

**Table C23. Fuel Oil Consumption and Conditional Energy Intensity by Census Region, 1999**

|  | Total Fuel Oil Consumption<br>(million gallons) |          |       |      | Total Floorspace of Buildings Using Fuel Oil<br>(million square feet) |          |       |       | Fuel Oil Energy Intensity<br>(gallons/square foot) |          |       |      |
|--|---|----------|-------|------|---|----------|-------|-------|--|----------|-------|------|
|  | North-east                                      | Mid-west | South | West | North-east  | Mid-west | South | West  | North-east   | Mid-west | South | West |
| <b>All Buildings</b> .....               | 994   | 34       | 210   | 56   | 5,414   | 2,423    | 3,749 | 1,699 | 0.18   | 0.01     | 0.06  | 0.03 |
| <b>Building Floorspace (Square Feet)</b> |   |          |       |      |   |          |       |       |  |          |       |      |
| 1,001 to 10,000 .....                    | 229   | Q        | 77    | Q    | 693   | Q        | 366   | Q     | 0.33   | Q        | 0.21  | Q    |
| 10,001 to 100,000 .....                  | 430   | Q        | Q     | Q    | 1,758   | 526      | 930   | 363   | 0.24   | Q        | 0.07  | Q    |
| Over 100,000 .....                       | 335   | 15       | 68    | Q    | 2,963   | 1,815    | 2,452 | 1,273 | 0.11   | 0.01     | 0.03  | Q    |
| <b>Principal Building Activity</b>       |   |          |       |      |   |          |       |       |  |          |       |      |
| Education .....                          | 273   | Q        | Q     | Q    | 923   | Q        | 301   | Q     | 0.30   | Q        | 0.16  | Q    |
| Mercantile and Service .....             | Q   | Q        | Q     | Q    | 1,065   | Q        | 556   | Q     | 0.18   | Q        | Q     | Q    |
| Office .....                             | 154   | 4        | 51    | Q    | 1,271   | 749      | 1,310 | 584   | 0.12   | 0.00     | 0.04  | 0.01 |
| Public Assembly .....                    | Q   | Q        | Q     | Q    | Q   | Q        | Q     | Q     | Q  | Q        | Q     | Q    |
| Warehouse and Storage .....              | 38  | Q        | Q     | Q    | 489   | Q        | Q     | Q     | 0.08   | Q        | Q     | Q    |
| All Others .....                         | 255   | 11       | Q     | Q    | 1,229   | 622      | 1,227 | 654   | 0.21   | 0.02     | 0.04  | Q    |
| <b>Year Constructed</b>                  |   |          |       |      |   |          |       |       |  |          |       |      |
| 1945 or Before .....                     | 306   | Q        | Q     | Q    | 1,404   | Q        | Q     | Q     | 0.22   | Q        | Q     | Q    |
| 1946 to 1959 .....                       | 173   | Q        | Q     | Q    | 969   | Q        | Q     | Q     | 0.18   | Q        | Q     | Q    |
| 1960 to 1969 .....                       | 199   | Q        | 47    | Q    | 877   | Q        | 723   | 343   | 0.23   | Q        | 0.06  | Q    |
| 1970 to 1979 .....                       | 155   | Q        | Q     | 4    | 835   | 393      | 795   | 422   | 0.19   | Q        | 0.04  | 0.01 |
| 1980 to 1989 .....                       | 104   | Q        | Q     | Q    | 790   | 619      | 1,068 | 318   | 0.13   | Q        | Q     | Q    |
| 1990 to 1999 .....                       | 57  | Q        | Q     | Q    | 538   | 427      | 763   | 380   | 0.11   | Q        | Q     | Q    |
| <b>Climate Zone: 45-Year Average</b>     |   |          |       |      |   |          |       |       |  |          |       |      |
| Under 2,000 CDD and --                   |   |          |       |      |   |          |       |       |  |          |       |      |
| More than 7,000 HDD .....                | 280   | Q        | N     | Q    | 843   | 714      | N     | Q     | 0.33   | 0.02     | N     | Q    |
| 5,500-7,000 HDD .....                    | 418   | Q        | N     | Q    | 2,289   | 1,228    | N     | 256   | 0.18   | Q        | N     | Q    |
