

Energy Use in Bank Branches

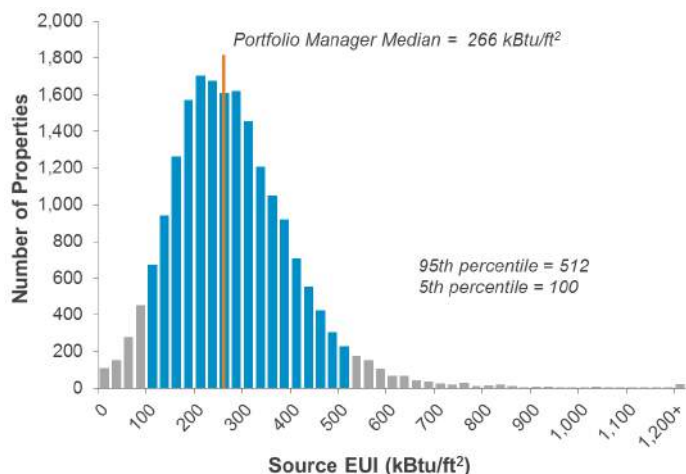
Bank Branches Using Portfolio Manager

-  26,465 Properties
-  174 Million ft²
-  47 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.

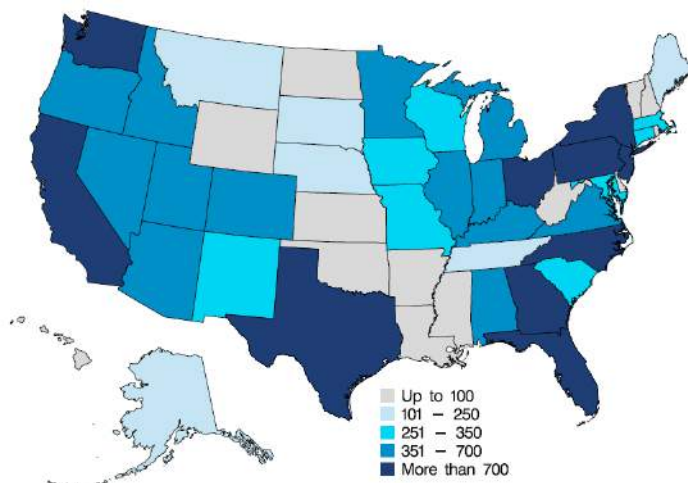
What is a typical operating profile?







Energy use intensity (EUI) ranges from less than 100 to more than 1,200 kBtu/ft² across all bank branches, with those at the 95th percentile using more than 5 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 bank branch in Portfolio Manager is approximately 4,000 square feet and operates 50 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 bank branches of all shapes and sizes benchmarking in Portfolio Manager.

Benchmarking by State Number of Bank Branches



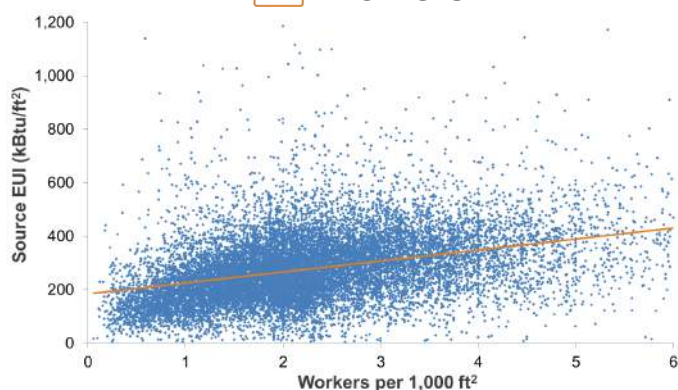
Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
 Square Feet	2,000	4,066	16,403
 Operating Hours	41	50	77
 Workers per 1,000 ft ²	0.8	2.3	4.3
 Computers per 1,000 ft ²	0.7	2.0	5.0
 Heating Degree Days	421	4,334	7,117
 Cooling Degree Days	346	1,152	3,648

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.

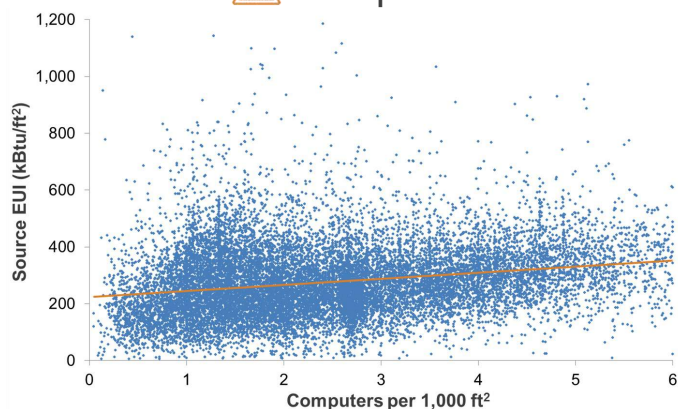
What characteristics affect energy use in bank branches?

Business activity and climate are often correlated with energy consumption. For example, bank branches that have more workers per square foot, more computers 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 workers, computers, and CDD, a broad range in energy use is observed. Similar trends can be seen for other indicators of business activity, such as weekly operating hours.

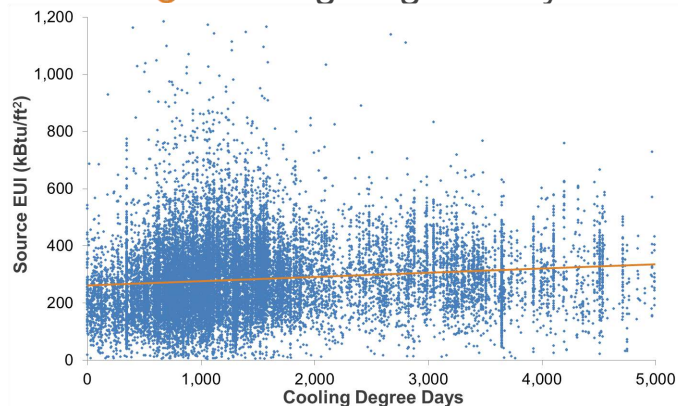
Workers



Computers



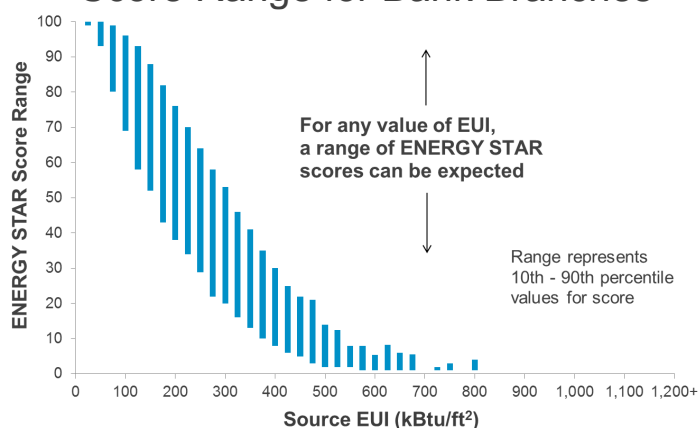
Cooling Degree Days



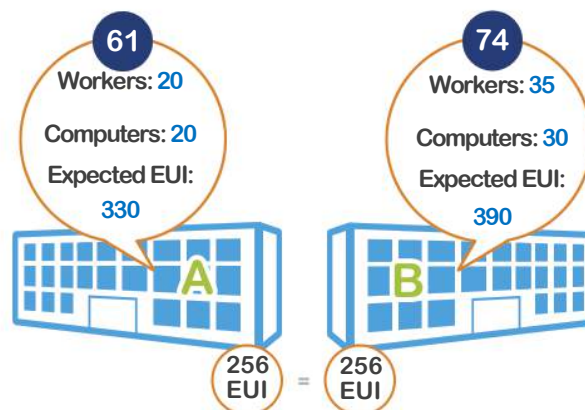
How does EPA's ENERGY STAR score vary with energy use?

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 Bank Branches



Let's look at two bank branches, Bank A and Bank B. They have the same EUI of 256 kBtu per square foot, and are identical except that Bank B has more workers per square foot and more computers per square foot. Because Bank B has more intensive activities, it is expected to have a higher EUI than Bank A, based on ENERGY STAR scoring models. Since Bank 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 property characteristics includes 19,792 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.

Energy Use in Courthouses

Courthouses Using Portfolio Manager

 1,785 Properties

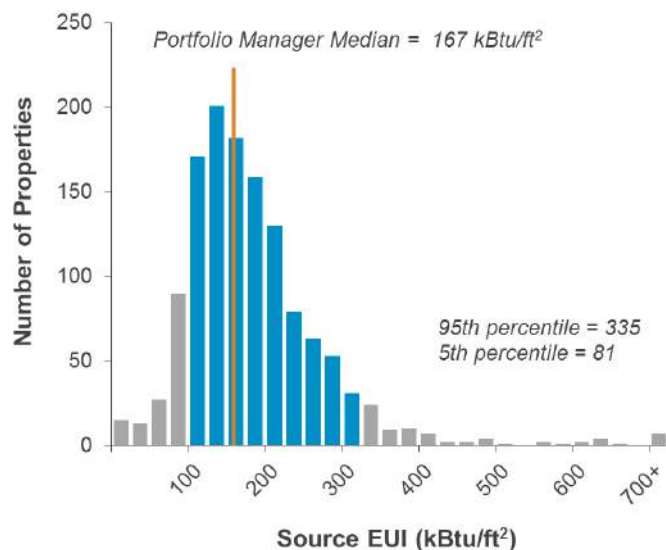
 235.8 Million ft²

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?

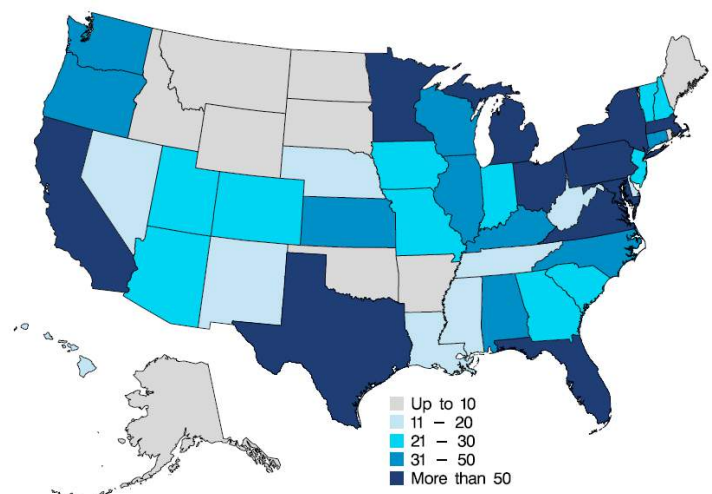
Energy use intensity (EUI) ranges from less than 100 to more than 700 kBtu/ft² across all courthouses, with those at the 95th percentile using more than 4 times the energy of those at the 5th percentile. The distribution has a negative skew, which means the most energy intensive properties are further 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.









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.

Benchmarking by State

Number of Courthouses

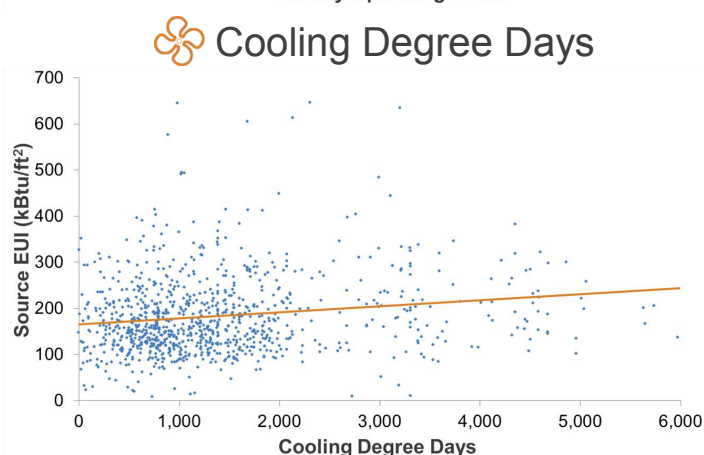
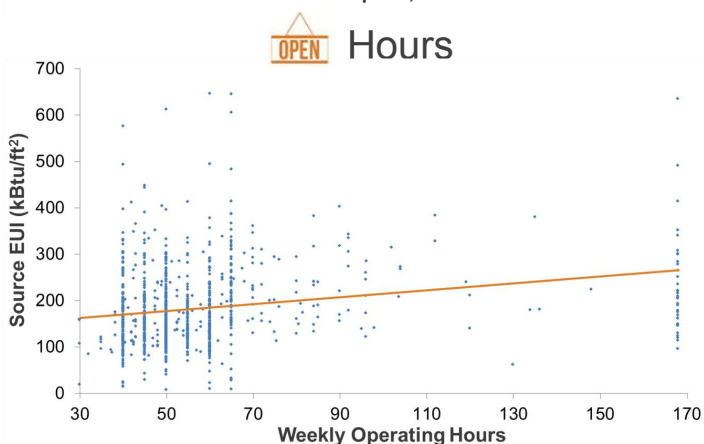
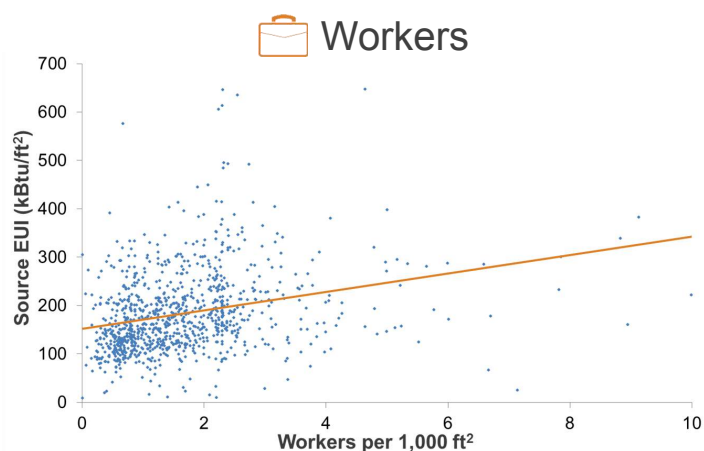


Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
 Square Feet	10,000	65,000	490,000
 Weekly Operating Hours	40	55	96
 Workers per 1,000 ft ²	0.4	1.8	3.4
 Computers per 1,000 ft ²	0.5	1.9	3.1
 Heating Degree Days	722	4,799	7,929
 Cooling Degree Days	243	1,103	3,563

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?

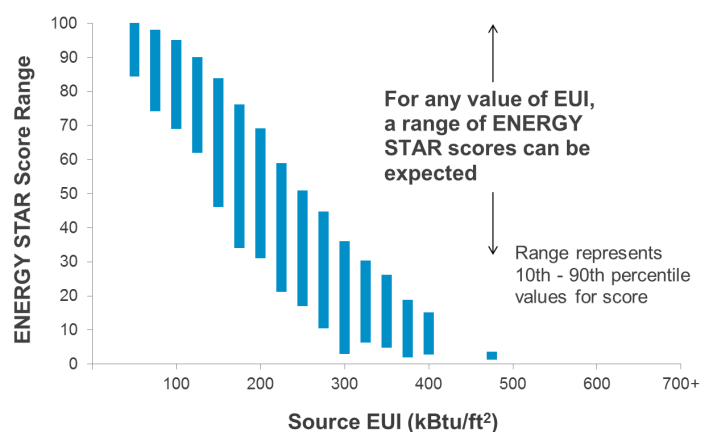
Business activity and climate are often correlated with energy consumption. For example, courthouses that have more workers per square foot, operate more hours, and/or experience more cooling degree days (CDD) use more energy, on average. The orange trend lines in the graphs below show the impact of 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.



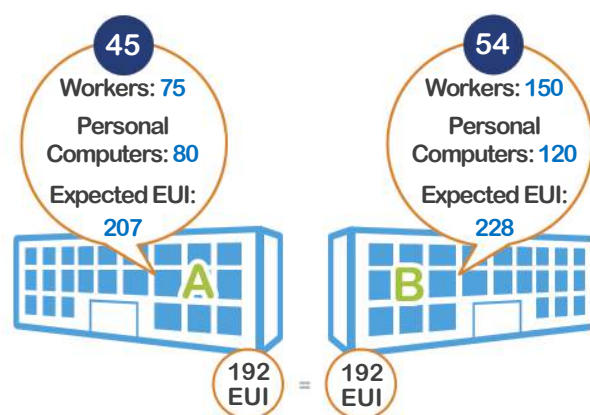
How does EPA's ENERGY STAR score vary with energy use?

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




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.




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.

