ENERGY STAR® PortfolioManager®

DataTrends

Energy Use in Residence Halls/Dormitories

Dormitories Using Portfolio Manager

3,958 Properties

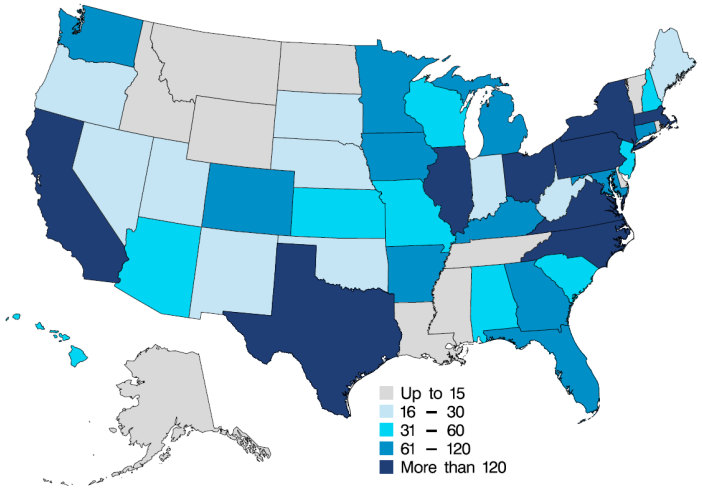
301 Million ft²

68 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.

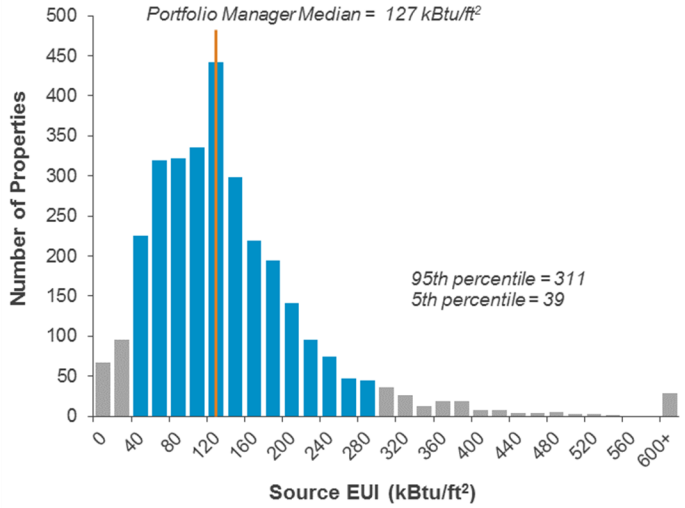
Benchmarking by State

Number of Dormitories



What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 40 to more than 600 kBtu/ft² across all dormitories, with those at the 95th percentile using almost 8 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.



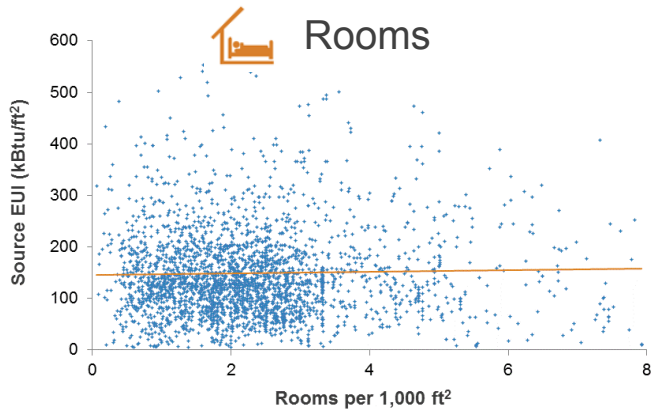
The median dormitory in Portfolio Manager is about 41,000 square feet and has 2.1 rooms per thousand square feet. But the typical property use patterns observed in Portfolio Manager vary just as much as energy. As you can see, there are dormitories of all shapes and sizes benchmarking in Portfolio Manager.