| 4,000-5,499 HDD .....                    | 296   | Q        | 158   | Q    | 2,282   | 480      | 1,357 | 412   | 0.13   | Q        | 0.12  | 0.10 |
| Fewer than 4,000 HDD .....               | N   | N        | Q     | 5    | N   | N        | 1,139 | 764   | N  | N        | Q     | 0.01 |
| 2,000 CDD or More and --                 |   |          |       |      |   |          |       |       |  |          |       |      |
| Fewer than 4,000 HDD .....               | N   | N        | 12    | Q    | N   | N        | 1,253 | Q     | N  | N        | 0.01  | Q    |
| <b>Workers (main shift)</b>              |   |          |       |      |   |          |       |       |  |          |       |      |
| Less than 10.....                        | 228   | Q        | 59    | Q    | 1,085   | Q        | 387   | Q     | 0.21   | Q        | 0.15  | Q    |
| 10 to 99.....                            | 480   | Q        | Q     | Q    | 1,736   | 567      | 935   | 326   | 0.28   | Q        | 0.08  | 0.06 |
| 100 or More.....                         | 286   | 17       | 75    | 16   | 2,593   | 1,663    | 2,428 | 1,278 | 0.11   | 0.01     | 0.03  | 0.01 |
| <b>Weekly Operating Hours</b>            |   |          |       |      |   |          |       |       |  |          |       |      |
| 48 or fewer.....                         | 222   | Q        | Q     | Q    | 988   | Q        | 549   | Q     | 0.22   | Q        | 0.14  | Q    |
| 49 to 84.....                            | 421   | Q        | 88    | Q    | 2,379   | 825      | 1,385 | 550   | 0.18   | Q        | 0.06  | Q    |
| 85 to 168.....                           | 350   | 16       | 48    | Q    | 2,047   | 1,250    | 1,816 | 991   | 0.17   | 0.01     | 0.03  | Q    |
| <b>Ownership and Occupancy</b>           |   |          |       |      |   |          |       |       |  |          |       |      |
| Nongovernment Owned .....                | 672   | 20       | 158   | 25   | 3,789   | 1,842    | 2,926 | 1,336 | 0.18   | 0.01     | 0.05  | 0.02 |
| Owner Occupied .....                     | 581   | 19       | 134   | 22   | 3,284   | 1,499    | 2,350 | 1,152 | 0.18   | 0.01     | 0.06  | 0.02 |
| Nonowner Occupied .....                  | 91  | Q        | Q     | Q    | 503   | Q        | 576   | Q     | 0.18   | Q        | Q     | Q    |
| Unoccupied .....                         | Q   | N        | Q     | N    | Q   | N        | Q     | N     | Q  | N        | Q     | N    |
| Government Owned .....                   | 322   | Q        | Q     | Q    | 1,625   | 581      | 823   | 363   | 0.20   | Q        | 0.06  | Q    |
| Federal .....                            | Q   | Q        | Q     | Q    | Q   | Q        | Q     | Q     | Q  | Q        | Q     | Q    |
| State .....                              | Q   | Q        | Q     | Q    | Q   | Q        | Q     | Q     | Q  | Q        | Q     | Q    |
| Local .....                              | 278   | Q        | Q     | Q    | 954   | Q        | 480   | Q     | 0.29   | Q        | 0.09  | Q    |
| <b>Vacancy Status</b>                    |   |          |       |      |   |          |       |       |  |          |       |      |
| Completely Vacant.....                   | N   | N        | N     | N    | N   | N        | N     | N     | N  | N        | N     | N    |
| Mostly Vacant .....                      | Q   | N        | N     | Q    | Q   | N        | N     | Q     | Q  | N        | N     | Q    |
| Partially Vacant .....                   | 150   | 3        | 15    | Q    | 1,273   | 541      | 1,159 | 555   | 0.12   | 0.00     | 0.01  | Q    |
| Not At All Vacant .....                  | 838   | 32       | 195   | 49   | 4,029   | 1,881    | 2,590 | 1,138 | 0.21   | 0.02     | 0.08  | 0.04 |

**Table C23. Fuel Oil Consumption and Conditional Energy Intensity by Census Region, 1999**

|  | Total Fuel Oil Consumption<br>(million gallons) |          |       |      | Total Floorspace of Buildings Using Fuel Oil<br>(million square feet) |          |       |       | Fuel Oil Energy Intensity<br>(gallons/square foot) |          |       |      |