Energy Use in Distribution Centers

Distribution Centers Using Portfolio Manager

 1,835 Properties

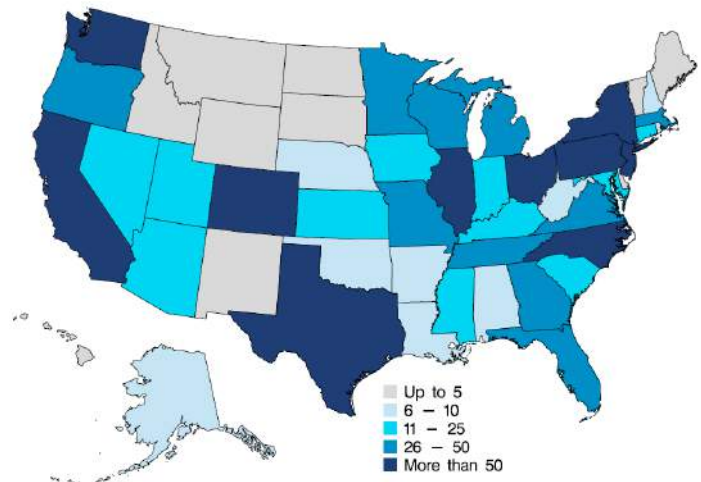
 485 Million ft²

 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.

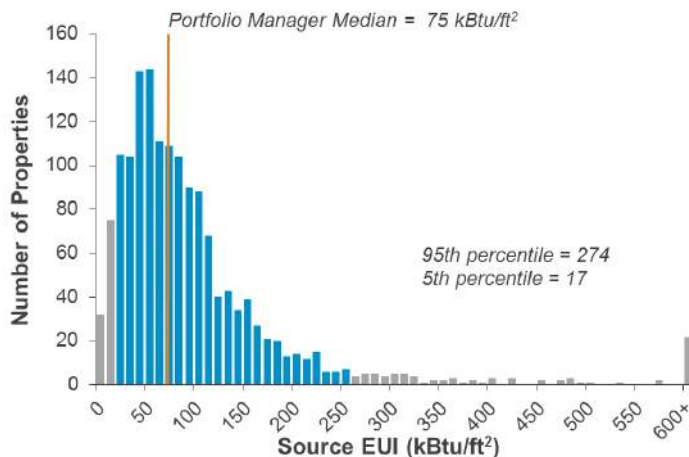
Benchmarking by State

Number of Distribution Centers









What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 50 to more than 600 kBtu/ft² across all distribution centers, with those at the 95th percentile using 16 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.



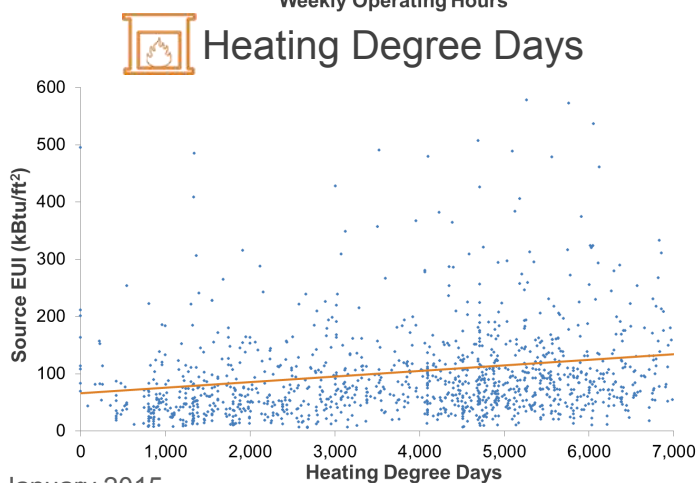
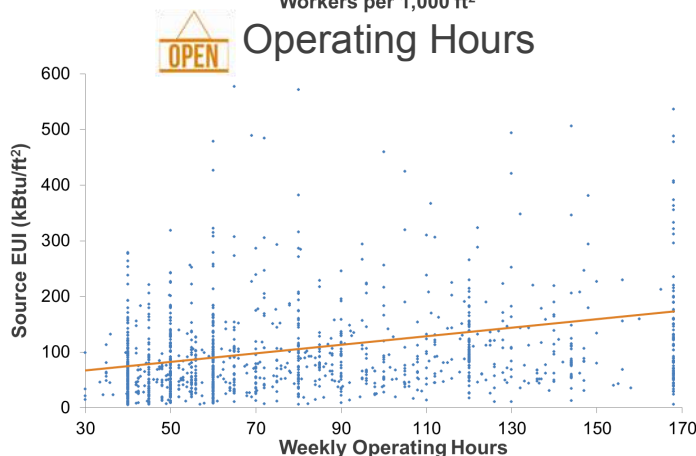
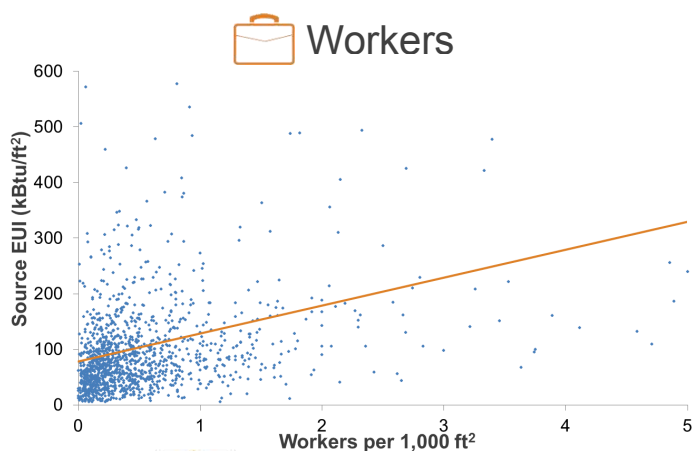
The median distribution center in Portfolio Manager is approximately 110,000 square feet and operates 60 hours per week. But the typical property use patterns observed in Portfolio Manager vary just as much as energy. As you can see, there are distribution centers of all shapes and sizes benchmarking in Portfolio Manager.

Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
 Square Feet	9,992	110,431	887,014
 Weekly Operating Hours	40	60	168
 Workers per 1,000 ft ²	0.1	0.4	1.5
 Walk-in Refrigerators?	9% say yes		
 Heating Degree Days	864	4,401	7,162
 Cooling Degree Days	171	1,136	3,208

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.

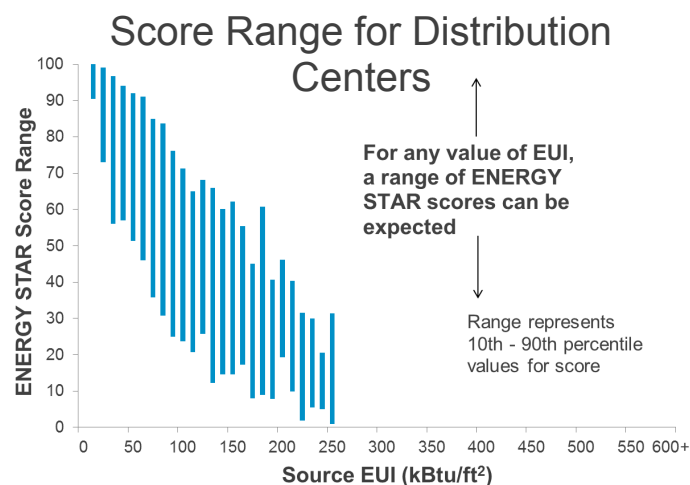
What characteristics affect energy use in distribution centers?

Business activity and climate are often correlated with energy consumption. For example, distribution centers that have more workers per square foot, operate more hours and/or have more heating degree days (HDD), on average. The orange trend line in the graphs below is the steepest for workers meaning that worker density has stronger effect on energy than hours or 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.

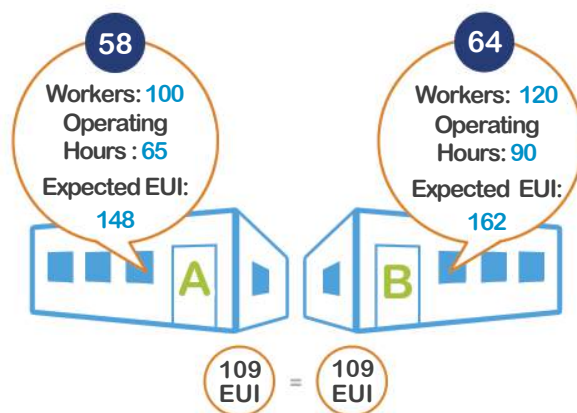


How does EPA's ENERGY STAR score vary with energy use?

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 distribution centers, Center A and Center B. They have the same EUI of 109 kBtu per square foot, and are identical except that Center B has more workers per square foot and operates for more hours per week. Because Center B has more intensive activities, it is expected to have a higher EUI than Center A, based on ENERGY STAR scoring models. Since Center 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 property characteristics includes 1,554 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.

Energy Use in Residence Halls/Dormitories

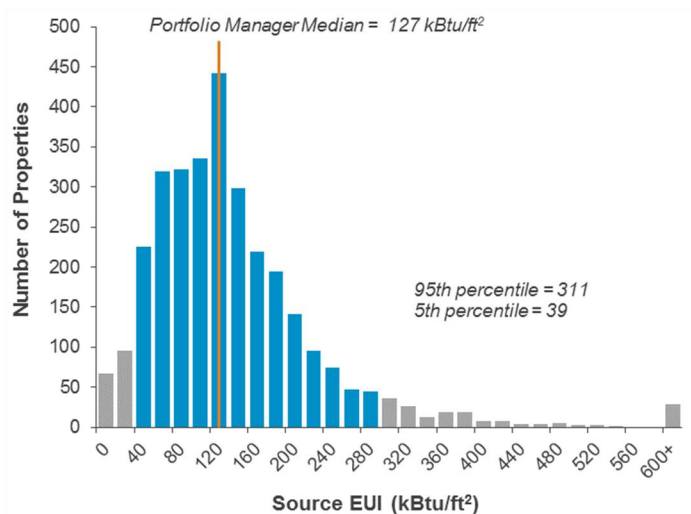
Dormitories Using Portfolio Manager



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.

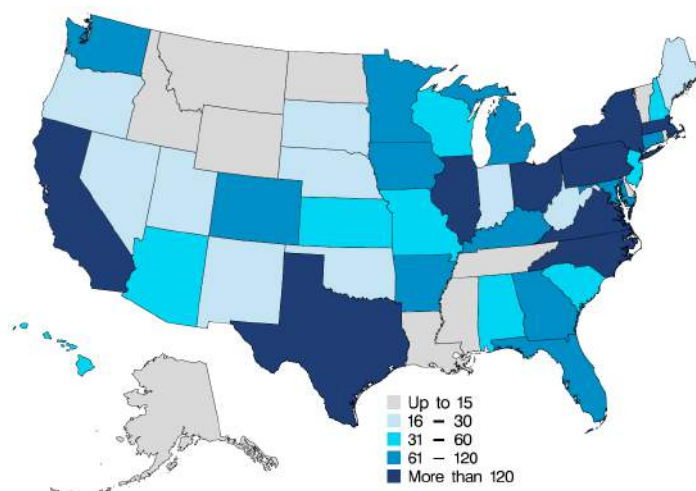
What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 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.

Benchmarking by State Number of Dormitories



Property Characteristic

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

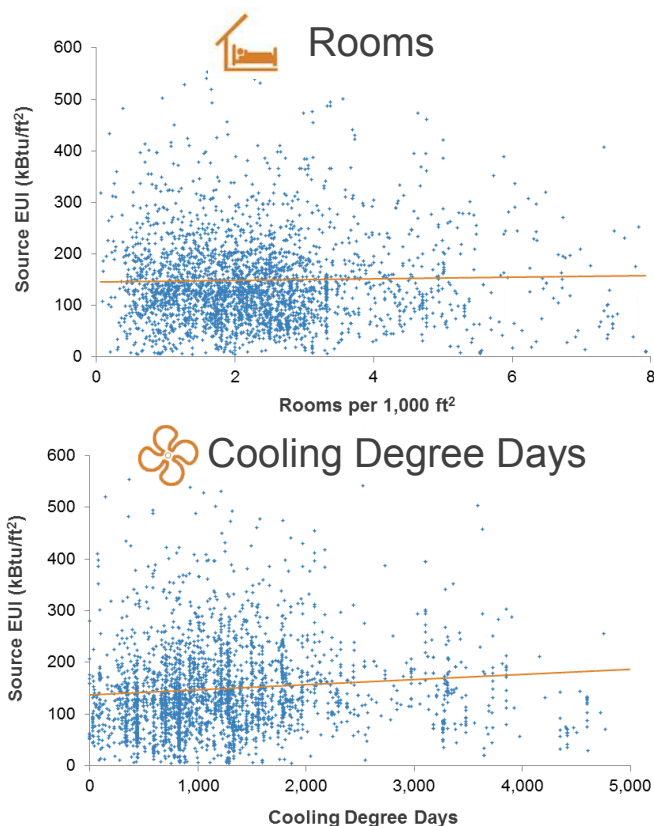
1,024

3,269

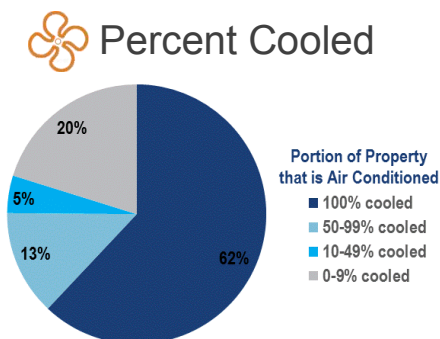
What is Source Energy? Source energy is the amount of raw fuel required to operate your property. In addition to what you use on site, source energy includes losses from generation, transmission, and distribution of energy. Source energy enables the most complete and equitable energy assessment. Learn 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.

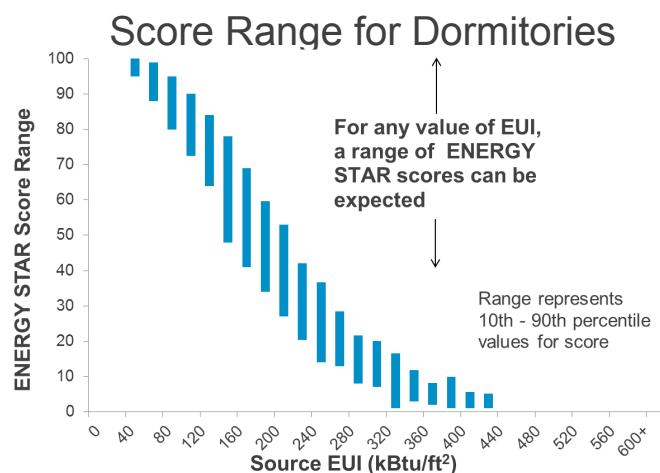


Not all dormitories are 100% cooled. Energy consumption at properties that are less than 100% cooled would be less likely to change with variations in outside temperatures. The pie chart below shows that about two-thirds of properties are fully air-conditioned.

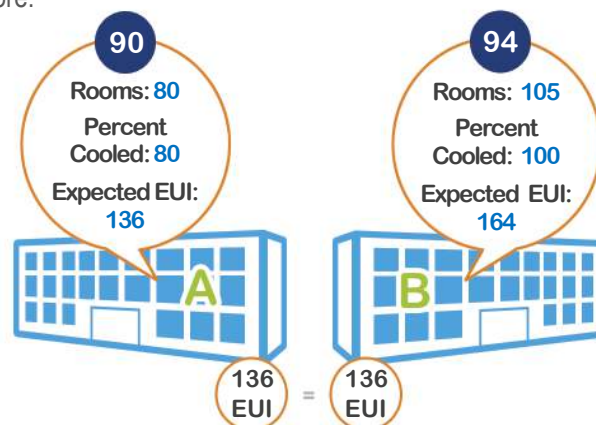


How does EPA's ENERGY STAR score vary with energy use?

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.



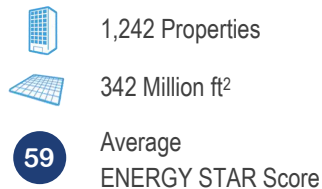
Let's look at two dormitories, Dormitory A and Dormitory B. They have the same EUI of 136 kBtu per square foot, and are identical except that Dormitory B has more rooms per square foot and a greater percent of the property is cooled. Because Dormitory B has more intensive activities, it is expected to 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.