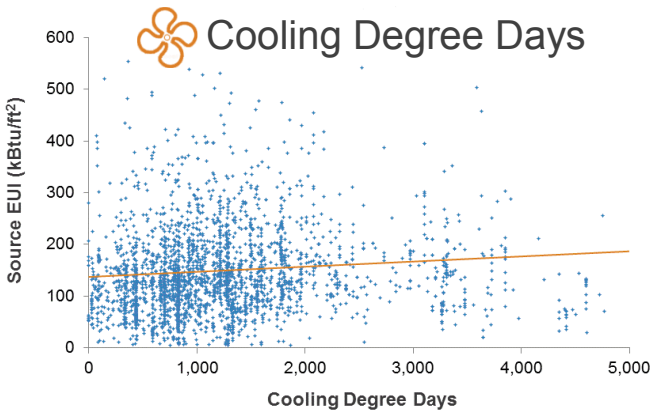
Property Characteristic	5th percentile	Median	95th percentile
		Range of Values	
Square Feet	6,599	40,844	230,747
Rooms per 1,000 ft²	0.7	2.1	4.9
Heating Degree Days	1,293	4,708	7,618
Cooling Degree Days	276	1,024	3,269

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.

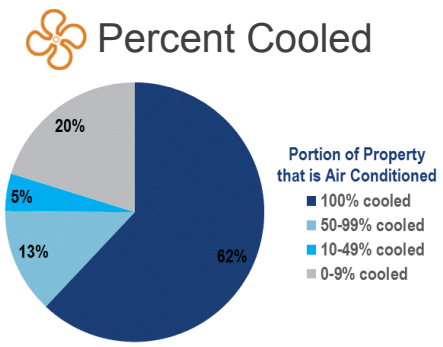
What characteristics affect energy use in dormitories?

Typical activity and climate are often correlated with energy consumption. For example, dormitories that have more rooms per square foot 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 rooms and CDD, a broad range in energy use is observed.



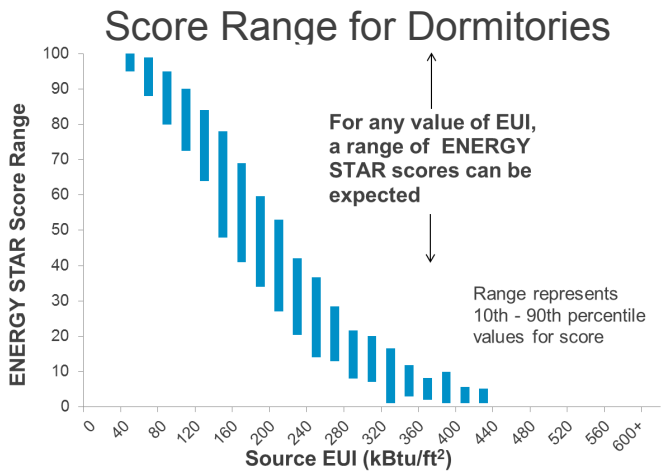


Not all dormitories are 100% cooled. Energy consumption at properties that are less than 100% cooled would be less likely to change with variations in outside temperatures. The pie chart below shows that about two-thirds of properties are fully air-conditioned.

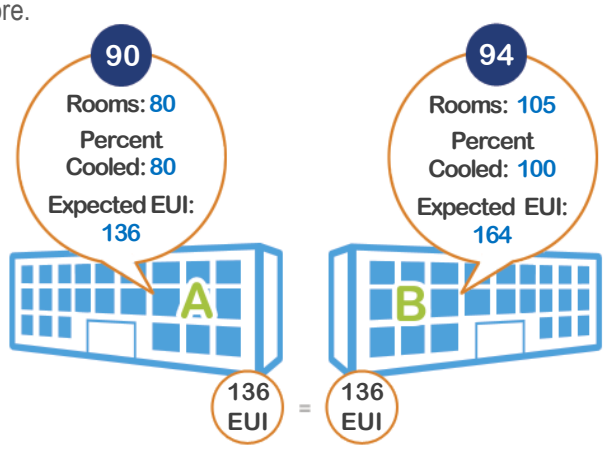


How does EPA's ENERGY STAR score vary with energy use?

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 dormitories, Dormitory A and Dormitory B. They have the same EUI of 136 kBtu per square foot, and are identical except that Dormitory B has more rooms per square foot and a greater percent of the property is cooled. Because Dormitory B has more intensive activities, it is expected to have a higher EUI than Dormitory A, based on ENERGY STAR scoring models. Since Dormitory 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 3,100 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