|--|---|----------|-------|------|---|----------|-------|-------|--|----------|-------|------|
|  | North-east                                      | Mid-west | South | West | North-east  | Mid-west | South | West  | North-east   | Mid-west | South | West |
| <b>Number of Establishments</b>                  |   |          |       |      |   |          |       |       |  |          |       |      |
| One .....  | 737   | 29       | 169   | 49   | 3,512   | 1,621    | 2,211 | 982   | 0.21   | 0.02     | 0.08  | 0.05 |
| 2 to 5 .....                                     | 148   | Q        | Q     | Q    | 715   | Q        | 545   | 224   | 0.21   | Q        | Q     | Q    |
| 6 to 10 .....                                    | Q   | Q        | Q     | Q    | Q   | Q        | Q     | Q     | Q  | Q        | Q     | Q    |
| 11 to 20 .....                                   | Q   | Q        | Q     | Q    | Q   | Q        | Q     | Q     | Q  | Q        | Q     | Q    |
| More than 20 .....                               | Q   | Q        | Q     | 1    | 691   | Q        | 578   | 317   | 0.04   | Q        | Q     | 0.00 |
| Currently Unoccupied .....                       | Q   | N        | Q     | N    | Q   | N        | Q     | N     | Q  | N        | Q     | N    |
| <b>Energy Sources (more than one may apply)</b>  |   |          |       |      |   |          |       |       |  |          |       |      |
| Electricity .....                                | 991   | 34       | 210   | 56   | 5,406   | 2,423    | 3,749 | 1,699 | 0.18   | 0.01     | 0.06  | 0.03 |
| Natural Gas .....                                | 303   | 20       | 79    | Q    | 2,569   | 1,945    | 2,269 | 1,306 | 0.12   | 0.01     | 0.03  | Q    |
| Fuel Oil .....                                   | 994   | 34       | 210   | 56   | 5,414   | 2,423    | 3,749 | 1,699 | 0.18   | 0.01     | 0.06  | 0.03 |
| District Heat .....                              | Q   | Q        | Q     | Q    | Q   | Q        | Q     | Q     | Q  | Q        | Q     | Q    |
| District Chilled Water .....                     | Q   | Q        | 1     | Q    | Q   | Q        | 276   | Q     | Q  | Q        | 0.00  | Q    |
| Propane .....                                    | 276   | Q        | Q     | Q    | 1,076   | Q        | 604   | Q     | 0.26   | Q        | 0.12  | Q    |
| Other .....                                      | Q   | Q        | Q     | Q    | Q   | Q        | Q     | Q     | Q  | Q        | Q     | Q    |
| <b>Space-Heating Energy Source</b>               |   |          |       |      |   |          |       |       |  |          |       |      |
| Fuel Oil .....                                   | 980   | 26       | 191   | Q    | 3,612   | 619      | 1,128 | 252   | 0.27   | 0.04     | 0.17  | 0.18 |
| Fuel Oil Main .....                              | 882   | Q        | 167   | Q    | 2,803   | Q        | 718   | Q     | 0.31   | Q        | 0.23  | Q    |
| Fuel Oil Secondary .....                         | 98  | 15       | 23    | Q    | 809   | 579      | 410   | Q     | 0.12   | 0.03     | 0.06  | Q    |
| Other Excluding Fuel Oil .....                   | 13  | 8        | 17    | 11   | 1,802   | 1,804    | 2,444 | 1,414 | 0.01   | 0.00     | 0.01  | 0.01 |
| Buildings without Heating .....                  | N   | N        | Q     | Q    | N   | N        | Q     | Q     | N  | N        | Q     | Q    |
| <b>Primary Space-Heating Energy Source</b>       |   |          |       |      |   |          |       |       |  |          |       |      |
| Electricity .....                                | Q   | Q        | Q     | Q    | 556   | Q        | 1,368 | 335   | Q  | Q        | 0.01  | Q    |
| Natural Gas .....                                | 50  | 19       | 20    | 7    | 1,111   | 1,611    | 1,180 | 949   | 0.04   | 0.01     | 0.02  | 0.01 |
