consumption (gallons)								
1,000 or less	98.5	59.1	Q	38.4	10.9	39.8	Q	5.5
1,001 to 5,000	238.9	173.2	Q	63.2	49.5	165.9	Q	16.1
5,001 to 10,000	189.7	129.7	Q	59.5	75.1	282.0	Q	26.9
10,001 to 25,000	156.3	99.9	0.3	56.1	67.9	194.7	0.8	28.7
Over 25,000	290.8	210.9	1.6	78.3	194.1	266.5	3.1	64.6

(*) May 2018 revision: the units for *Fuel oil energy intensity* were corrected from *gallons/square foot* to *gallons/thousand square feet*.

¹The fuel oil intensity calculation (fuel oil consumption for the end use divided by the floorspace in buildings that use fuel oil for the particular end use) differs from the calculation used in the 2003 CBECS tables, in which the intensities were not conditional on the presence of the end use; the 2003 CBECS denominator was total floorspace in all buildings that used fuel oil. In this table, the intensities for each end use do not sum to the total fuel oil intensity, whereas they did in the 2003 CBECS table.

²These 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).

³In 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.

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/> • 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 F of the 2012 Commercial Buildings Energy Consumption Survey.