Energy Use in Financial Offices

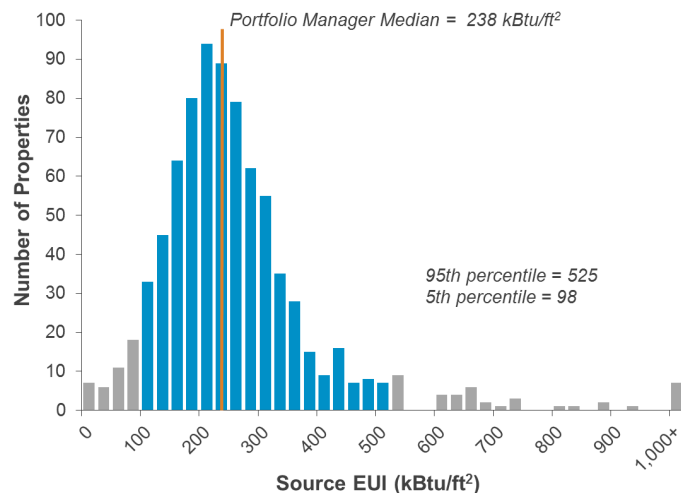
Financial Offices Using Portfolio Manager



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.

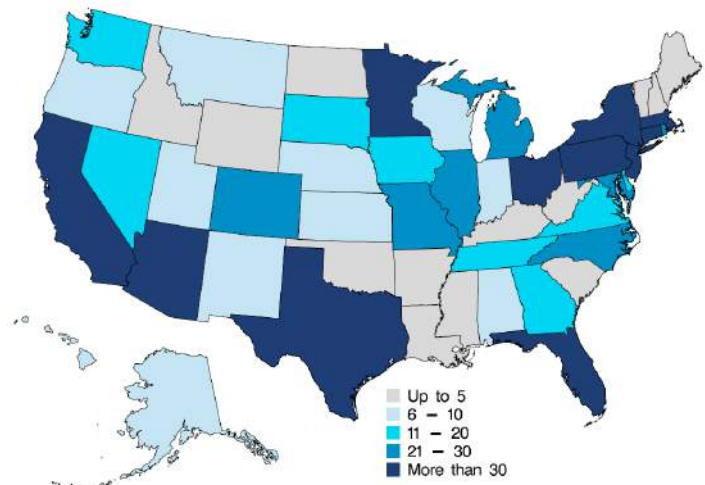
What is a typical operating profile?







Energy use intensity (EUI) ranges from less than 100 to more than 1,000 kBtu/ft² across all financial offices, with those at the 95th percentile using 5 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 financial office in Portfolio Manager is more than 128,000 square feet and operates 65 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 financial offices of all shapes and sizes benchmarking in Portfolio Manager.

Benchmarking by State Number of Financial Offices

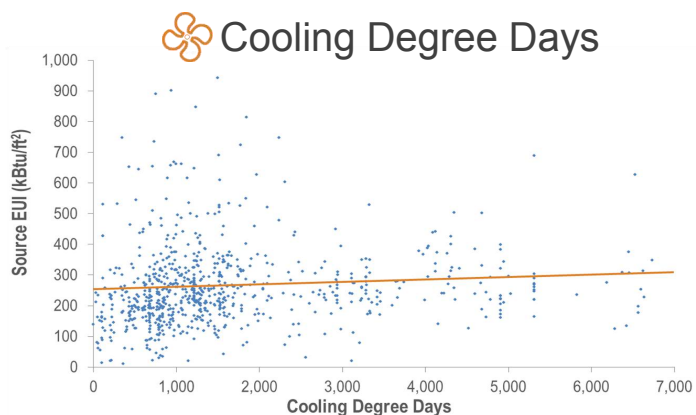
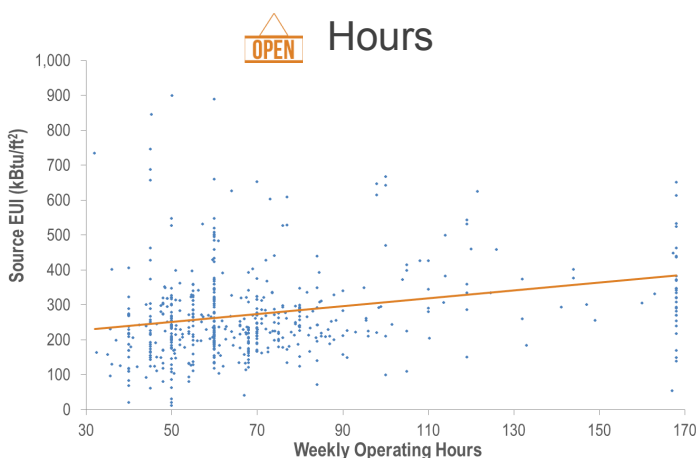


Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
 Square Feet	10,000	128,550	1,034,547
 Operating Hours	44	65	130
 Workers per 1,000 ft²	0.6	2.3	7.3
 Computers per 1,000 ft²	0.7	2.2	7.9
 Heating Degree Days	80	4,788	7,437
 Cooling Degree Days	233	1,210	4,906

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.

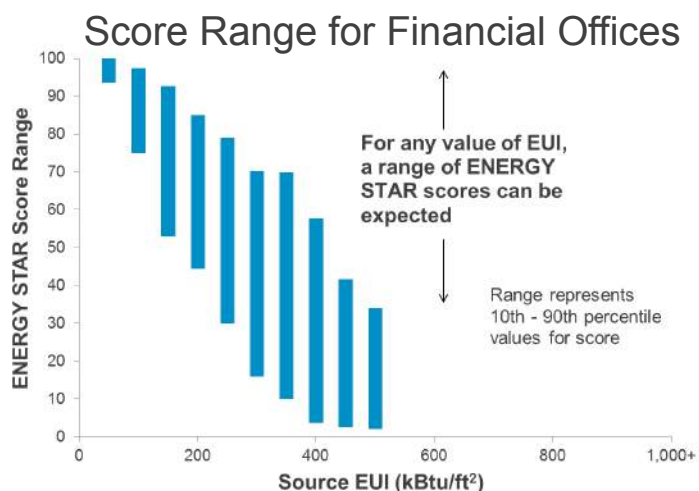
What characteristics affect energy use in financial offices?

Business activity and climate are often correlated with energy consumption. For example, financial offices that are open longer hours, have more workers 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 hours, workers, and CDD, a broad range in energy use is observed. Similar trends can be seen for other property characteristics such as computers and heating degree days.

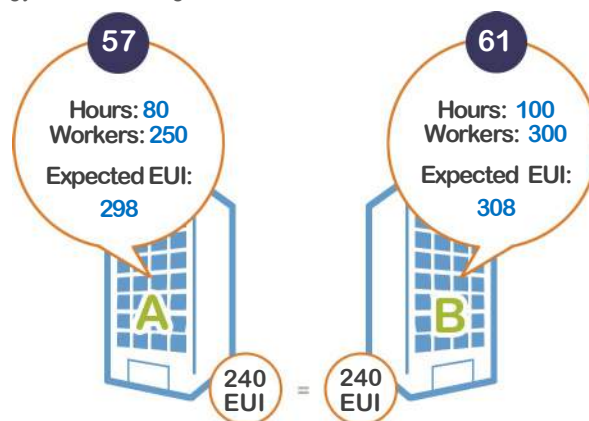


How does EPA's ENERGY STAR score vary with energy use in financial offices?

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 financial offices, Financial Office A and Financial Office B. They have the same EUI of 240 kBtu per square foot, and are identical except that Financial Office B is open longer hours and has more computers per square foot. Because Financial Office B has more intensive activities, it is expected to have a higher EUI than Financial Office A, based on ENERGY STAR scoring models. Since Financial Office 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 809 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.

Energy Use in Hospitals

Hospitals Using Portfolio Manager

 4,939 Properties

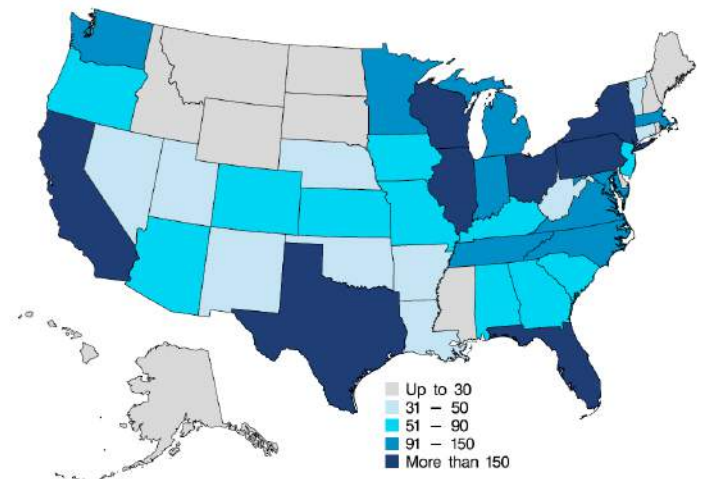
 2.4 Billion ft²

 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.

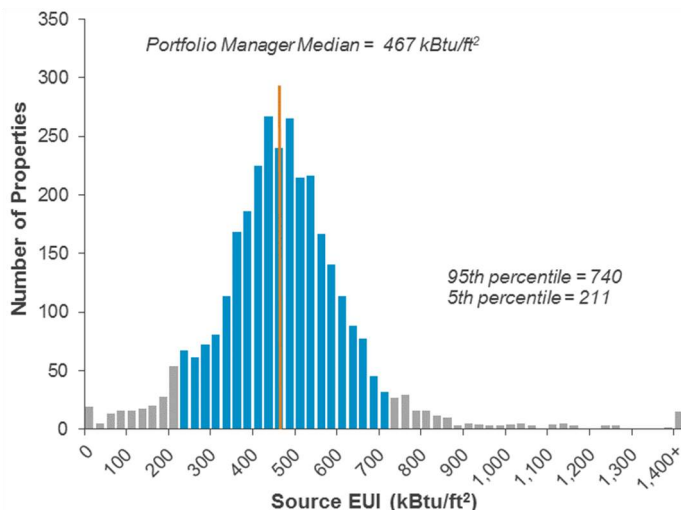
Benchmarking by State

Number of Hospitals



What is a typical operating profile?







Energy use intensity (EUI) ranges from less than 100 to more than 1,400 kBtu/ft² across all hospitals, with those at the 95th percentile using more than 3 times the energy of those at the 5th percentile. The distribution has a slight 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 hospital in Portfolio Manager is 326,000 square feet and has 0.5 staffed beds 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 hospitals of all shapes and sizes benchmarking in Portfolio Manager.

Property Characteristic

Range of Values

	5th percentile	Median	95th percentile
 Square Feet	54,000	326,000	1,426,994
 Full Time Equivalent Workers per 1,000 ft ²	1.2	2.6	4.0
 Staffed Beds per 1,000 ft ²	0.2	0.5	1.1
 MRIs per 1,000 ft ²	0.000	0.003	0.016
 Heating Degree Days	922	4,527	7,735
 Cooling Degree Days	165	1,146	3,447

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 hospitals?

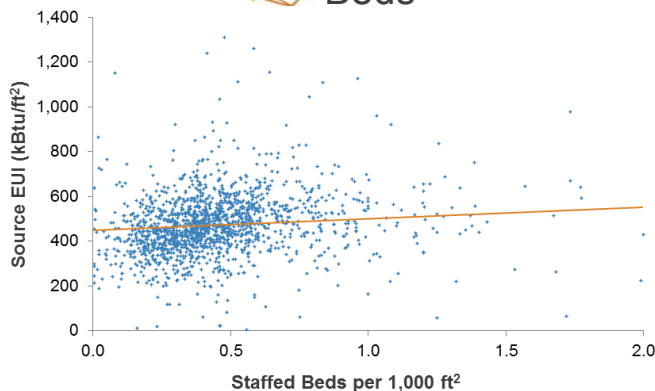
Business activity and climate are often correlated with energy consumption. For example, hospitals that have more full-time equivalent (FTE) workers per square foot, more staffed beds per square foot, and/or experience more cooling degree days (CDD) use more energy, on average. The orange trend line in the graphs below show the impact of each characteristics 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, beds, and CDD, a broad range in energy use is observed. Similar trends can be seen for other indicators of business activity, such as number of MRI machines.



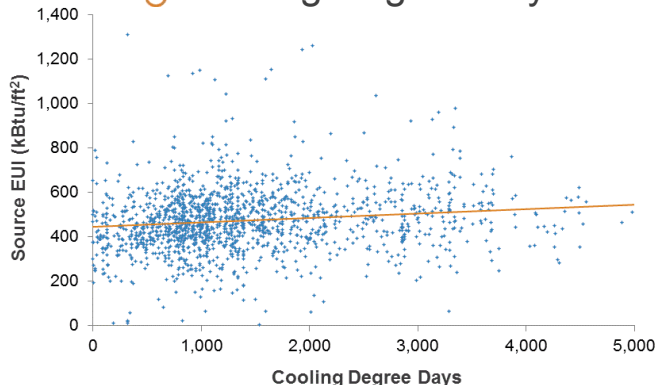
FTE Workers



Beds



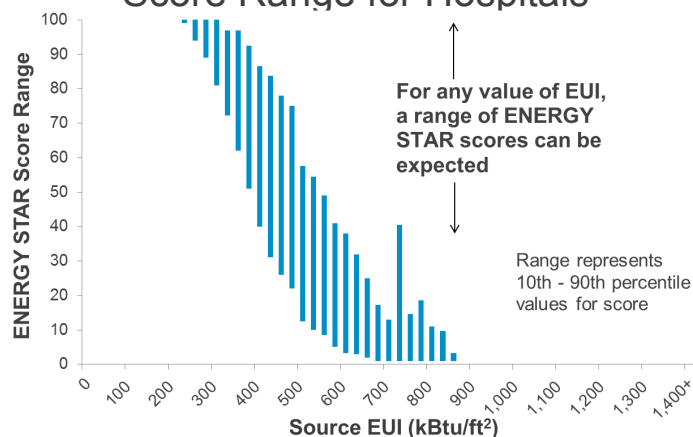
Cooling Degree Days



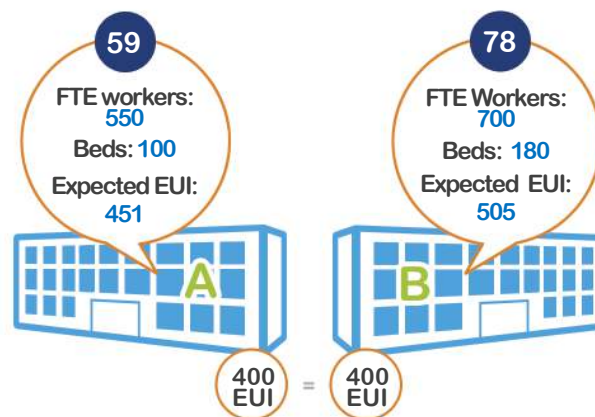
How does EPA's ENERGY STAR score vary with energy use?

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 Hospitals



Let's look at two hospitals, Hospital A and Hospital B. They have the same EUI of 400 kBtu per square foot, and are identical except that Hospital B has more full-time equivalent workers per square foot and more staffed beds per square foot. Because Hospital B has more intensive activities, it is expected to have a higher EUI than Hospital A, based on ENERGY STAR scoring models. Since Hospital 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 3,207 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.

Energy Use in Hotels

Hotels Using Portfolio Manager



10,412 Properties



1.9 Billion ft²

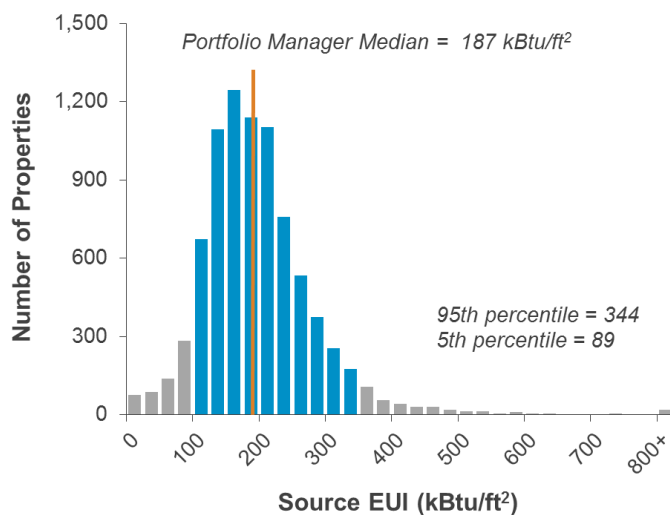
50

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?