| Fuel Oil .....                                   | 882   | Q        | 167   | Q    | 2,803   | Q        | 718   | Q     | 0.31   | Q        | 0.23  | Q    |
| District Heat .....                              | 4   | Q        | 2     | Q    | 791   | Q        | 278   | Q     | 0.00   | Q        | 0.01  | Q    |
| Propane .....                                    | Q   | Q        | Q     | Q    | Q   | Q        | Q     | Q     | Q  | Q        | Q     | 0.32 |
| Other .....                                      | Q   | Q        | N     | N    | Q   | Q        | N     | N     | Q  | Q        | N     | N    |
| <b>Cooling Energy Source</b>                     |   |          |       |      |   |          |       |       |  |          |       |      |
| Fuel Oil .....                                   | Q   | Q        | Q     | N    | Q   | Q        | Q     | N     | Q  | Q        | Q     | N    |
| Other Excluding Fuel Oil .....                   | 766   | 30       | 187   | Q    | 4,507   | 2,362    | 3,604 | 1,585 | 0.17   | 0.01     | 0.05  | Q    |
| Buildings without Cooling .....                  | 188   | Q        | Q     | Q    | 806   | Q        | Q     | Q     | 0.23   | Q        | Q     | Q    |
| <b>Water-Heating Energy Source</b>               |   |          |       |      |   |          |       |       |  |          |       |      |
| Fuel Oil .....                                   | 569   | Q        | Q     | Q    | 1,678   | Q        | Q     | Q     | 0.34   | Q        | 0.19  | Q    |
| Other Excluding Fuel Oil .....                   | 336   | 20       | 117   | 33   | 3,065   | 2,061    | 3,060 | 1,448 | 0.11   | 0.01     | 0.04  | 0.02 |
| Buildings without Water Heating .....            | 88  | Q        | Q     | Q    | 671   | Q        | 362   | Q     | 0.13   | Q        | 0.08  | Q    |
| <b>Cooking Energy Source</b>                     |   |          |       |      |   |          |       |       |  |          |       |      |
| Fuel Oil .....                                   | Q   | Q        | Q     | N    | Q   | Q        | Q     | N     | Q  | Q        | Q     | N    |
| Other Excluding Fuel Oil .....                   | 453   | 20       | Q     | Q    | 2,974   | 1,330    | 2,353 | 1,100 | 0.15   | 0.02     | 0.04  | 0.02 |
| Buildings without Cooking .....                  | 529   | 14       | 104   | 30   | 2,412   | 1,076    | 1,357 | 600   | 0.22   | 0.01     | 0.08  | 0.05 |
| <b>Energy End Uses (more than one may apply)</b> |   |          |       |      |   |          |       |       |  |          |       |      |
| Buildings with Space Heating .....               | 994   | 34       | 208   | 56   | 5,414   | 2,423    | 3,572 | 1,665 | 0.18   | 0.01     | 0.06  | 0.03 |
| Buildings with Cooling .....                     | 805   | 30       | 188   | Q    | 4,608   | 2,364    | 3,628 | 1,585 | 0.17   | 0.01     | 0.05  | Q    |
| Buildings with Water Heating .....               | 906   | 33       | 181   | 53   | 4,743   | 2,173    | 3,388 | 1,548 | 0.19   | 0.02     | 0.05  | 0.03 |
| Buildings with Cooking .....                     | 464   | 21       | Q     | Q    | 3,002   | 1,346    | 2,392 | 1,100 | 0.15   | 0.02     | 0.04  | 0.02 |
| Buildings with Manufacturing .....               | Q   | Q        | Q     | Q    | Q   | Q        | Q     | Q     | Q  | Q        | Q     | Q    |
| Buildings with Electricity Generation .....      | 252   | 14       | Q     | Q    | 2,547   | 1,874    | 2,871 | 1,457 | 0.10   | 0.01     | 0.02  | Q    |

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|   | Total Fuel Oil Consumption<br>(million gallons) |          |       |      | Total Floorspace of Buildings Using Fuel Oil<br>(million square feet) |          |       |       | Fuel Oil Energy Intensity<br>(gallons/square foot) |          |       |      |
|---|---|----------|-------|------|---|----------|-------|-------|--|----------|-------|------|
