

<b>2003 CBECS<sup>1</sup> National Median Source Energy Use and Performance Comparisons by Building Type</b>			
<b>Building Use Description<sup>2</sup></b>	<b>Median Source EUI<sup>3</sup> (kBtu/Sqft)</b>	<b>Average Percent (%) Electric Use</b>	<b>Median Site EUI (kBtu/Sqft)</b>
<b>Education</b>	144	63%	58
K-12 School	<i>Use EPA's Target Finder / Portfolio Manager</i>		
College/University (campus level)	244	63%	104
<b>Food Sales</b>	570	86%	193
Grocery Store/Food Market	<i>Use EPA's Target Finder / Portfolio Manager</i>		
Convenience store (with or without gas station)	657	90%	228
<b>Food Service</b>	575	59%	267
Restaurant/Cafeteria	434	53%	207
Fast Food	1170	64%	418
<b>Inpatient Health Care (Hospital)</b>	<i>Use EPA's Target Finder / Portfolio Manager</i>		
<b>Lodging</b>	163	61%	72
Dormitory/Fraternity/Sorority	<i>Use EPA's Target Finder / Portfolio Manager</i>		
Hotel/Motel/Inn	<i>Use EPA's Target Finder / Portfolio Manager</i>		
<b>Mall (Strip and Enclosed)</b>	247	71%	94
<b>Nursing/Assisted Living</b>	<i>Use EPA's Target Finder / Portfolio Manager</i>		
<b>Office</b>	<i>Use EPA's Target Finder / Portfolio Manager</i>		
<b>Outpatient and Health Care</b>	163	72%	62
Clinic/Other Outpatient Health	194	76%	67
Medical Office	<i>Use EPA's Target Finder / Portfolio Manager</i>		
<b>Public Assembly</b>	89	57%	42
Entertainment/Culture	94	63%	46
Library	246	59%	92
Recreation	100	55%	39
Social/Meeting	71	57%	43
<b>Public Order and Safety</b>	161	57%	82
Fire/Police Station	146	56%	82
<b>Service (Vehicle Repair/Service, Postal Service)</b>	96	63%	45
<b>Storage/Shipping/Non-Refrigerated Warehouse</b>	28	56%	10
Non-Refrigerated Warehouse/Distribution Center	<i>Use EPA's Target Finder / Portfolio Manager</i>		
<b>Refrigerated Warehouse</b>	<i>Use EPA's Target Finder / Portfolio Manager</i>		
<b>Religious Worship</b>	<i>Use EPA's Target Finder / Portfolio Manager</i>		
<b>Retail (non-Mall Stores, Vehicle Dealerships)</b>	139	67%	53
<b>Other<sup>4</sup></b>	127	56%	70

For instructions on how to use the table and footnotes, see page 2

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## Instructions on how to use the table:

The building types listed in blue shaded rows define the broad building activity category; while the sub-categories (listed beneath the main headings) are delineated into more specific building activities.

## To identify your building's activity category from the table:

1. Determine the building's general function within the broad activity category (blue shaded rows).
2. Determine if there is a more specific function of the building listed under the broader category heading (in the non-shaded rows).
3. Match your building's function with the most specific Building Use Description listing (under the broad activity category or sub-heading) to determine the most appropriate energy use performance target.

## Footnotes

<sup>1</sup> **Commercial Building Energy Consumption Survey (CBECS)**, conducted in 2003, was used to calculate values presented in this table. The data is gathered from the Dept. of Energy's – Energy Information Administration (EIA). These are building types that are not currently available in EPA's Target Finder and Portfolio Manager.

<sup>2</sup> **Buildings Use Descriptions** are taken from valid building activities as defined by EIA in the 2003 CBECS data. The building type in the blue shaded rows is defined according to the CBECS variable for "Principal Building Activity" (PBA8) which is a broader defined category. The subset of building types listed below those broader categories is defined according to the CBECS variable for PBAPLUS8. These are defined as a more specific building activity within the broader PBA8 category. Note: All building type definitions can be found at: [http://www.eia.doe.gov/emeu/cbecs/building\\_types.html](http://www.eia.doe.gov/emeu/cbecs/building_types.html)

<sup>3</sup> **Median Energy Values** are computed by calculating the EUI for each individual building and then computing a median EUI for each category, applying the CBECS survey sample weights. The median represents the 50th percentile of a distribution (i.e. group or sample) of numbers. When the numbers in the group are ranked from smallest to largest, the median is the number in the middle. Half of the numbers in the group fall above the median and half of the numbers fall below the median. It is comparable to a score of 50 on the ENERGY STAR performance scale – where half of the buildings of a given type use more energy than the median and half of the buildings use less energy.

**Source Energy** is a measure that accounts for the energy consumed on site in addition to energy consumed during generation and transmission in supplying energy to the site.

**Converting site to source energy:** Source energy values are calculated using a conversion factor for electricity of 1 kBtu site energy = 3.34 kBtu source energy; a conversion factor for natural gas of 1 kBtu site energy = 1.047 kBtu source energy; a conversion factor for fuel oil of 1 kBtu site energy = 1.01 for district heat consumption, a conversion factor of 1 kBtu site energy = 1.21 kBtu source energy for steam and a conversion factor of 1 kBtu site energy = 1.28 kBtu source energy for hot water. Note: More information on site-to-source energy conversions can be found at: [http://www.energystar.gov/index.cfm?c=evaluate\\_performance.bus\\_benchmark\\_comm\\_bldgs](http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_benchmark_comm_bldgs)

**Explanation of Source Energy:** The source energy intensity target cannot simply be converted into an equivalent site energy value because different design strategies may yield different fuel mixes. Thus the different fuel mixes translate into the corresponding site to source ratios for a specific building. It is important to note that reducing source energy by 50% is not always mathematically equivalent to reducing site energy by 50%. For the most equitable peer comparison, the associated fuel mix should be used to convert the modeled site energy into the total source energy. The source energy use can then be compared to the values in this table.

<sup>4</sup> **Other:** For all building types not defined by the list above, these buildings may choose to use the performance benchmark categorized by "other". Note that this category is not well defined therefore source energy use varies greatly with source EUI ranging over 1500 kBtu/sqft. As categorized by EIA, "other" may include airplane hangers, laboratory, crematorium, data center, etc.