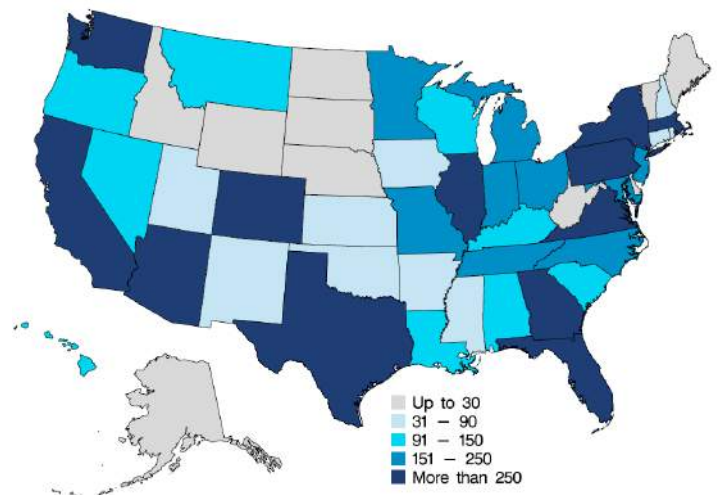
Energy use intensity (EUI) ranges from less than 100 to more than 800 kBtu/ft² across all hotels, with those at the 95th percentile using almost 4 times the energy of those at the 5th percentile. The distribution has a negative skew, which means the most energy intensive properties are further away from 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.










The median hotel in Portfolio Manager is 78,000 square feet and has about 1.8 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 hotels of all shapes and sizes benchmarking in Portfolio Manager.

Benchmarking by State

Number of Hotels

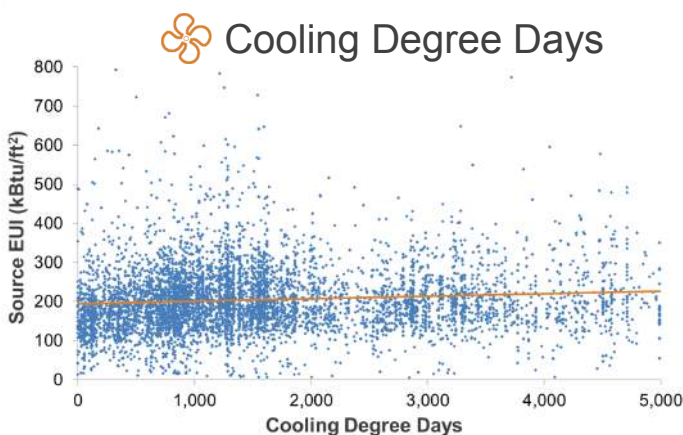
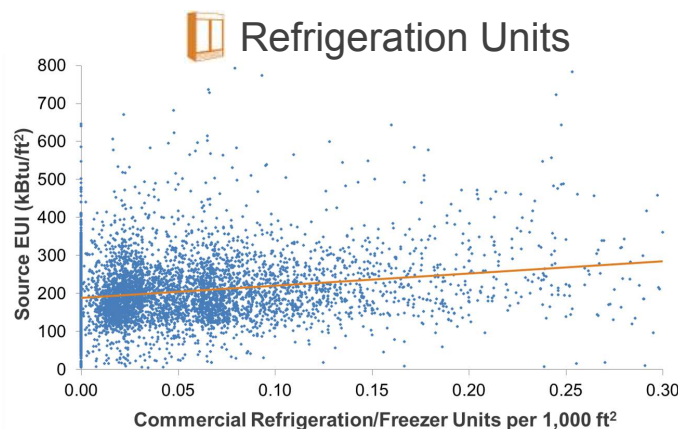


Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
 Square Feet	21,289	78,000	617,226
 Workers per 1,000 ft ²	0.1	0.3	0.7
 Commercial Refrigeration Units per 1,000 ft ²	0.00	0.02	0.15
 Cooking Facilities?	52% say yes		
 Rooms per 1,000 ft ²	0.8	1.8	3.7
 Heating Degree Days	421	3,701	7,230
 Cooling Degree Days	124	1,262	4,257

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 hotels?

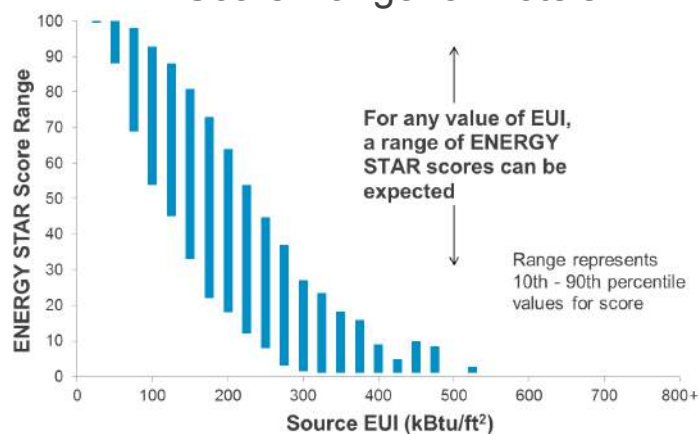
Business activity and climate are often correlated with energy consumption. For example, hotels that have more workers per square foot (related to amenity levels), more commercial refrigeration units per square foot (related to restaurant activity) and/or experience more cooling degree days (CDD) use 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, refrigeration units, and CDD, a broad range in energy use is observed. Similar trends can be seen for other indicators of business activity, such as number of rooms.



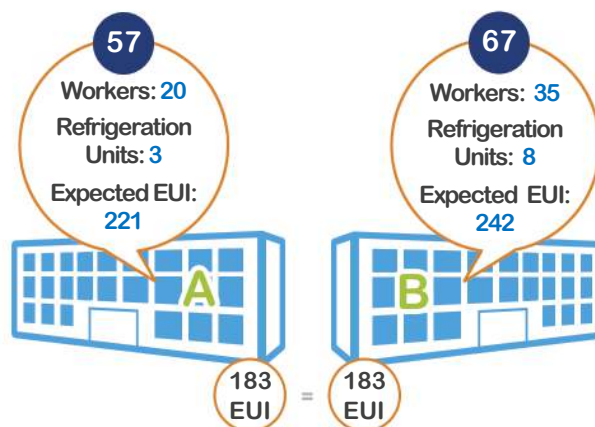
How does EPA's ENERGY STAR score vary with energy use?

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 Hotels



Let's look at two hotels, Hotel A and Hotel B. They have the same EUI of 183 kBtu per square foot, and are identical except that Hotel B has more workers per square foot and more commercial refrigeration units per square foot. Because Hotel B has more intensive activities, it is expected to have a higher EUI than Hotel A, based on ENERGY STAR scoring models. Since Hotel 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 8,326 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.

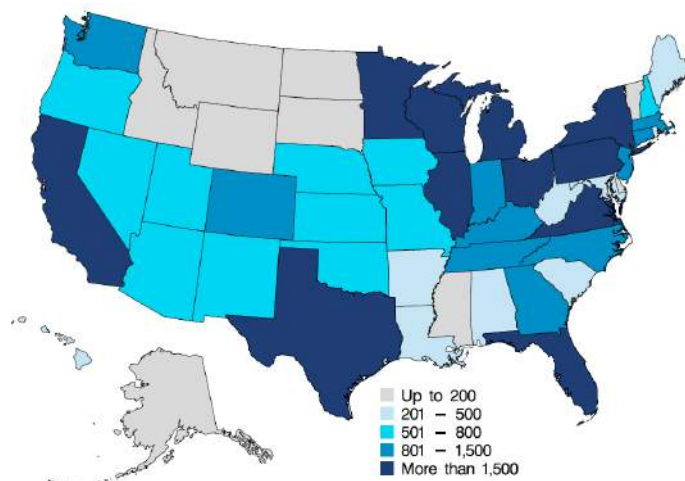
Energy Use in K-12 Schools

K-12 Schools Using Portfolio Manager



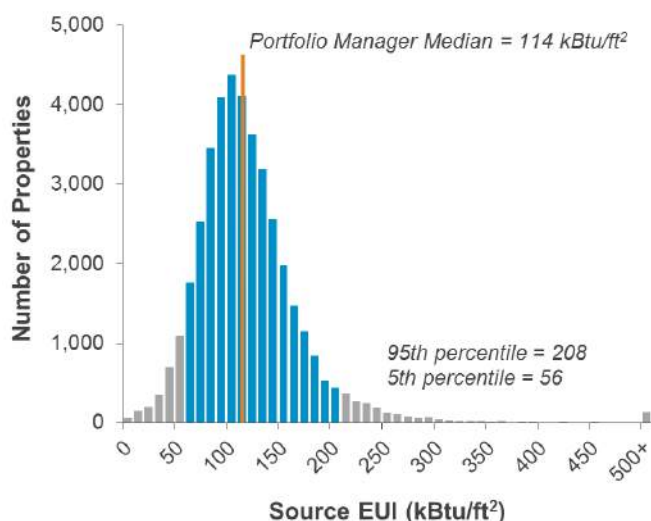
The U.S. Environmental Protection Agency's (EPA) ENERGY STAR Portfolio Manager is changing the way organizations track and manage energy. Because of this widespread market adoption, EPA has prepared the DataTrends series to examine benchmarking and trends in energy and water consumption in Portfolio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

Benchmarking by State Number of K-12 Schools



What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 50 to more than 500 kBtu/ft² across all schools, with those at the 95th percentile using 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 property activities.



The median school in Portfolio Manager is approximately 75,000 square feet and has just over 2 computers per thousand square feet. But the typical building use patterns observed in Portfolio Manager vary just as much as energy. As you can see, there are K-12 Schools of all shapes and sizes benchmarking in Portfolio Manager.

Property Characteristic



Square Feet



Computers per 1,000 ft²



Walk-in Refrigeration Units per 1,000 ft²



Cooking Facilities?



High School?



Heating Degree Days



Cooling Degree Days

Range of Values

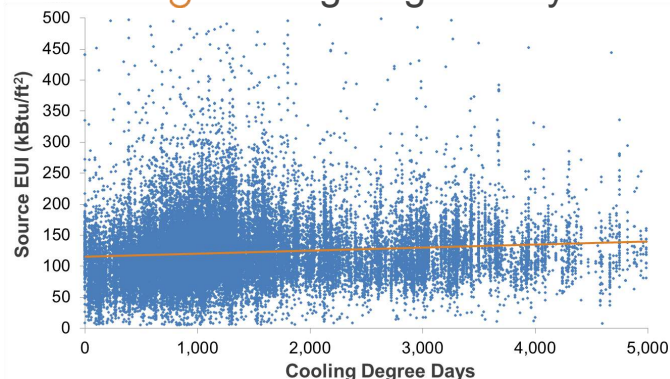
Property Characteristic	5th percentile	Median	95th percentile
Square Feet	23,211	74,519	284,599
Computers per 1,000 ft ²	0.7	2.1	5.2
Walk-in Refrigeration Units per 1,000 ft ²	0.00	0.01	0.04
Cooking Facilities?	79% say yes		
High School?	19% say yes		
Heating Degree Days	1,021	4,710	7,650
Cooling Degree Days	227	1,108	3,432

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.

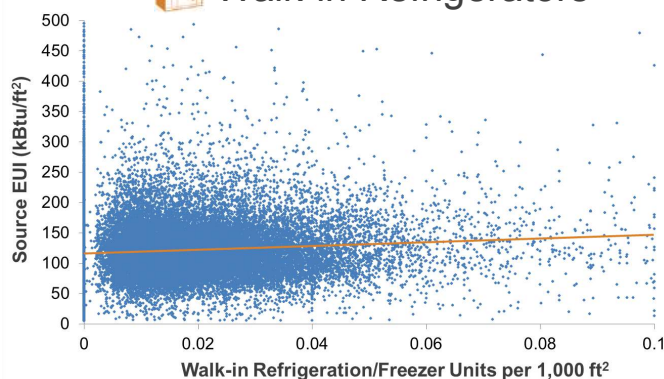
What characteristics affect energy use in schools?

Typical activity and climate are often correlated with energy consumption. For example, schools that experience more cooling degree days (CDD), have more walk-in refrigerators (a measure of cafeteria activity), or more computers per square foot 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 CDD, walk-in refrigerators, and computers, a broad range in energy use is observed. Similar trends can be seen for other indicators of property activity. For example, energy use is higher for high schools than elementary schools.

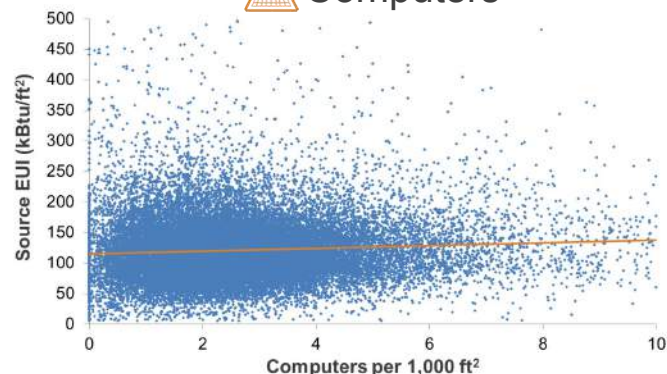
Cooling Degree Days



Walk-in Refrigerators



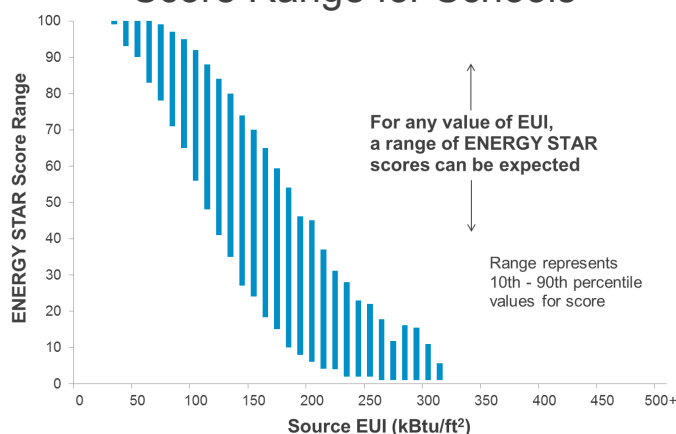
Computers



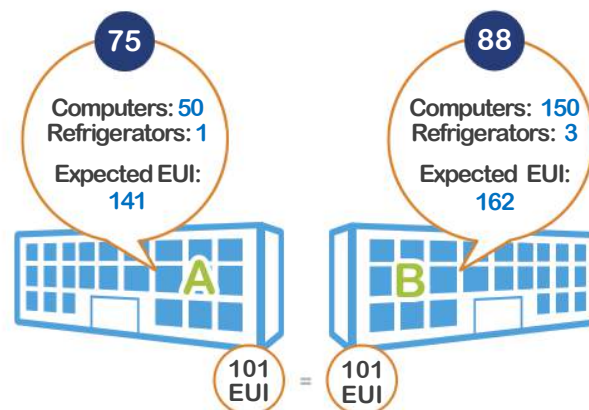
How does EPA's ENERGY STAR score vary with energy use?

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 activities. For any given EUI, a range of scores is possible.

Score Range for Schools



Let's look at two K-12 School properties, School A and School B. They have the same EUI of 101 kBtu per square foot, and are identical except that School B has more computers and walk-in refrigeration units per square foot. Because School B has more intensive activities, it is expected to have a higher EUI than School A, based on ENERGY STAR scoring models. Since School 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 40,655 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.

Energy Use in Medical Offices

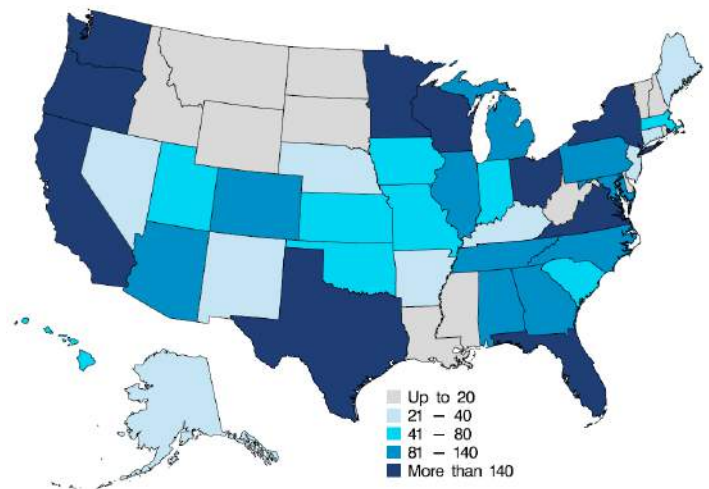
Medical Offices Using Portfolio Manager

-  5,422 Properties
-  353 Million ft²
-  Average
ENERGY STAR Score

41

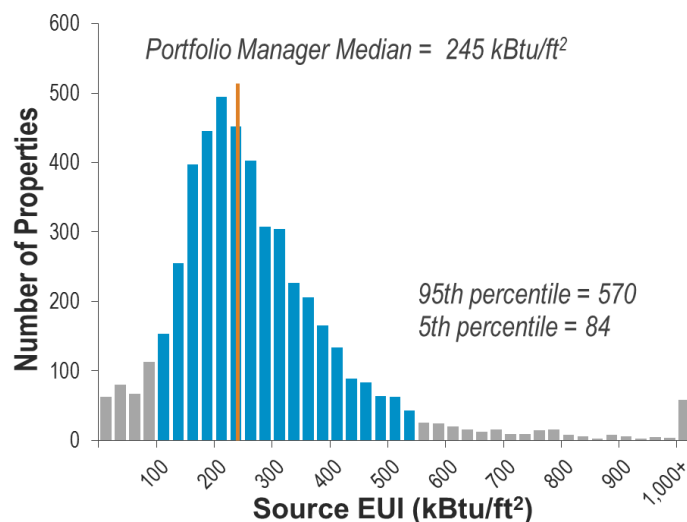
The U.S. Environmental Protection Agency's (EPA) ENERGY STAR Portfolio Manager is changing the way organizations track and manage energy. Because of this widespread market adoption, EPA has prepared the DataTrends series to examine benchmarking and trends in energy and water consumption in Portfolio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

Benchmarking by State Number of Medical Offices



What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 100 to more than 1,000 kBtu/ft² across all medical offices, with those at the 95th percentile using more than 6 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 medical office in Portfolio Manager is approximately 43,000 square feet and operates 65 hours per week. But the typical property use patterns observed in Portfolio Manager vary just as much as energy. As you can see, medical offices of all shapes and sizes benchmark using Portfolio Manager.

