ENERGY STAR® Portfolio Manager™

DataTrends

Energy Use in Retail Stores

Retail Stores Using Portfolio Manager

41,402 Properties

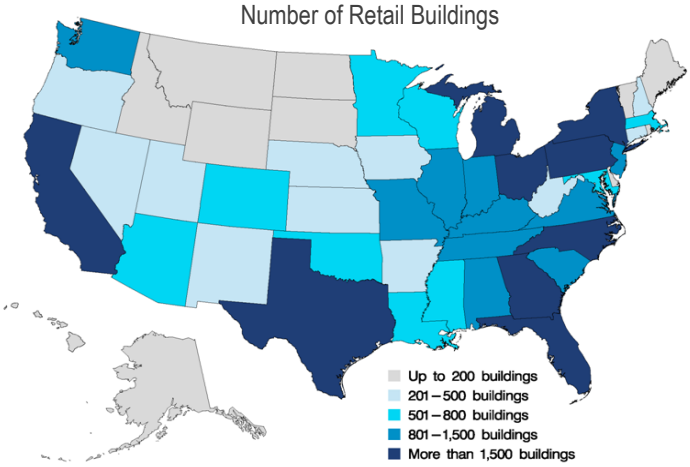
2.2 Billion ft²

61 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.

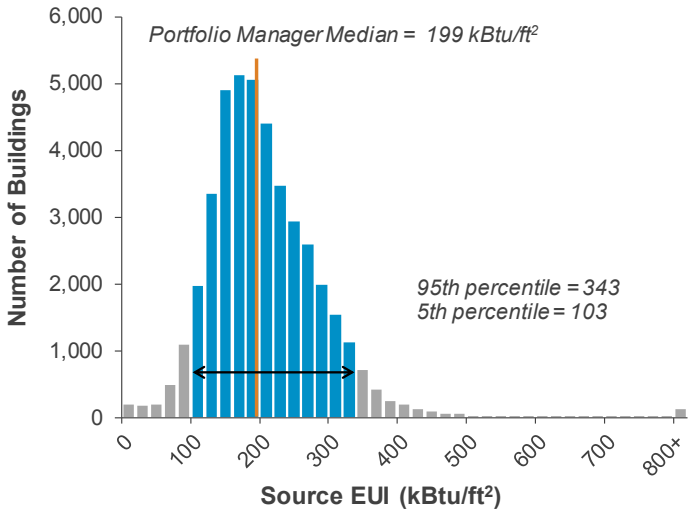
Benchmarking by State

Number of Retail Buildings



What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 100 to more than 800 kBtu/ft² across all retail buildings, with those at the 95th percentile using more than 3 times the energy of those at the 5th percentile. The distribution has a negative skew, which means the most energy intensive buildings are much further away from the median than the most efficient. Buildings 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.



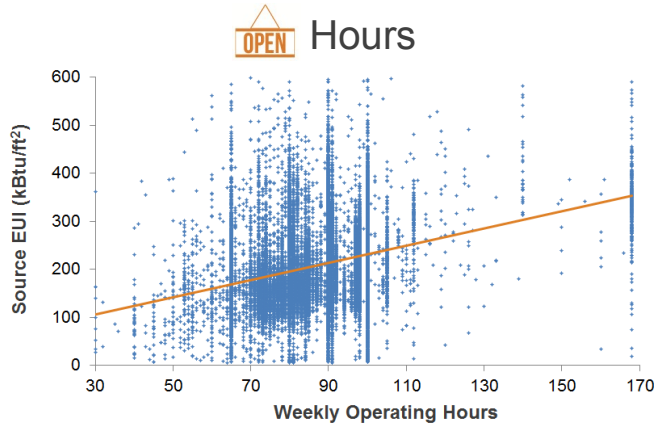
The median retail store in Portfolio Manager is approximately 23,000 square feet and operates 91 hours per week. But the typical building use patterns observed in Portfolio Manager vary just as much as energy. As you can see, there are retail stores of all shapes and sizes benchmarking in Portfolio Manager.

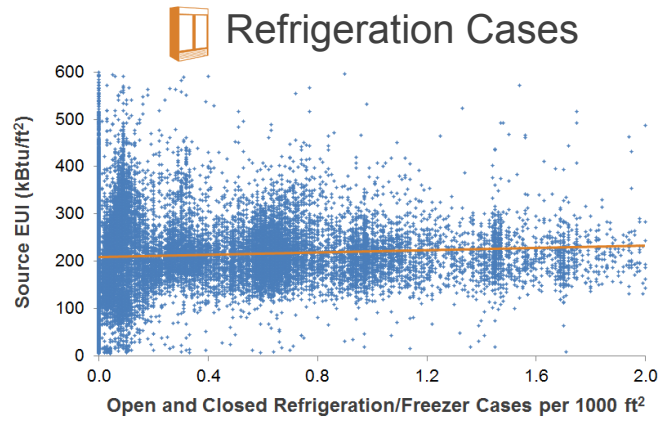
Building Characteristic	5th percentile	Median	95th percentile
			Range of Values
Square Feet	6,500	23,398	161,783
Operating Hours	65	91	100
Workers per 1000 ft²	0.23	0.55	1.00
Cash Registers per 1000 ft²	0.16	0.30	0.65
Computers per 1000 ft²	0.08	0.20	0.88
Walk-in Refrigeration Units per 1000 ft²	0.00	0.00	0.09
Open/Closed Refrigeration Cases per 1000 ft²	0.00	0.01	1.02
Heating Degree Days	786	3,844	6,564
Cooling Degree Days	280	1,442	3,689

