

Energy Use in Non-Refrigerated Warehouses

Non-Refrigerated Warehouses Using Portfolio Manager

7,976 Properties

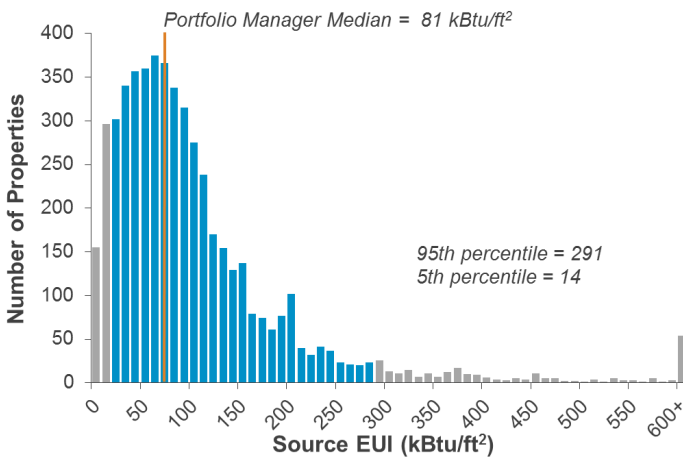
669 Million ft²

52 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?

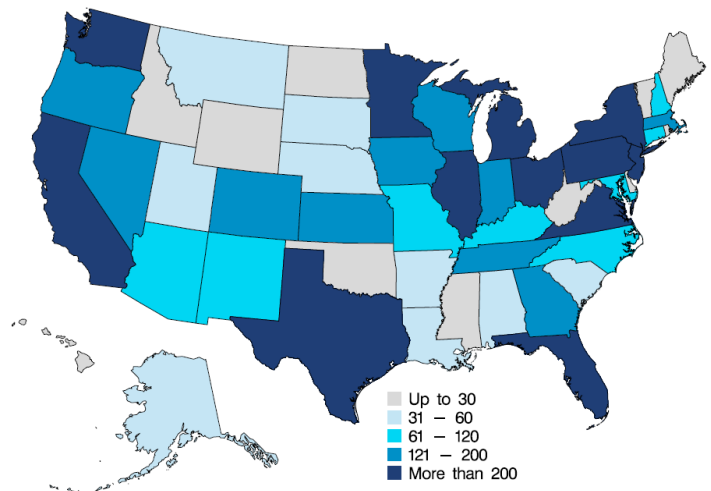
Energy use intensity (EUI) ranges from less than 50 to more than 600 kBtu/ft² across all non-refrigerated warehouses, with those at the 95th percentile using nearly 21 times the energy of those at the 5th percentile. The distribution has a negative skew, which means the most energy intensive properties 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.



The median non-refrigerated warehouse in Portfolio Manager is approximately 36,000 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 non-refrigerated warehouses of all shapes and sizes benchmarking in Portfolio Manager.

Benchmarking by State

Number of Non-Refrigerated Warehouses

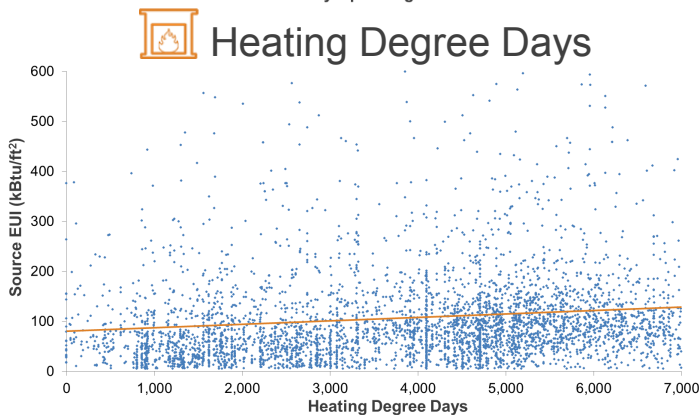
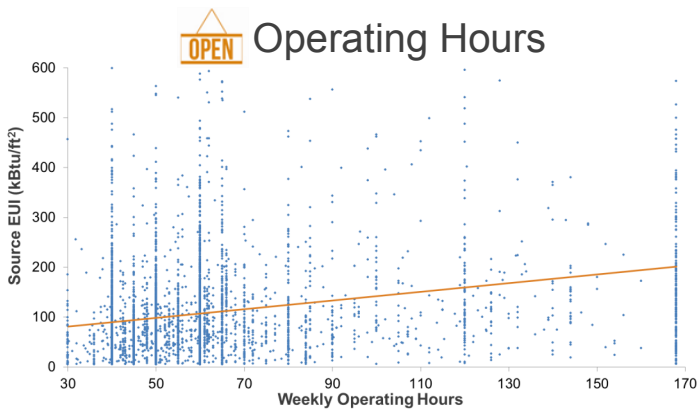
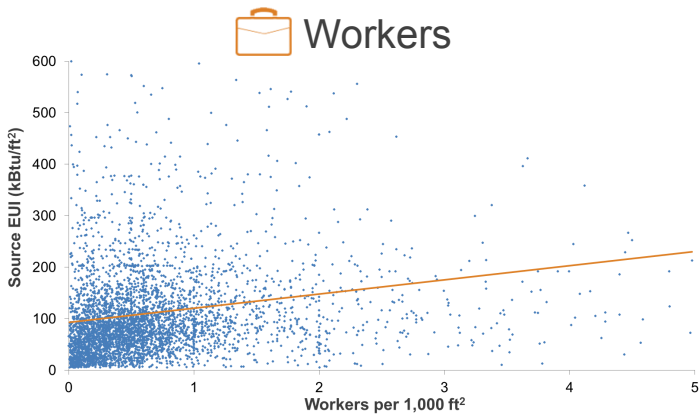


Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
Square Feet	7,245	36,316	337,740
Weekly Operating Hours	40	55	141
Workers per 1,000 ft ²	0.1	0.6	1.9
Walk-in Refrigerators?	3% say yes		
Heating Degree Days	911	4,483	7,854
Cooling Degree Days	124	1,056	3,285

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 non-refrigerated warehouses?

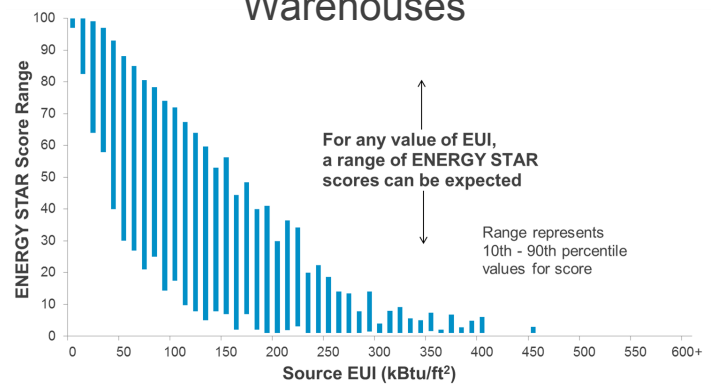
Business activity and climate are often correlated with energy consumption. For example, non-refrigerated warehouses that have more workers per square foot, operate more hours and/or experience more heating degree days (HDD) use more energy, on average. The orange trend lines in the graphs below are steeper for workers and operating hours, meaning that these characteristics have a stronger effect on energy than HDD. While these trends hold true on average, two properties with the same number of workers could have very different energy use, as shown by the range in the blue dots. Trends can also be seen for other indicators of business activity, such as number of walk-in refrigerators and cooling degree days.



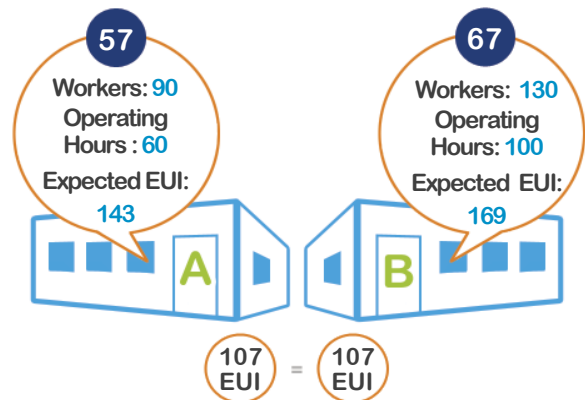
How does EPA's ENERGY STAR score vary with energy use?

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 Non-refrigerated Warehouses



Let's look at two non-refrigerated warehouses, Warehouse A and Warehouse B. They have the same EUI of 107 kBtu per square foot, and are identical except that Warehouse B has more workers per square foot and operates for more hours per week. Because Warehouse B has more intensive activities, it is expected to have a higher EUI than Warehouse A, based on ENERGY STAR scoring models. Since Warehouse 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 5,203 properties benchmarked in the most recent 5 years. Because of small sample size, refrigerated warehouses were excluded from this data sheet. 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.