Property Characteristic

Range of Values



Square Feet

5th
percentile

Median

95th
percentile

7,114 42,636 202,354



Weekly Operating Hours

40

65

112



Workers per 1000 ft²

0.8

2.2

5.0



Heating Degree Days

804

3,716

7,642



Cooling Degree Days

124

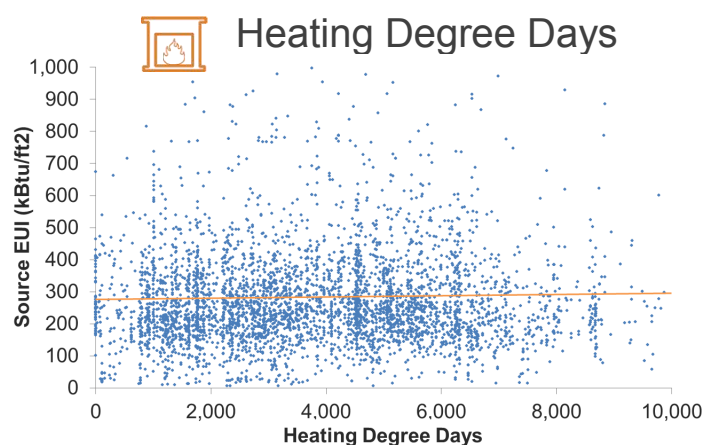
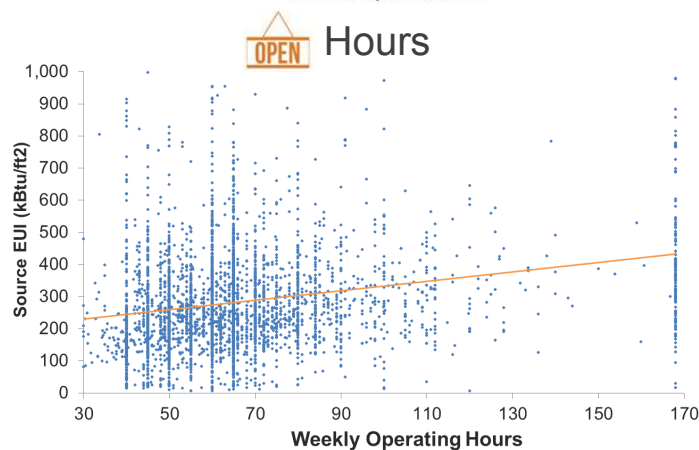
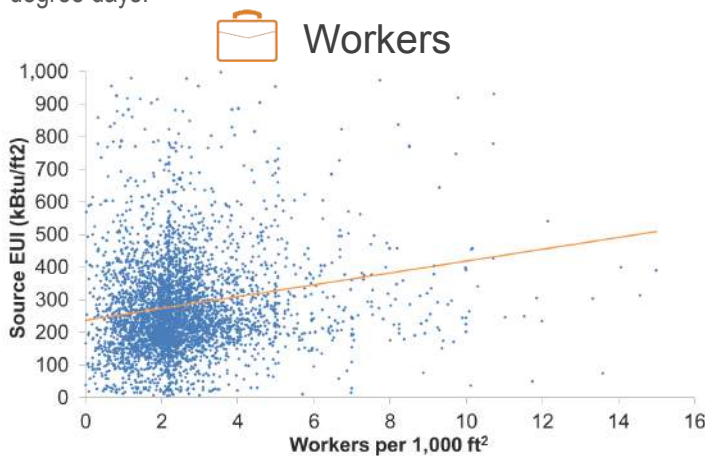
995

3,588

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.

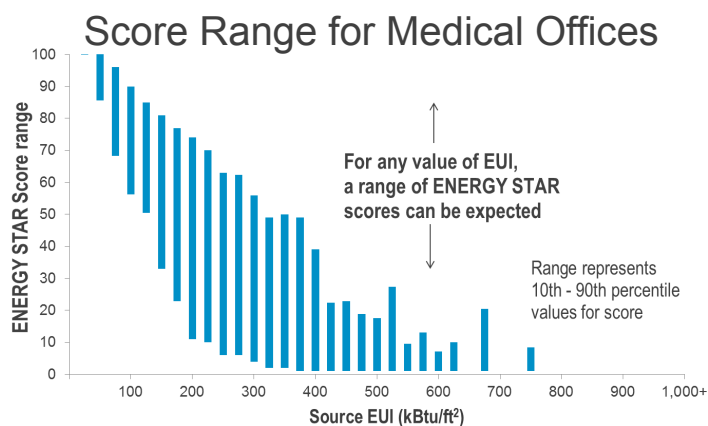
What characteristics affect energy use in medical offices?

Business activity and climate are often correlated with energy consumption. For example, medical offices that have more workers, operate more hours, and/or experience more heating degree days (HDD) 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 HDD, a broad range in energy use is observed. Similar trends can be seen for other property characteristics, such as cooling degree days.

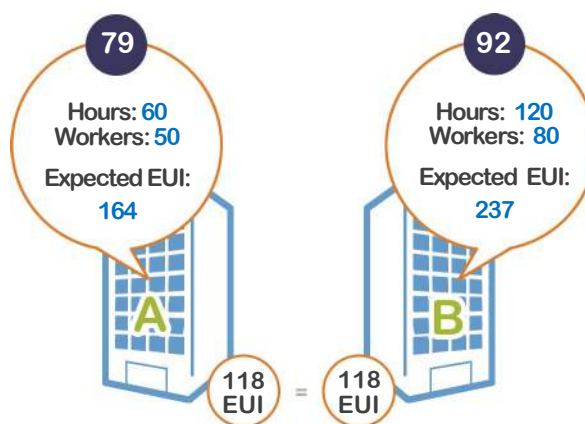


How does EPA's ENERGY STAR score vary with energy use?

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.




Let's look at two medical offices, Office A and Office B. They have the same EUI of 118 kBtu per square foot, and are identical except that Office B has more operating hours and more workers per square foot. Because Office B has more intensive activities, it is expected to have a higher EUI than Office A, based on ENERGY STAR scoring models. Since Office 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 4,877 properties benchmarked between 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.

Energy Use in Non-Refrigerated Warehouses

Non-Refrigerated Warehouses Using Portfolio Manager

 7,976 Properties

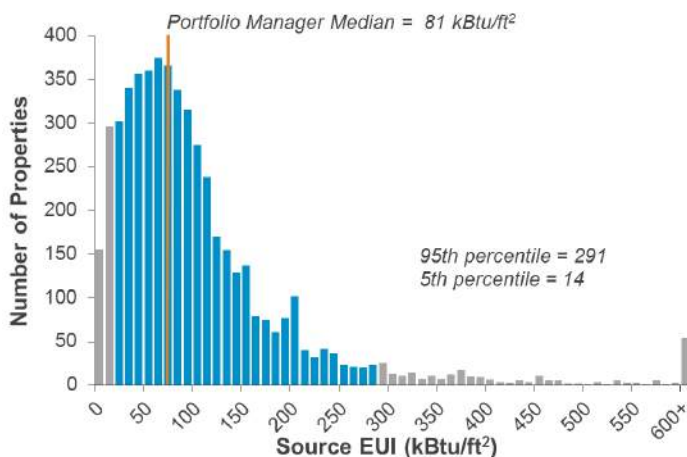
 669 Million ft²

 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?

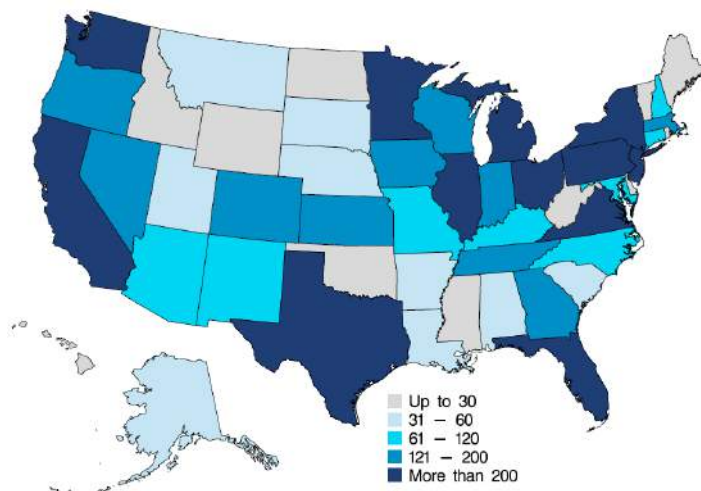
Energy use intensity (EUI) ranges from less than 50 to more than 600 kBtu/ft² across all non-refrigerated warehouses, with those at the 95th percentile using nearly 21 times the energy of those at the 5th percentile. The distribution has a negative skew, which means the most energy intensive properties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

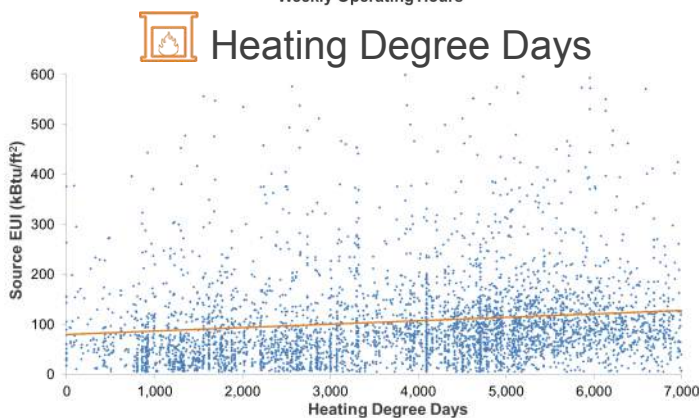
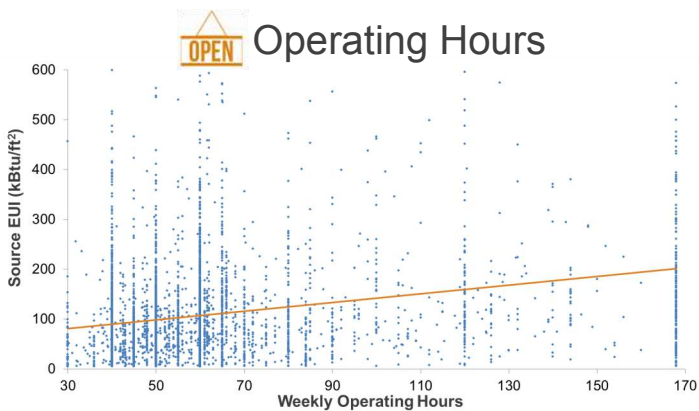
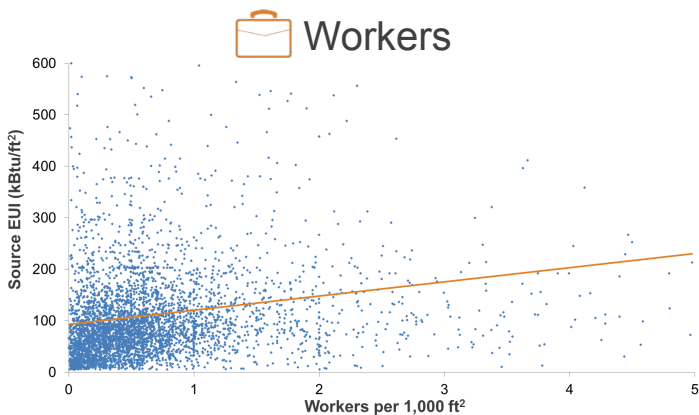


Range of Values			
Property Characteristic	5th percentile	Median	95th percentile
 Square Feet	7,245	36,316	337,740
 Weekly Operating Hours	40	55	141
 Workers per 1,000 ft ²	0.1	0.6	1.9
 Walk-in Refrigerators?	3% say yes		
 Heating Degree Days	911	4,483	7,854
 Cooling Degree Days	124	1,056	3,285

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?

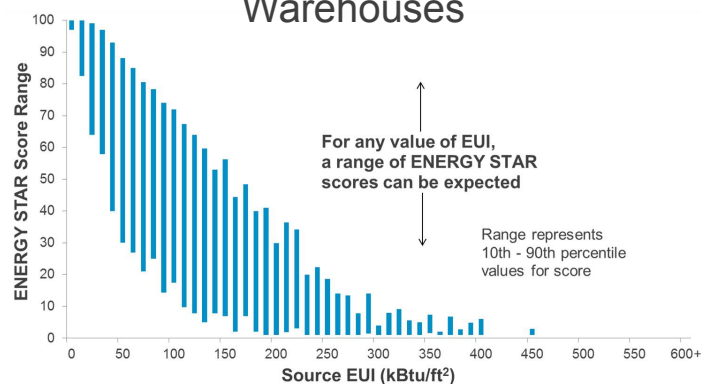
Business activity and climate are often correlated with energy consumption. For example, non-refrigerated warehouses that have more workers per square foot, operate more hours and/or experience more heating degree days (HDD) use more energy, on average. The orange trend lines in the graphs below are 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.



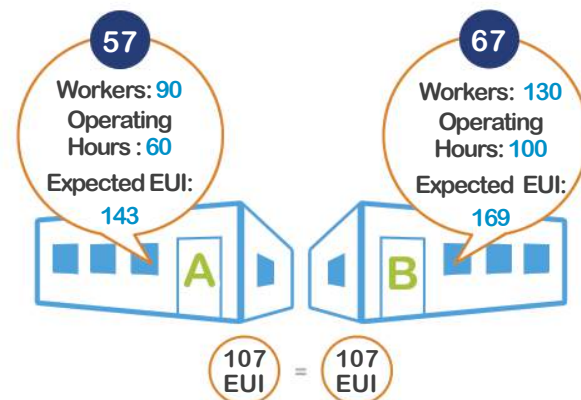
How does EPA's ENERGY STAR score vary with energy use?

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.

Energy Use in Offices

Offices Using Portfolio Manager



60,848 Properties



8.7 Billion ft²

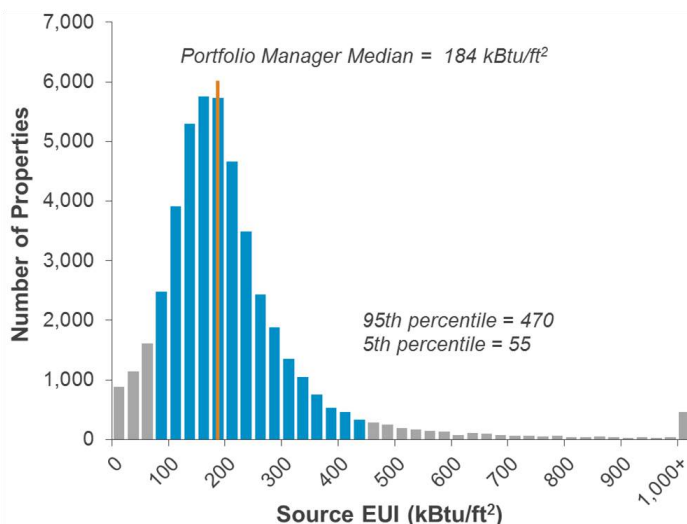
63

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.

