Energy Use in Courthouses

Courthouses Using Portfolio Manager
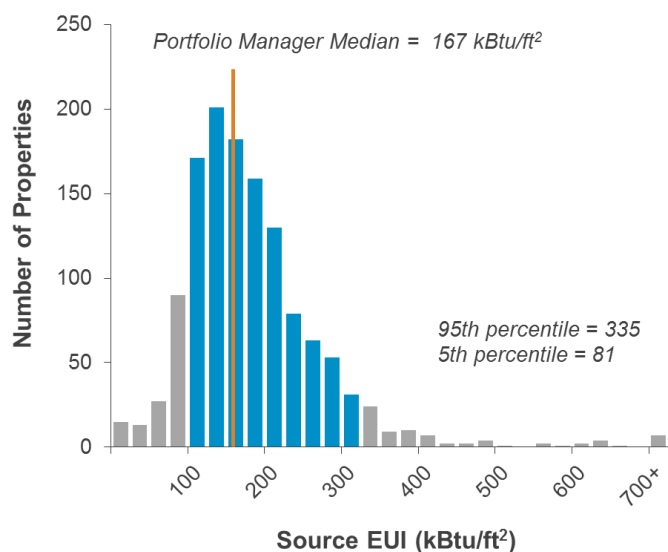
1,785 Properties

235.8 Million ft^2

62 Average ENERGY STAR Score

The U.S. Environmental Protection Agency's (EPA) ENERGY STAR Portfolio Manager is changing the way organizations track and manage energy. Because of this widespread market adoption, EPA has prepared the DataTrends series to examine benchmarking and trends in energy and water consumption in Portfolio Manager. To learn more, visit www.energystar.gov/DataTrends.

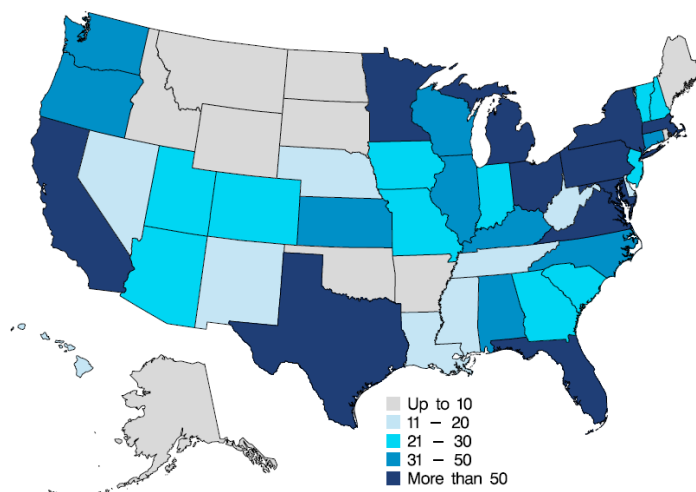## What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 100 to more than 700 kBtu/ft^2 across all courthouses, with those at the 95th percentile using more than 4 times the energy of those at the 5th percentile. The distribution has a negative skew, which means the most energy intensive properties are further away from the median than the most efficient. Properties may use more or less energy for many reasons, including variable equipment efficiency and energy management practices, as well as variations in climate and business activities.

Benchmarking by State
Number of Courthouses

Up to 10
11 — 20
21 — 30
31 — 50
More than 50

Portfolio Manager Median = 167 kBtu/ft^2

95th percentile = 335
5th percentile = 81

Number of Properties (y-axis)
Source EUI (kBtu/ft^2) (x-axis)

The median courthouse in Portfolio Manager is 65,000 square feet and operates 55 hours per week. But the typical property use patterns observed in Portfolio Manager vary just as much as energy. As you can see, there are courthouses of all shapes and sizes benchmarking in Portfolio Manager.

