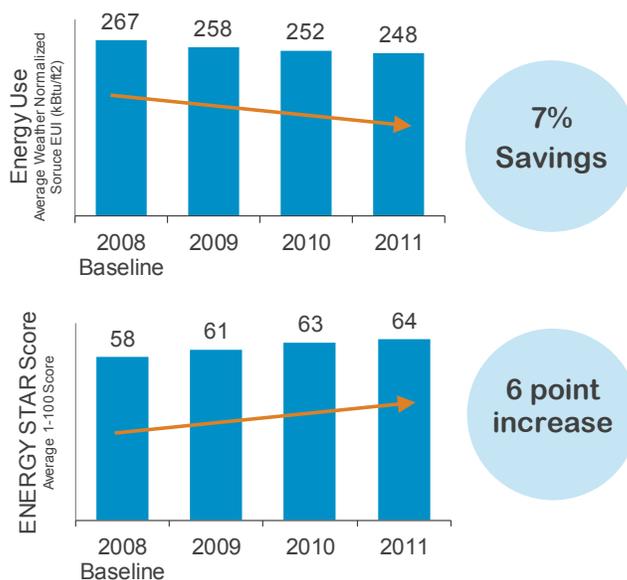


## Benchmarking and Energy Savings

Do buildings that consistently benchmark energy performance save energy? The answer is yes, based on the large number of buildings using the U.S. Environmental Protection Agency's (EPA's) ENERGY STAR Portfolio Manager to track and manage energy use. Over 35,000 buildings entered complete energy data in Portfolio Manager and received ENERGY STAR scores for 2008 through 2011, which represents three years of change from a 2008 baseline. These buildings realized savings every year, as measured by average weather-normalized energy use intensity and the ENERGY STAR score, which accounts for business activity. Their average annual savings is 2.4%, with a total savings of 7.0% and score increase of 6 points over the period of analysis.

### Energy Savings in Portfolio Manager

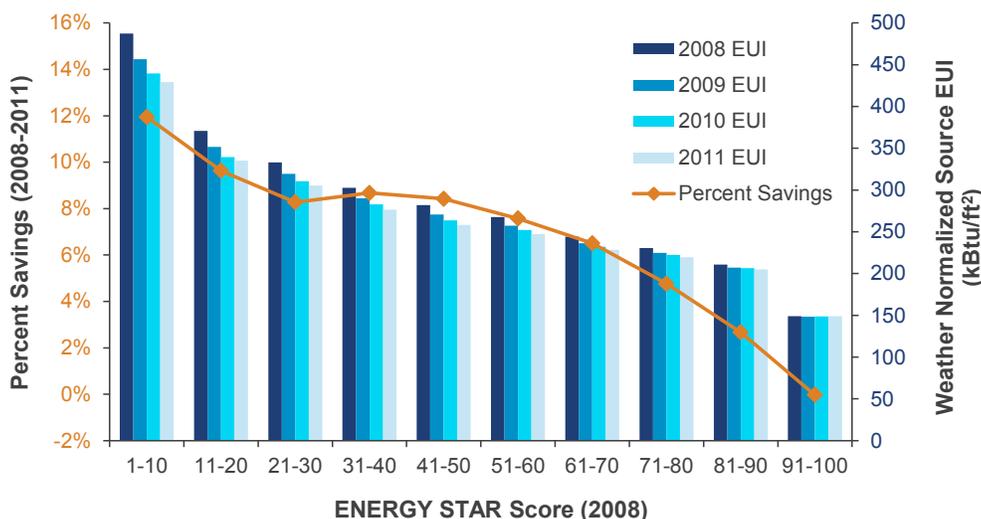


**7% average energy savings and 6 point ENERGY STAR score increase among Portfolio Manager buildings**

### Which buildings experienced the greatest savings?

Buildings that start with lower ENERGY STAR scores and higher energy use achieve the greatest savings. In fact, buildings starting with below average energy efficiency in 2008 (i.e., score under 50) saved twice as much energy as those starting above average.

### Savings Vary with ENERGY STAR Score



#### 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 the energy. Source energy enables the most complete and equitable energy assessment. Learn more at: [www.energystar.gov/SourceEnergy](http://www.energystar.gov/SourceEnergy)

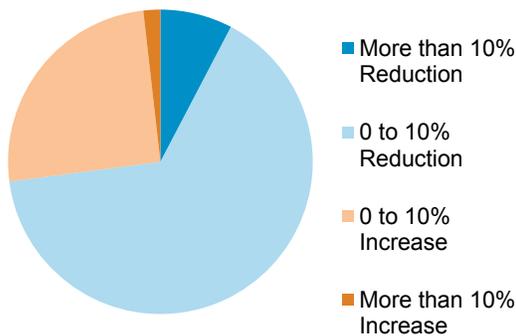
#### What is the ENERGY STAR score?