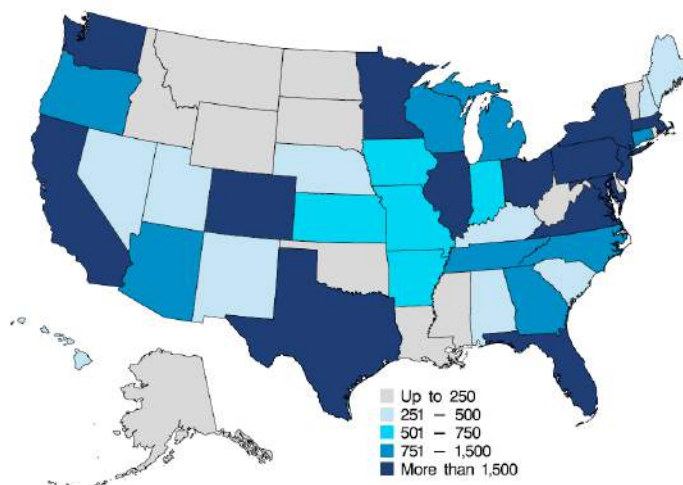
What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 100 to more than 1,000 kBtu/ft² across all offices, with those at the 95th percentile using almost 9 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 office in Portfolio Manager is about 63,000 square feet and operates 60 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 offices of all shapes and sizes benchmarking in Portfolio Manager.

Benchmarking by State Number of Offices

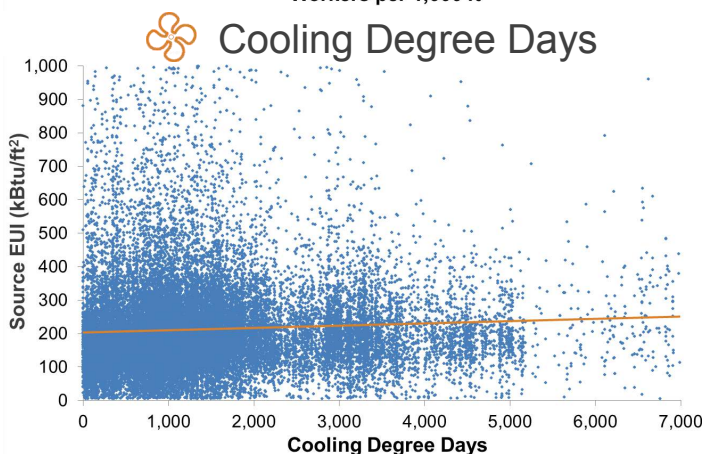
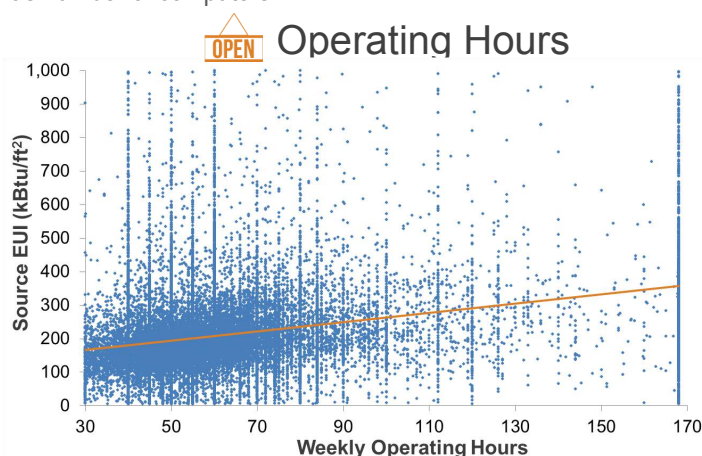


Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
Square Feet	7,381	63,463	522,173
Operating Hours	40	60	105
Workers per 1,000 ft ²	0.6	2.3	5.5
Computers per 1,000 ft ²	0.6	2.3	6.5
Heating Degree Days	738	4,215	7,360
Cooling Degree Days	124	1,108	3,643

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.

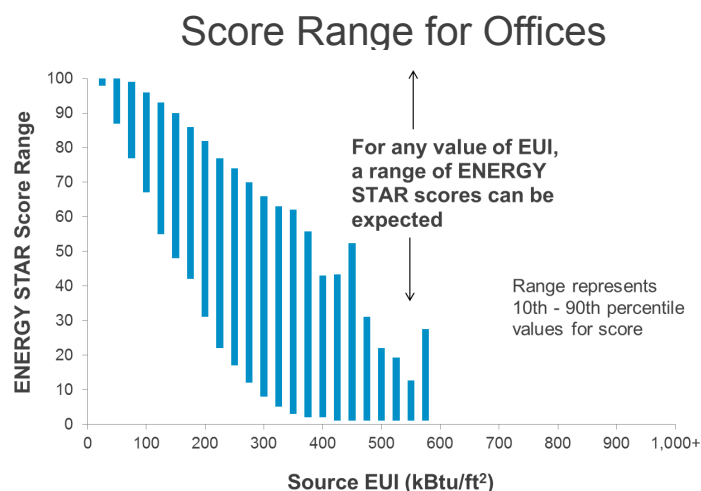
What characteristics affect energy use in offices?

Business activity and climate are often correlated with energy consumption. For example, offices that are open longer hours, have more workers per square foot, and/or experience more cooling degree days (CDD) use more energy, on average. The orange trend lines in the graphs below are steeper for hours and workers, meaning that these characteristics have a stronger effect on energy than CDD. While these trends hold true on average, two properties 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 computers.

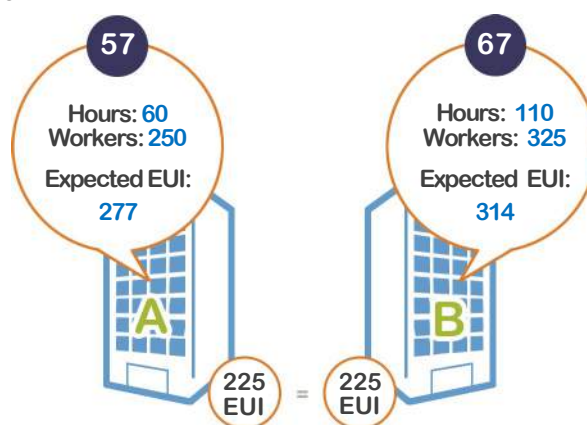


How does EPA's ENERGY STAR score vary with energy use?

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 offices, Office A and Office B. They have the same EUI of 225 kBtu per square foot, and are identical except that Office B is open longer hours and has more workers per square foot. Because Office B has more intensive activities, it is expected to have a higher EUI than Office A, based on ENERGY STAR scoring models. Since Office 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 46,306 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.

Energy Use in Retail Stores

Retail Stores Using Portfolio Manager



55,131 Properties



2.5 Billion ft²

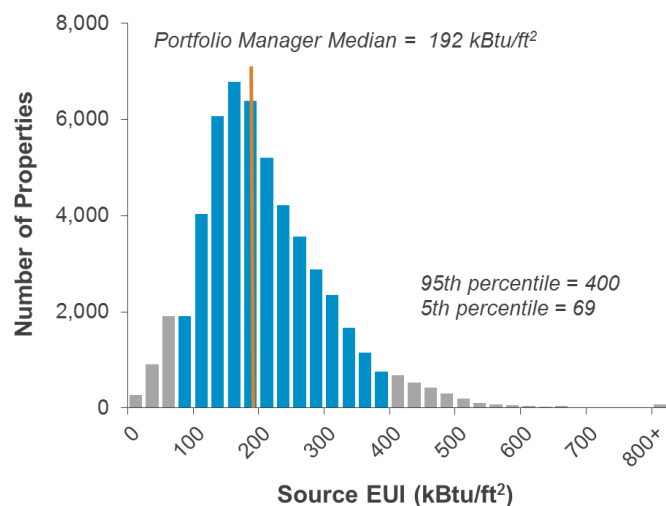
64

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.

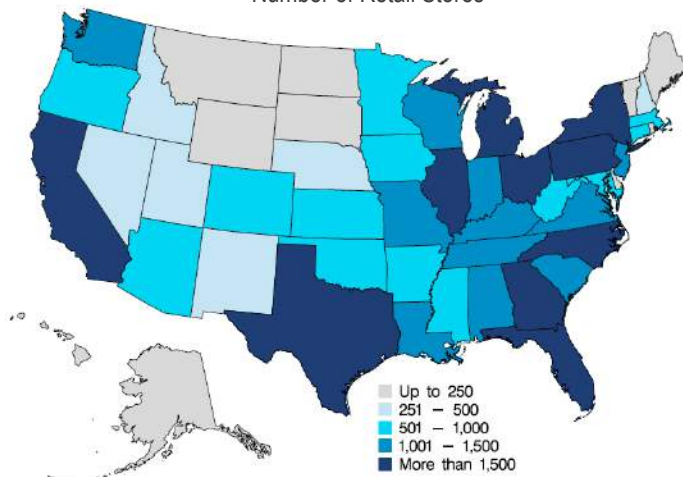
What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 100 to more than 800 kBtu/ft² across all retail stores, with those at the 95th percentile using almost 6 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 retail store in Portfolio Manager is about 14,000 square feet and operates over 90 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 retail stores of all shapes and sizes benchmarking in Portfolio Manager.

Benchmarking by State Number of Retail Stores

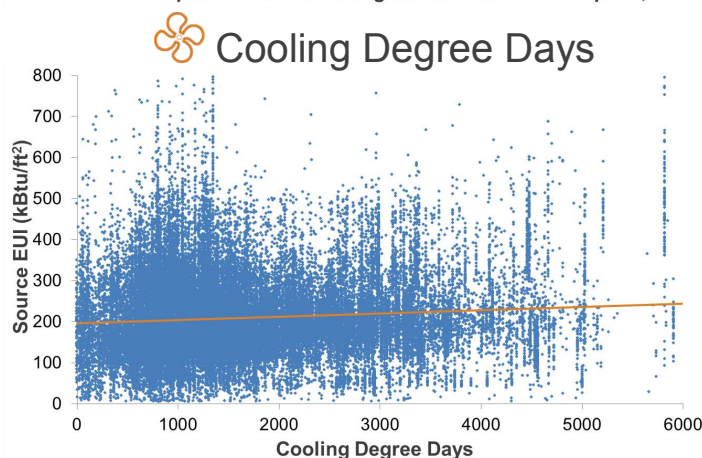
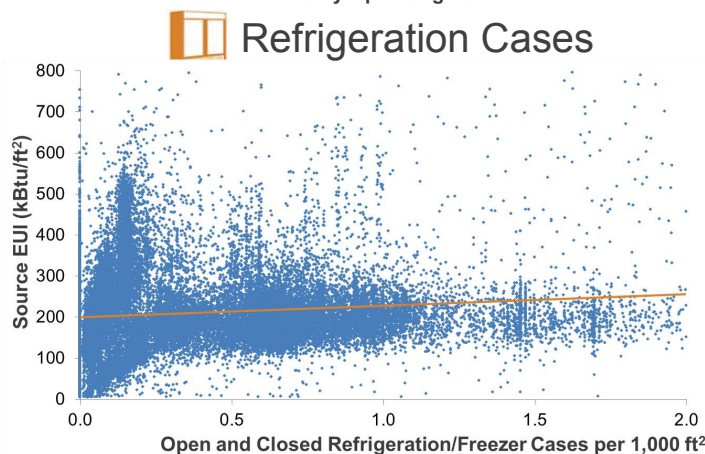
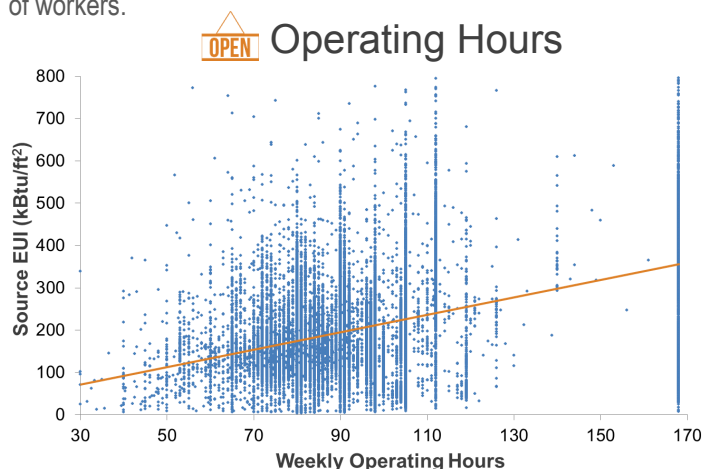


Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
Square Feet	7,106	14,010	127,455
Operating Hours	71	91	168
Workers per 1,000 ft ²	0.1	0.4	1.0
Cash Registers per 1,000 ft ²	0.1	0.3	0.8
Computers per 1,000 ft ²	0.0	0.2	0.8
Walk-in Refrigeration Units per 1,000 ft ²	0.0	0.0	0.1
Open/Closed Refrigeration Cases per 1,000 ft ²	0.0	0.2	1.0
Heating Degree Days	477	3,965	7,455
Cooling Degree Days	380	1,363	3,710

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.

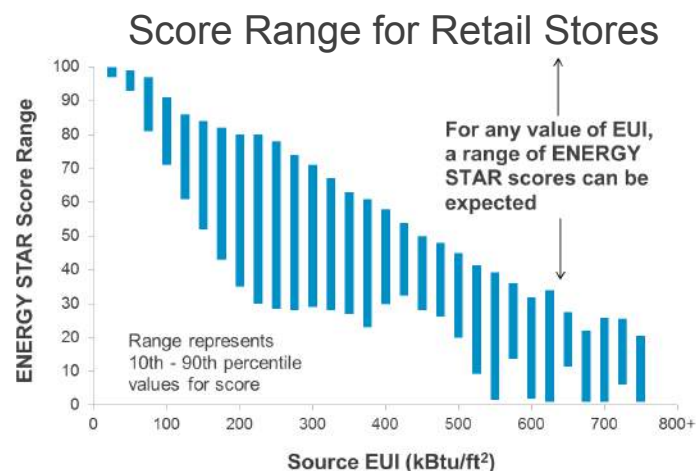
What characteristics affect energy use in retail stores?

Business activity and climate are often correlated with energy consumption. For example, retail stores that are open longer hours, have more refrigeration cases, 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 that hours has a stronger effect on energy than CDD or refrigeration. While these trends hold true on average, two properties with the same hours could have very different energy use, 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.

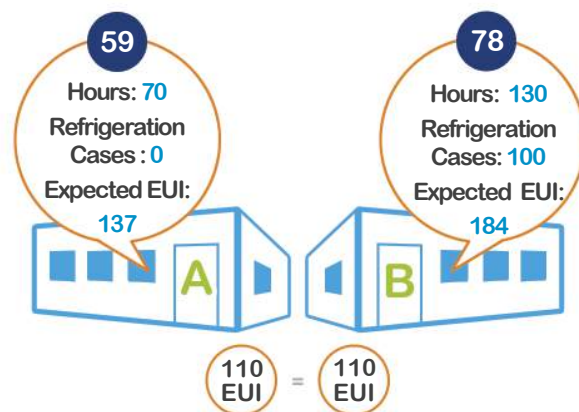


How does EPA's ENERGY STAR score vary with energy use?

EPA's ENERGY STAR score normalizes for the effects of operation. While 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 retail stores, Store A and Store B. They have the same EUI of 110 kBtu per square foot, and are identical except that Store B is open longer and has more 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: Total number and floor area of properties benchmarked reflects cumulative data through 2013. Analysis of energy use and operational characteristics includes 52,682 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.

Energy Use in Senior Care Communities

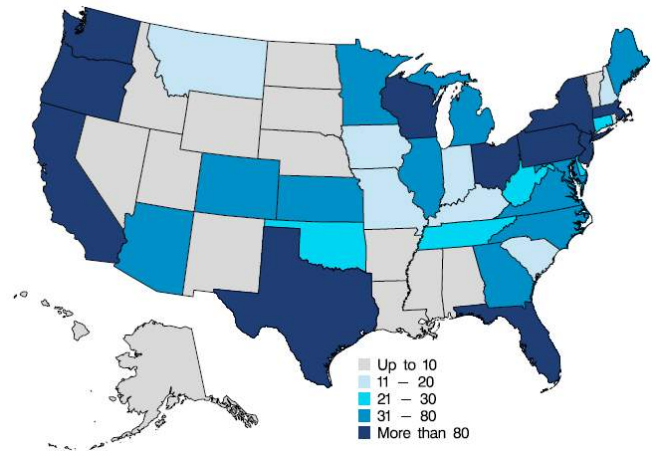
Senior Care Communities Using Portfolio Manager



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.