|   | North-east                                      | Mid-west | South | West | North-east  | Mid-west | South | West  | North-east   | Mid-west | South | West |
| <b>Percent of Floorspace Heated</b>                     |   |          |       |      |   |          |       |       |  |          |       |      |
| Not Heated .....  | N   | N        | Q     | Q    | N   | N        | Q     | Q     | N  | N        | Q     | Q    |
| 1 to 50 .....   | Q   | Q        | Q     | Q    | Q   | Q        | Q     | Q     | Q  | Q        | Q     | Q    |
| 51 to 99 .....  | 90  | Q        | 53    | Q    | 776   | Q        | 1,083 | 460   | 0.12   | Q        | 0.05  | Q    |
| 100 .....   | 850   | 32       | 148   | Q    | 4,194   | 2,055    | 2,292 | 835   | 0.20   | 0.02     | 0.06  | Q    |
| <b>Heating Equipment (more than one may apply)</b>      |   |          |       |      |   |          |       |       |  |          |       |      |
| Heat Pumps .....  | 37  | Q        | Q     | Q    | 636   | Q        | 893   | 359   | 0.06   | Q        | Q     | 0.01 |
| Furnaces .....  | 165   | Q        | Q     | Q    | 913   | Q        | 578   | Q     | 0.18   | Q        | Q     | Q    |
| Individual Space Heaters .....                          | 166   | Q        | 48    | Q    | 1,630   | 1,019    | 1,234 | 468   | 0.10   | 0.01     | 0.04  | Q    |
| District Heat .....                                     | Q   | Q        | 2     | Q    | 852   | Q        | 341   | 253   | Q  | Q        | 0.01  | Q    |
| Boilers .....   | 818   | 28       | 142   | Q    | 3,485   | 1,419    | 1,594 | 987   | 0.23   | 0.02     | 0.09  | 0.03 |
| Packaged Heating Units .....                            | 132   | 5        | 37    | Q    | 1,351   | 869      | 1,405 | 612   | 0.10   | 0.01     | 0.03  | Q    |
| Other .....   | 34  | Q        | Q     | Q    | 398   | Q        | 535   | Q     | 0.09   | Q        | Q     | Q    |
| <b>Water Heating Equipment</b>                          |   |          |       |      |   |          |       |       |  |          |       |      |
| Centralized System .....                                | 645   | 22       | 158   | Q    | 2,609   | 1,131    | 2,013 | 780   | 0.25   | 0.02     | 0.08  | Q    |
| Distributed System .....                                | 125   | Q        | Q     | Q    | 874   | Q        | 474   | Q     | 0.14   | Q        | 0.03  | Q    |
| Combination of Centralized and Distributed System ..... | 136   | 9        | 9     | Q    | 1,259   | 723      | 900   | 565   | 0.11   | 0.01     | 0.01  | 0.02 |
| <b>Annual Consumption (gallons)</b>                     |   |          |       |      |   |          |       |       |  |          |       |      |
| 1,000 or Less .....                                     | 43  | 6        | 21    | Q    | 2,009   | 1,701    | 2,457 | 1,213 | 0.02   | 0.00     | 0.01  | 0.00 |
| 1,001 to 5,000 .....                                    | 219   | 6        | 76    | 20   | 1,087   | 365      | 700   | 266   | 0.20   | 0.02     | 0.11  | 0.07 |
| 5,001 to 10,000 .....                                   | 155   | Q        | Q     | Q    | 481   | Q        | Q     | Q     | 0.32   | Q        | Q     | Q    |
| 10,001 to 25,000 .....                                  | 138   | Q        | 46    | Q    | 502   | Q        | 289   | Q     | 0.27   | Q        | 0.16  | Q    |
| Over 25,000 .....                                       | 439   | Q        | Q     | Q    | 1,334   | Q        | Q     | Q     | 0.33   | Q        | Q     | Q    |

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

N=No responding cases in sample.

Notes: \* Statistics for the "energy end uses" represent consumption in buildings that have the end use, not consumption for a particular fuel for a particular end use. \* Due to rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Form EIA-871A of the 1999 Commercial Buildings Energy Consumption Survey.