

Energy Use in Supermarkets

Supermarkets Using Portfolio Manager

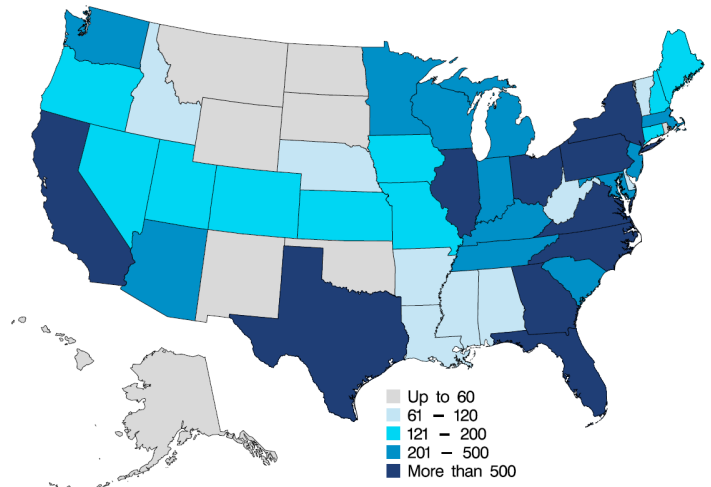
15,639 Properties

702 Million ft²

63 Average ENERGY STAR Score

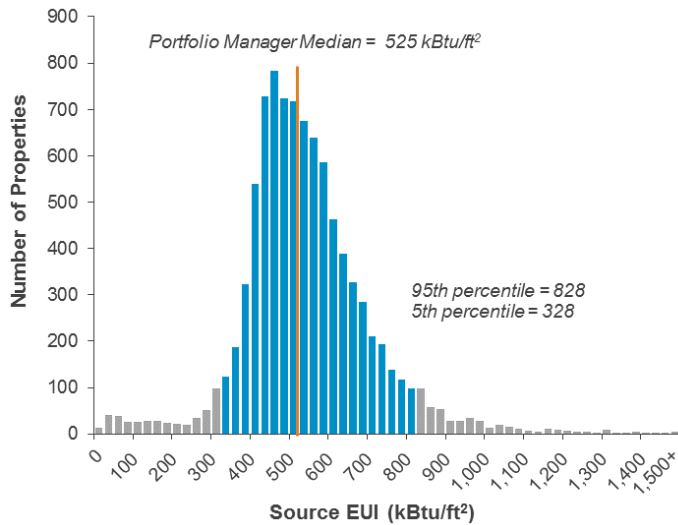
The U.S. Environmental Protection Agency's (EPA) ENERGY STAR Portfolio Manager is changing the way organizations track and manage energy. Because of this widespread market adoption, EPA has prepared the DataTrends series to examine benchmarking and trends in energy and water consumption in Portfolio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

Benchmarking by State Number of Supermarkets



What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 100 to more than 1,500 kBtu/ft² across all supermarkets, with those at the 95th percentile using more than twice 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.



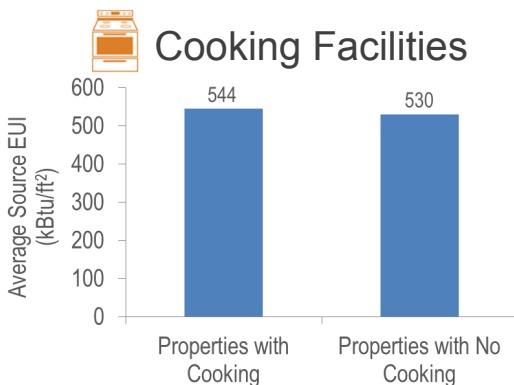
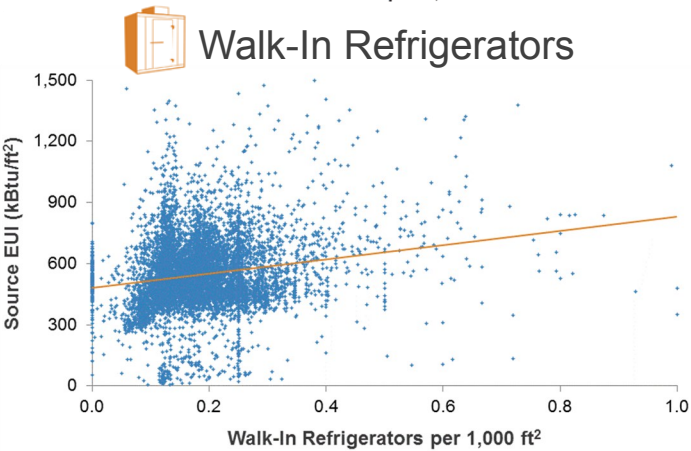
The median supermarket in Portfolio Manager is approximately 50,000 square feet and operates 126 hours per week. But the typical property use patterns observed in Portfolio Manager vary just as much as energy. As you can see, there are supermarkets of all shapes and sizes benchmarking in Portfolio Manager.

Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
Square Feet	19,785	50,009	92,961
Weekly Operating Hours	98	126	168
Workers per 1,000 ft ²	0.4	0.9	1.5
Walk-in Refrigeration Units per 1,000 ft ²	0.1	0.2	0.3
Cooking Facilities?	94% say yes		
Heating Degree Days	865	4,710	7,403
Cooling Degree Days	314	1,059	3,479

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.

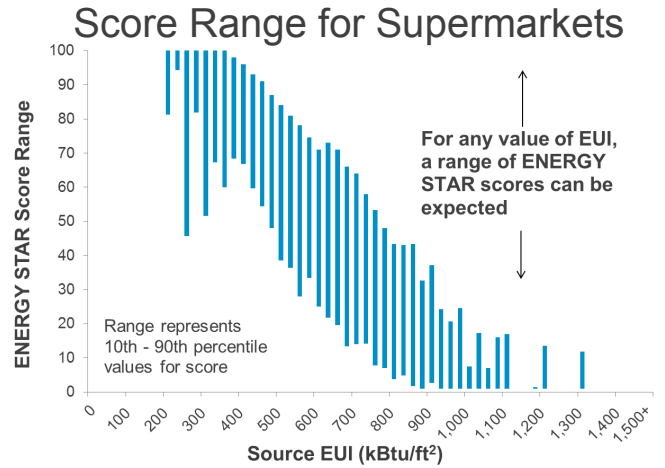
What characteristics affect energy use in supermarkets?

Business activity and climate are often correlated with energy consumption. For example, supermarkets that have more workers per square foot, more refrigerators per square foot, and/or more cooking facilities 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 and walk-in refrigerators, a broad range in energy use is observed. Similar trends can be seen for other indicators of business activity, such as weekly operating hours. Properties with cooking facilities were found to have an average EUI about 3% higher than properties without cooking.

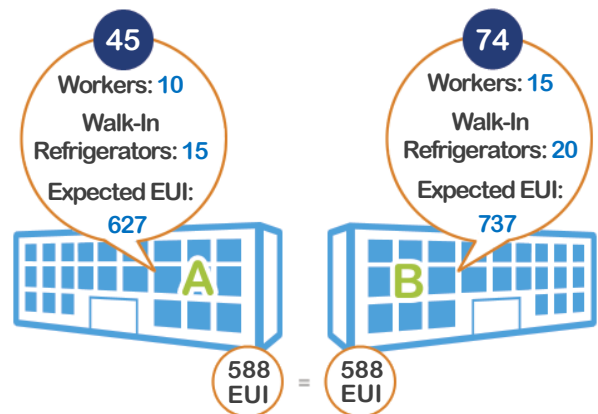


How does EPA's ENERGY STAR score vary with energy use?

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.



Let's look at two supermarkets, Supermarket A and Supermarket B. They have the same EUI of 588 kBtu per square foot, and are identical except that Supermarket B has more workers and refrigerators per square foot. Because Supermarket B has more intensive activities, it is expected to have a higher EUI than Supermarket A, based on ENERGY STAR scoring models. Since Supermarket B is *expected* to use more energy, but *actually* uses the same energy, it earns a higher score.



Note: Total number and floor area of properties benchmarked reflects cumulative data through 2013. Analysis of energy use and operational characteristics includes 9,158 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.