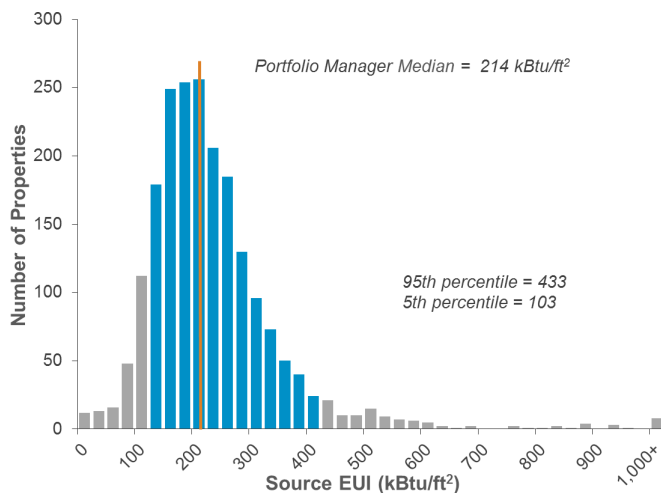
Benchmarking by State

Number of Senior Care Communities



What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 100 to more than 1,000 kBtu/ft² across all senior care communities, with those at the 95th percentile using about 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.



The median senior care community in Portfolio Manager is about 58,000 square feet and has 1.4 units 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 senior care communities of all shapes and sizes benchmarking in Portfolio Manager.

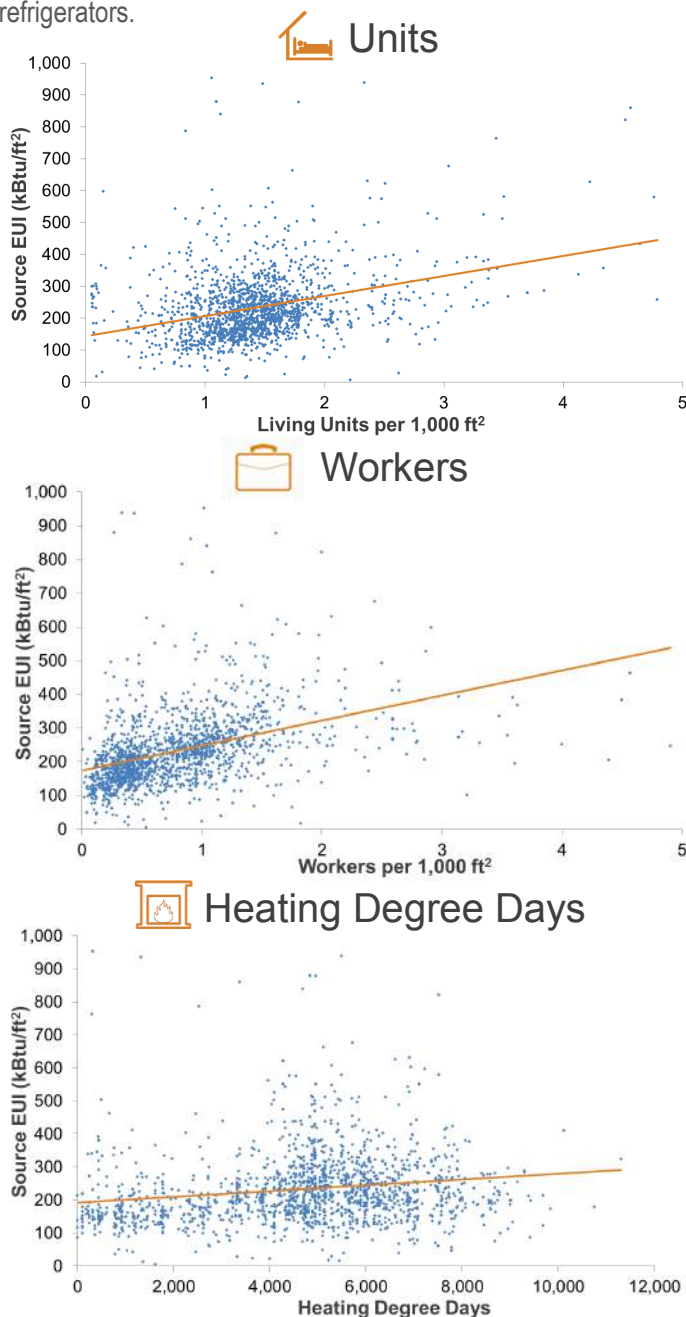
Range of Values

Property Characteristics	5th Percentile	Median	95th Percentile
Square Feet	16,036	57,774	230,700
Workers per 1,000 ft ²	0.2	0.8	1.8
Computers per 1,000 ft ²	0.1	0.3	1.2
Commercial Refrigerators per 1,000 ft ²	0.0	0.1	0.2
Commercial Washing Machines per 1,000 ft ²	0.00	0.03	0.09
Residential Washing Machines per 1,000 ft ²	0.0	0.1	0.2
Electronic Lifts per 1,000 ft ²	0.0	0.1	0.2
Units per 1,000 ft ²	0.7	1.4	2.4
Percent Resident Capacity	62%	87%	100%
Heating Degree Days	840	4,888	7,731
Cooling Degree Days	197	949	3,334

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.

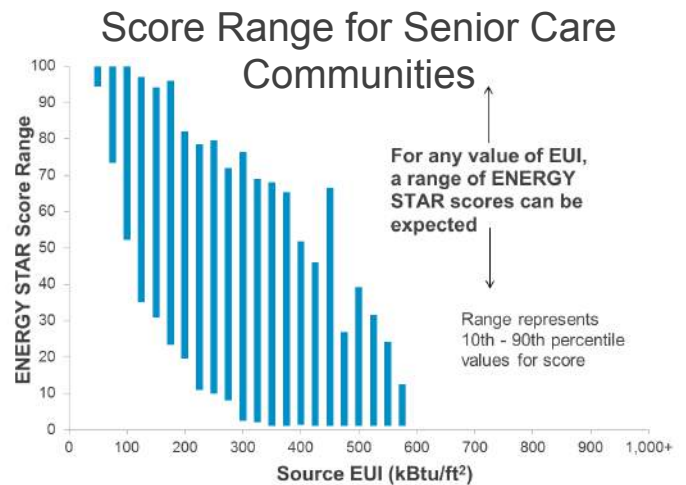
What characteristics affect energy use in senior care communities?

Business activity and climate are often correlated with energy consumption. For example, senior care communities that have more units per square foot, more workers per square foot, and/or experience more heating degree days (HDD) use more energy, on average. The orange trend lines in the graphs below are steeper for unit density and workers, 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 units 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 refrigerators.

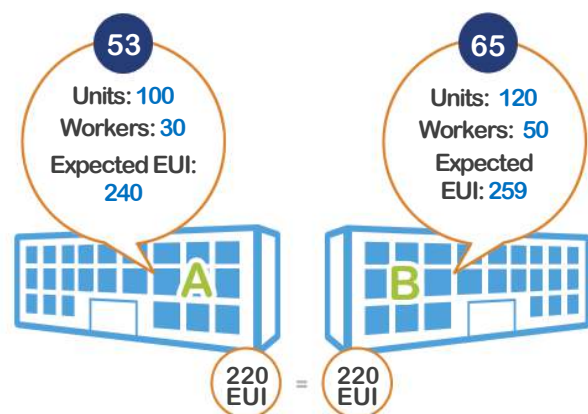


How does EPA's ENERGY STAR score vary with energy use?

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 senior care communities, Community A and Community B. They have the same EUI of 220 kBtu per square foot, and are identical except that Community B has more units per square foot and more workers per square foot. Because Community B has more intensive activities, it is expected to have a higher EUI than Community A, based on ENERGY STAR scoring models. Since Community 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 2,054 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.

Energy Use in Supermarkets

Supermarkets Using Portfolio Manager

 15,639 Properties

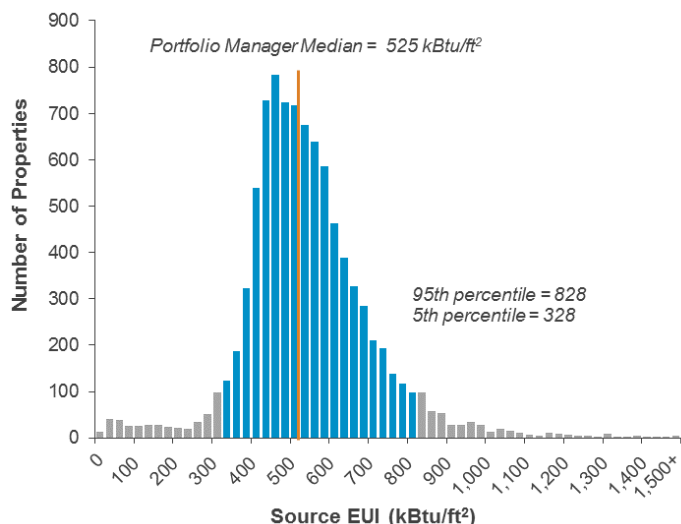
 702 Million ft²

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.

What is a typical operating profile?

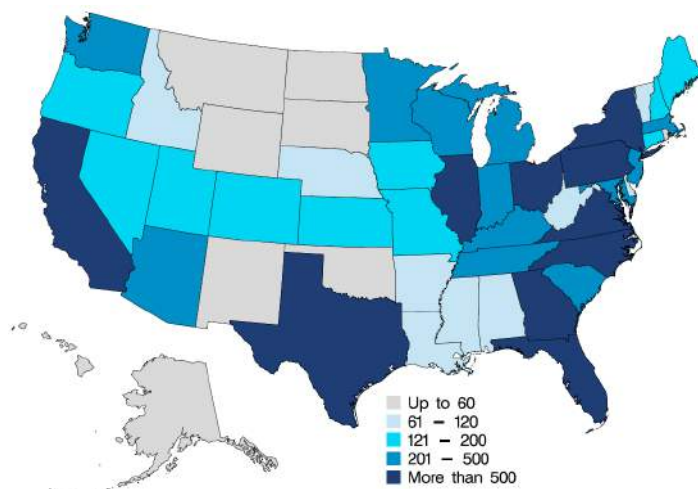
Energy use intensity (EUI) ranges from less than 100 to more than 1,500 kBtu/ft² across all supermarkets, with those at the 95th percentile using more than twice the energy of those at the 5th percentile. The distribution has a negative skew, which means the most energy intensive properties are further 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.

Benchmarking by State

Number of Supermarkets



Property Characteristic

Range of Values



Square Feet

5th percentile

Median

95th percentile

19,785

50,009

92,961



Weekly Operating Hours

98

126

168



Workers per 1,000 ft²

0.4

0.9

1.5



Walk-in Refrigeration Units per 1,000 ft²

0.1

0.2

0.3



Cooking Facilities?

94% say yes



Heating Degree Days

865

4,710

7,403



Cooling Degree Days

314

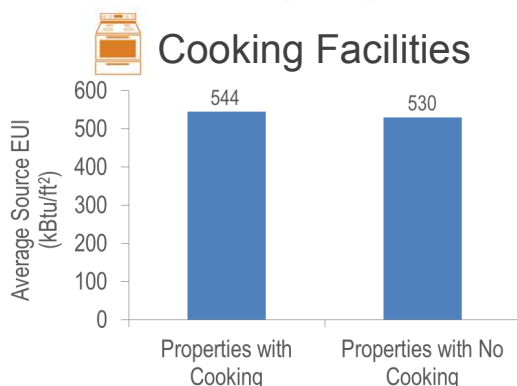
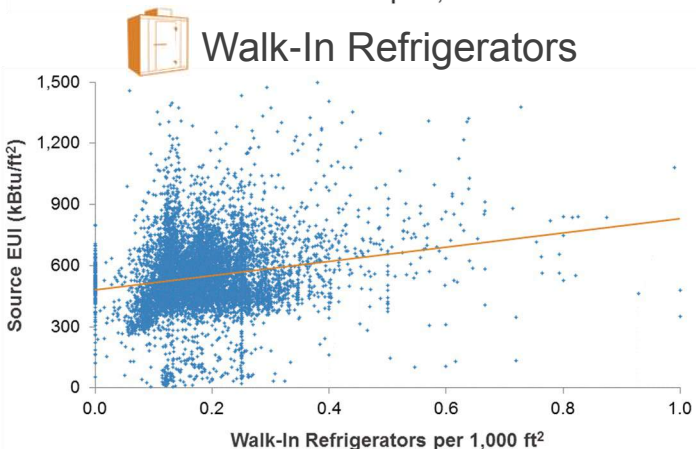
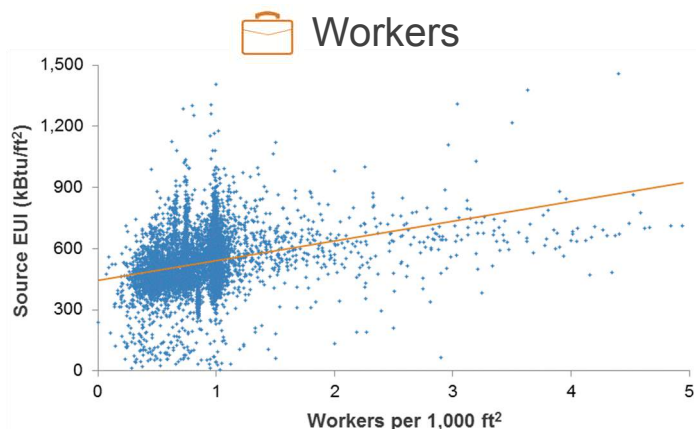
1,059

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.

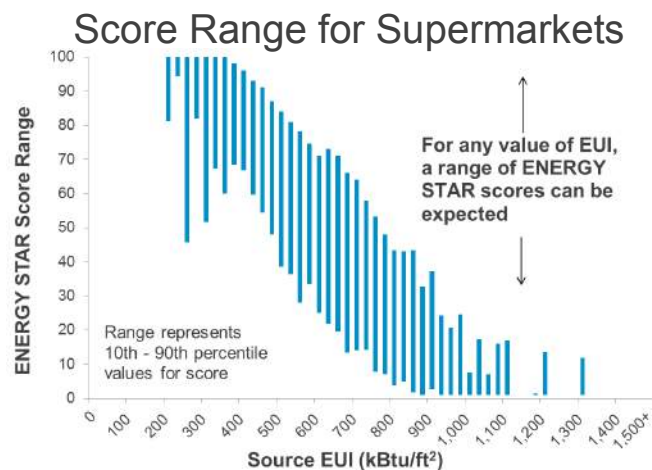
What characteristics affect energy use in supermarkets?

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.

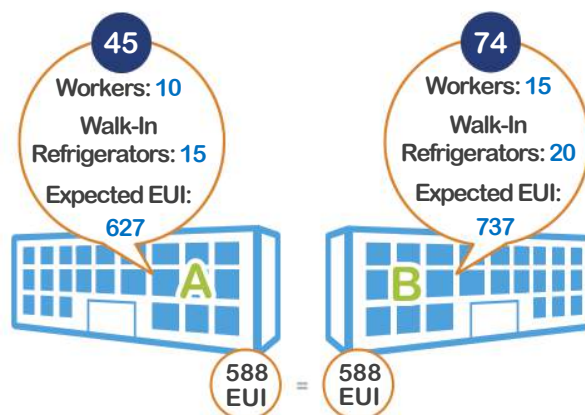


How does EPA's ENERGY STAR score vary with energy use?

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.

Energy Use in Wastewater Treatment Plants

Wastewater Treatment Plants Using Portfolio Manager



1,377 Properties



16.8 Billion Gallons per Day

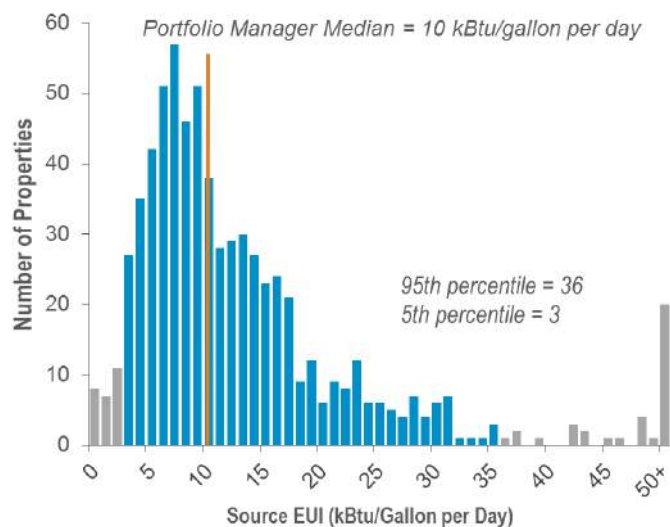
48

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?