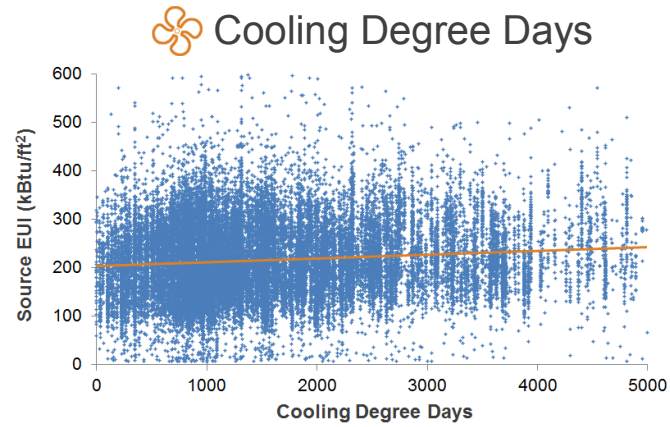
What is Source Energy? Source energy is the amount of raw fuel required to operate your building. In addition to what you use on-site, source energy includes losses from generation, transmission, and distribution of energy. Source energy enables the most complete and equitable energy assessment. Learn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

What characteristics affect energy use?

Business activity and climate are often correlated with energy consumption. For example, retail stores that are open longer hours, have more refrigeration/freezer cases per square foot, and/or experience more cooling degree days (CDD) use more energy, on average. The orange trend line in the graphs below is the steepest for hours, meaning hours has a stronger effect on energy than refrigeration cases or CDD. While these trends hold true on average, two buildings with the same hours could have very different energy, as shown by the range in the blue dots. Similar trends can be seen for other indicators of business activity, such as number of workers.

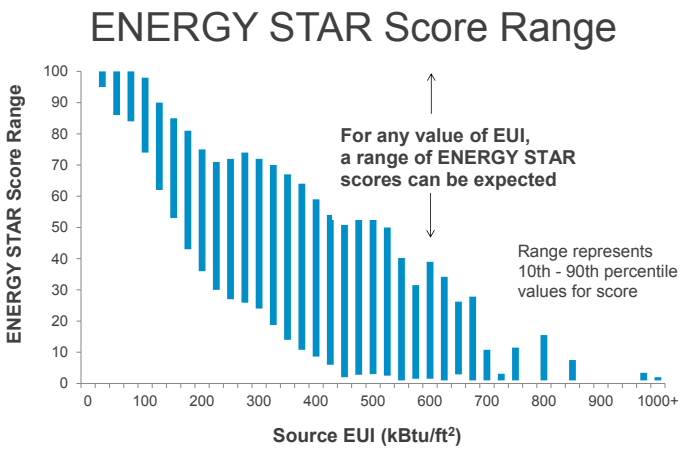




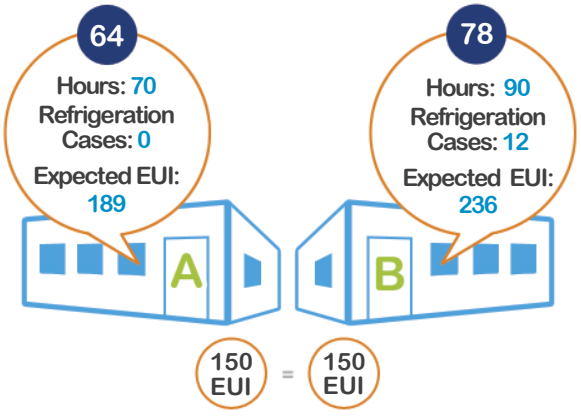


How does EPA's ENERGY STAR score vary with energy use?

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



Let's look at two retail stores, Store A and Store B. They have the same EUI of 150 kBtu per square foot, and are identical except that Store B is open longer hours and has more open/closed refrigeration cases per square foot. Because Store B has more intensive activities, it is expected to have a higher EUI than Store A, based on ENERGY STAR scoring models. Since Store B is *expected* to use more energy, but *actually* uses the same energy, it earns a higher score.



Note: *Number and floor area of buildings benchmarked includes cumulative data through 2011. Analysis of energy use and business activity includes buildings benchmarked between 2006 and 2012. 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