Property Characteristic	**Range of Values**		
	5th percentile	Median	95th percentile
Square Feet	10,000	65,000	490,000
Weekly Operating Hours	40	55	96
Workers per 1,000 ft^2	0.4	1.8	3.4
Computers per 1,000 ft^2	0.5	1.9	3.1
Heating Degree Days	722	4,799	7,929
Cooling Degree Days	243	1,103	3,563

What is Source Energy? Source energy is the amount of raw fuel required to operate your property. In addition to what you use on site, source energy includes losses from generation, transmission, and distribution of energy. Source energy enables the most complete and equitable energy assessment. Learn more at: www.energystar.gov/SourceEnergy.
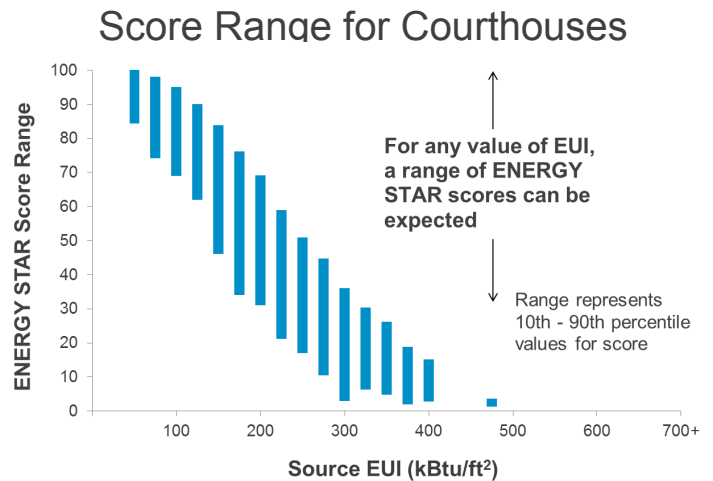
What characteristics affect energy use in courthouses?

Business activity and climate are often correlated with energy consumption. For example, courthouses that have more workers per square foot, operate more hours, and/or experience more cooling degree days (CDD) use more energy, on average. The orange trend lines in the graphs below show the impact of each characteristic on energy use. The steeper the line, the bigger the impact. While these trends hold true on average the blue dots demonstrate that for any given value of workers, hours, and CDD, a broad range in energy use is observed. Similar trends can be seen for other indicators of business activity, such as computers.

💼 Workers

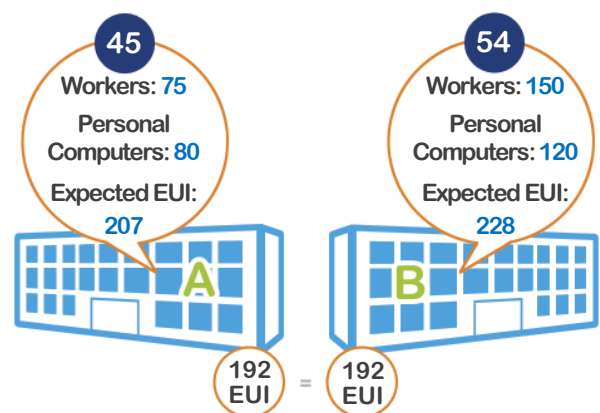### OPEN Hours

❄ Cooling Degree Days

How does EPA's ENERGY STAR score vary with energy use?

EPA's ENERGY STAR score normalizes for the effects of operation. While properties with lower EUI generally earn higher scores on the 1-100 scale, an individual property's result depends on its business activities. For any given EUI, a range of scores is possible.

Score Range for Courthouses

For any value of EUI, a range of ENERGY STAR scores can be expected

Range represents 10th - 90th percentile values for score

Let's look at two courthouses, Courthouse A and Courthouse B. They have the same EUI of 192 kBtu per square foot, and are identical except that Courthouse B has more workers per square foot and more personal computers per square foot. Because Courthouse B has more intensive activities, it is expected to have a higher EUI than Courthouse A, based on ENERGY STAR models. Since Courthouse B is *expected* to use more energy, but *actually* uses the same energy, it earns a higher score.

45
Workers: **75**
Personal Computers: **80**
Expected EUI: **207**
A
192 EUI

=

54
Workers: **150**
Personal Computers: **120**
Expected EUI: **228**
B
192 EUI

Note: Total number and floor area of properties benchmarked reflects cumulative data through 2013. Analysis of energy use and operational characteristics includes 1,290 properties benchmarked in the most recent 5 years. The data is self reported and has been filtered to exclude outliers, incomplete records, and test facilities. Portfolio Manager is not a randomly selected sample and is not the basis of the ENERGY STAR score. To learn more, visit: *www.energystar.gov/DataTrends*.

EPA United States Environmental Protection Agency