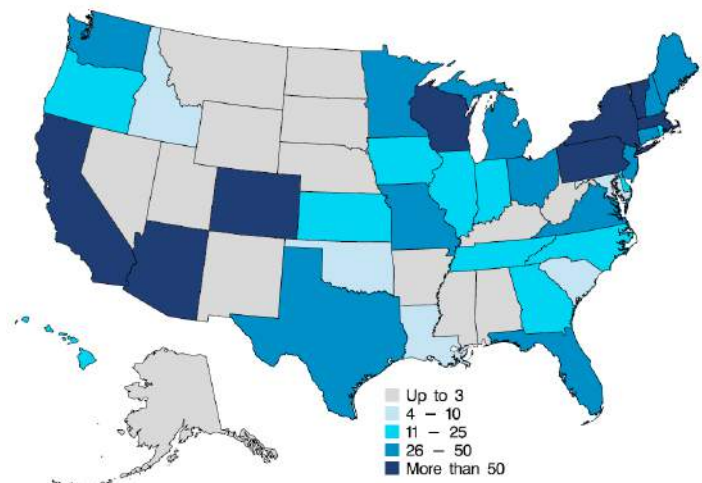
Energy use intensity (EUI) ranges from less than 5 to more than 50 kBtu/gallon per day (kBtu/GPD) across all wastewater treatment plants, with those at the 95th percentile using nine times the energy of those at the 5th percentile. The distribution has a negative skew, which means the most energy intensive plants are further away from the median than the most efficient. Plants 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 size of wastewater treatment plants varies with the population served. The median wastewater treatment plant in Portfolio Manager treats approximately 3 million gallons per day (MGD), but some larger plants may process as much as 50 MGD or more. As you can see, there are plants of all sizes and types benchmarking in Portfolio Manager.

Benchmarking by State

Number of Wastewater Treatment Plants

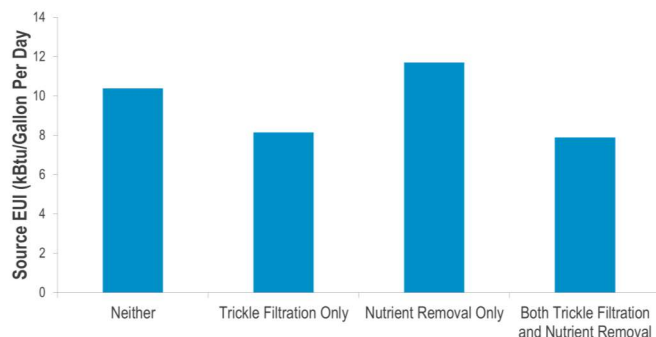
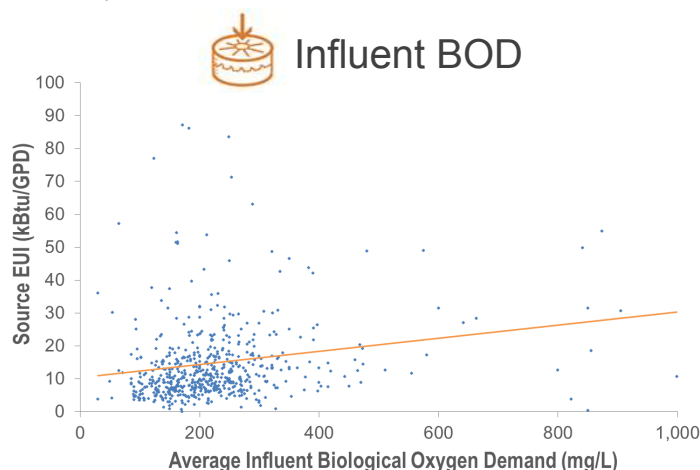


Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
Influent Flow (MGD)	0.2	3	74
Influent Biological Oxygen Demand (mg/L)	102	200	391
Effluent Biological Oxygen Demand (mg/L)	1	5	20
Plant Load Factor (%)	25	60	100
Trickle Filtration?	13% say yes		
Nutrient Removal?	57% say yes		
Heating Degree Days	928	5,343	7,877
Cooling Degree Days	223	910	4,243

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 wastewater treatment plants?

In wastewater treatment plants, energy consumption is often correlated with the magnitude and type of pollutant load, which can influence the treatment methods and technologies used in a plant. Wastewater treatment plants that have more influent biological oxygen demand (BOD) use more energy, on average, as shown by the slope of the orange trend line in the graph below. The bar graph below shows that plants that utilize trickle filtration have lower energy intensity on average, while plants that utilize nutrient removal in the treatment process have higher energy intensity on average. Nutrient removal is often necessary near sensitive waters.



Wastewater Treatment Terminology



Biological Oxygen Demand (BOD) is the measure of the amount of oxygen required by bacteria for stabilizing material that can be decomposed under aerobic conditions. BOD is a commonly used determinant of the organic strength of waste.



Plant load factor indicates how closely the plant is being operated to design capacity. Most plants are used at between 40% and 100% of design capacity.



Trickle Filtration is a process used to reduce BOD and ammonia nitrogen levels. Trickling filters are composed of a bed of porous material. Wastewater is distributed over the surface of the media for aerobic treatment.

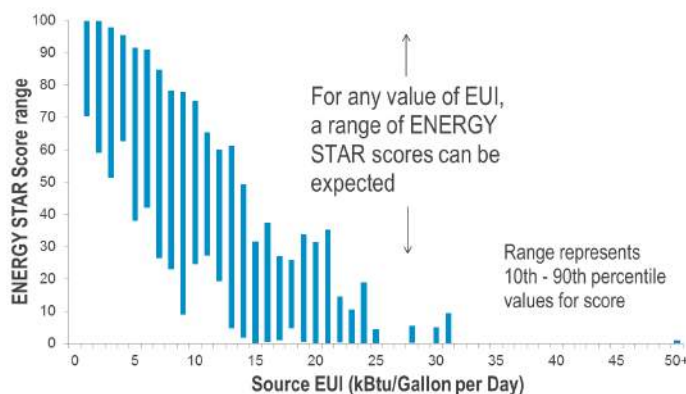


Nutrient removal is considered to be any process included for the purpose of removing nutrients. This may include biological nitrification, biological denitrification, phosphorus removal, or recirculating sand filters.

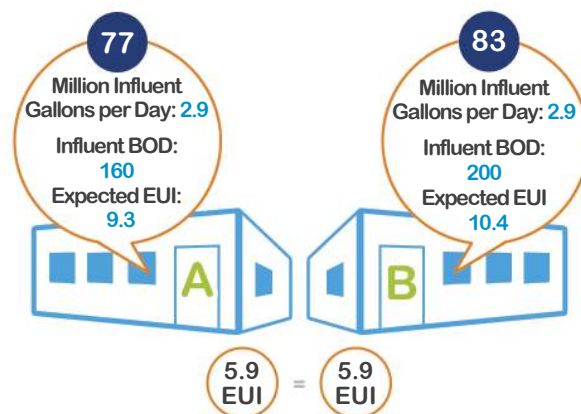
How does EPA's ENERGY STAR score vary with energy use?

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 Wastewater Treatment Plants



Let's look at two wastewater treatment plants, Plant A and Plant B. They have the same EUI of 5.9 kBtu per gallon per day, and are identical except that Plant B has more influent biological oxygen demand. Because Plant B has more BOD it is expected to have a higher EUI than Plant A, based on ENERGY STAR scoring models. Since Plant B is *expected* to use more energy, but *actually* uses the same energy, it earns a higher score.



Note: Total number of plants benchmarked and total flow rate reflects cumulative data through 2013. Analysis of energy use and property characteristics includes 698 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.

Energy Use in Worship Facilities

Worship Facilities Using Portfolio Manager



2,235 Properties



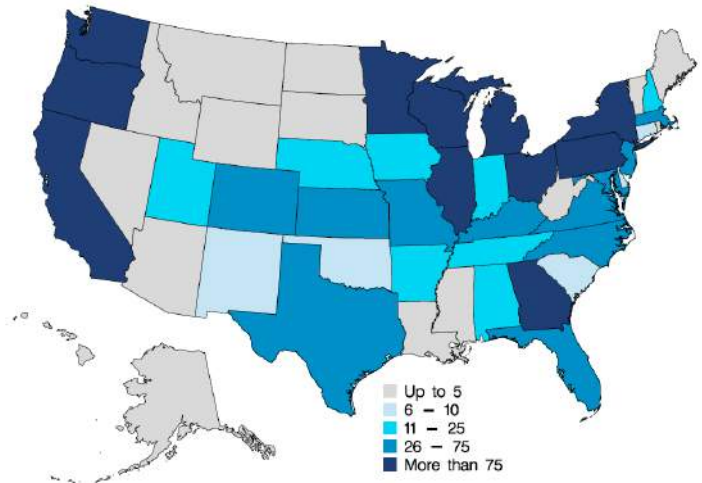
88 Million ft²

50

Average
ENERGY STAR Score

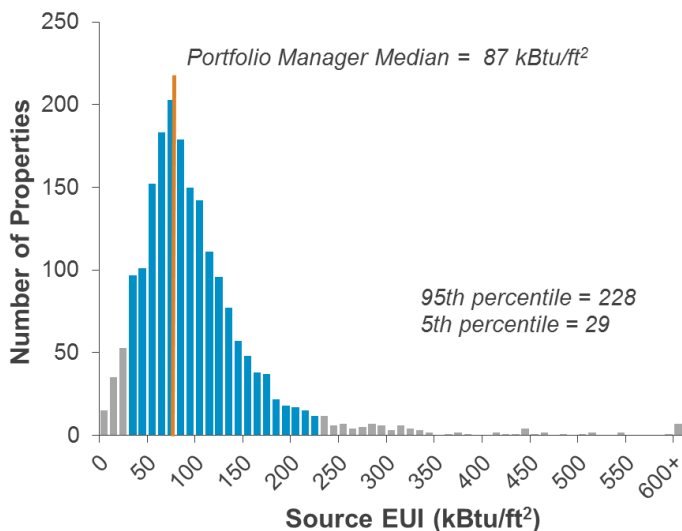
The U.S. Environmental Protection Agency's (EPA) ENERGY STAR Portfolio Manager is changing the way organizations track and manage energy. Because of this widespread market adoption, EPA has prepared the DataTrends series to examine benchmarking and trends in energy and water consumption in Portfolio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

Benchmarking by State Number of Worship Facilities



What is a typical operating profile?

Energy use intensity (EUI) ranges from less than 50 to more than 600 kBtu/ft² across all worship facilities, 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 typical activities.



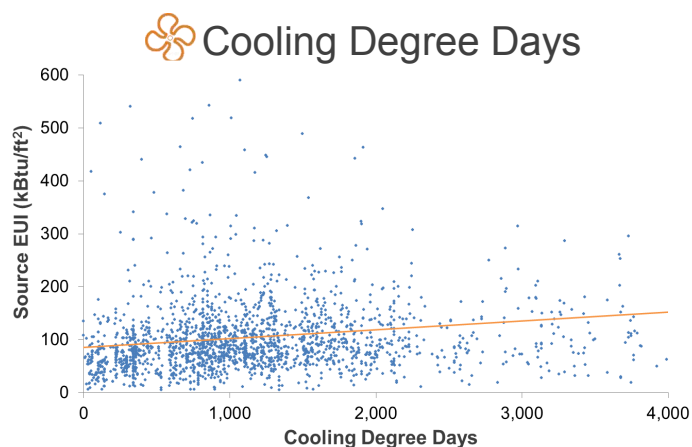
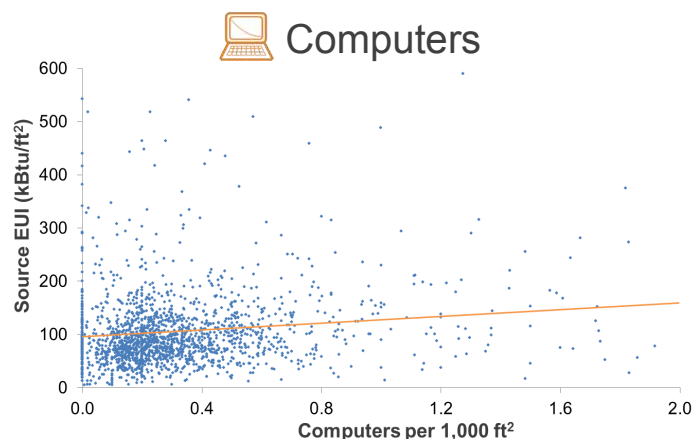
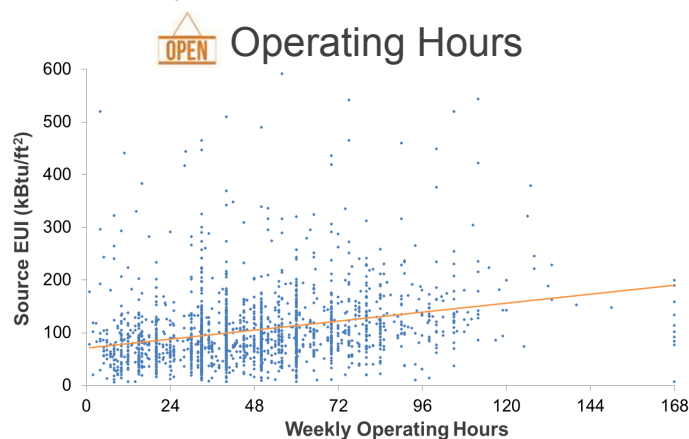
The median worship facility in Portfolio Manager is 23,000 square feet and operates 45 hours per week. But the typical property use patterns observed in Portfolio Manager vary just as much as energy. As you can see, worship facilities of all shapes and sizes benchmark using Portfolio Manager.

Property Characteristic	Range of Values		
	5th percentile	Median	95th percentile
Square Feet	5,136	23,000	110,000
Weekly Operating Hours	10	45	98
Computers per 1,000 ft ²	0.0	0.2	0.9
Seats per 1,000 ft ²	6	18	51
Open All 5 Weekdays?	72% say yes		
Cooking Facilities?	69% say yes		
Commercial Refrigeration Units per 1,000 ft ²	0.00	0.02	0.20
Heating Degree Days	1,595	4,888	7,977
Cooling Degree Days	142	1,033	2,885

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 worship facilities?

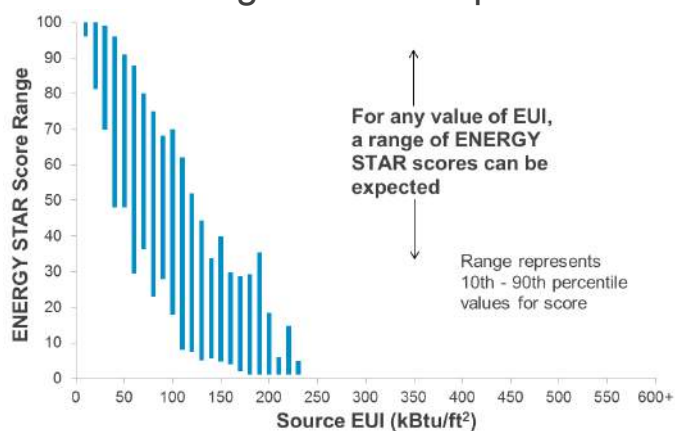
Facility activity and climate are often correlated with energy consumption. For example, worship facilities that have more weekly operating hours, more computers per square foot, and/or experience more cooling degree days (CDD) use more energy, on average. The orange trend lines in the graphs below show 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 hours, computers, and CDD, a broad range in energy use is observed. Similar trends can be seen for other indicators of business activity, such as seats per 1,000 square feet.



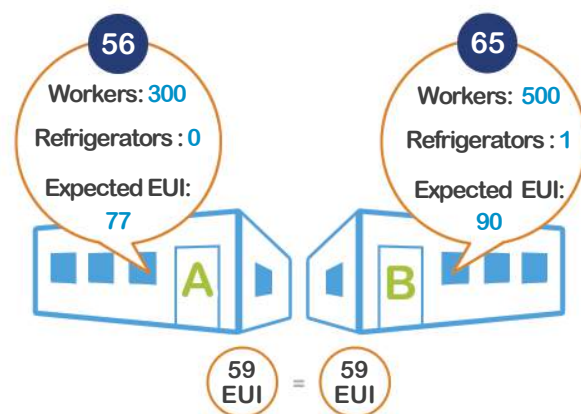
How does EPA's ENERGY STAR score vary with energy use?

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 Worship Facilities



Let's look at two worship facilities, Facility A and Facility B. They have the same EUI of 59 kBtu per square foot, and are identical except that Facility B has more workers per square foot and more refrigerators per square foot. Because Facility B has more intensive activities, it is expected to have a higher EUI than Facility A, based on ENERGY STAR scoring models. Since Facility 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 1,952 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.