The ENERGY STAR score is a 1-to-100 assessment of a building's energy efficiency, as compared with similar buildings nationwide. The score adjusts for climate and business activity. Learn more: [www.energystar.gov/benchmark](http://www.energystar.gov/benchmark).

## How do savings levels vary among buildings?

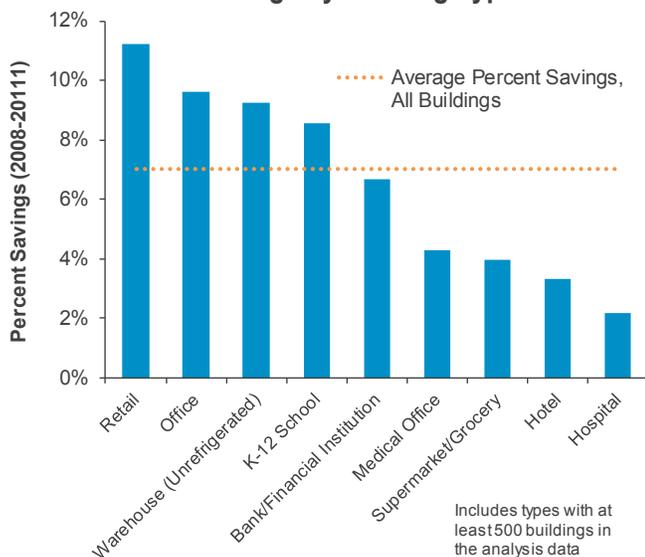
Over 70% of the buildings (25,926) reduced their energy consumption, as shown in blue below. Close to 90% of these experienced average annual reductions in the range of 0 to 10%. A smaller number of buildings experienced average annual reductions greater than 10%, which may be expected with large scale energy efficiency investments. This suggests that slow and steady improvements over time are typical of buildings that consistently track and benchmark energy consumption.

**Average Annual Energy Change (2008-2011)  
in Weather Normalized Source EUI**



Energy savings were experienced by all building types. Among those with above average savings are Retail, Office, and K-12 School, the sectors with the most buildings benchmarking in Portfolio Manager. These buildings represent over 60% of the buildings benchmarking consistently from 2008-2011.

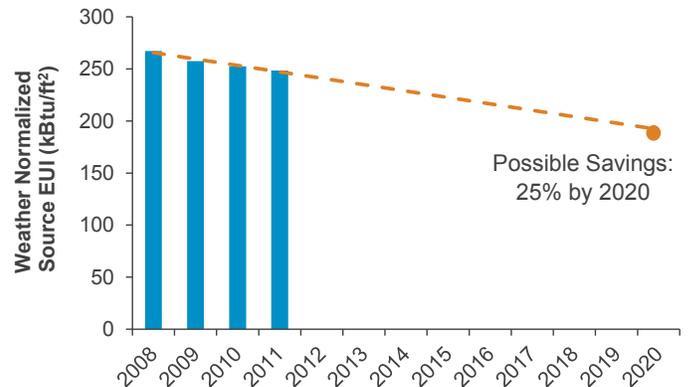
**Savings by Building Type**



**Note:** This analysis represents buildings benchmarking consistently from 2008 through 2011. 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](http://www.energystar.gov/DataTrends).

## What are the potential energy savings over time?

Organizations benchmarking consistently in Portfolio Manager have achieved average energy savings of 2.4% per year, and an average increase in ENERGY STAR score of 2 points per year in their buildings. If all buildings in the U.S. followed a similar trend, over 18 million metric tons of carbon dioxide equivalents could be saved each year. Through 2020, the total savings could be approximately 25%.



## What is the financial value of benchmarking?

The financial value of benchmarking can be expressed in terms that are meaningful to each building sector. A savings of 2.4% for three consecutive years is equivalent to the following:



**For a 500,000 square foot office building:**  
Cumulative energy cost savings of \$120,000  
Increase in asset value of over \$1 million



**For a medium box retailer with 500 stores:**  
Cumulative energy cost savings of \$2.5 million  
Increase in sales of 0.89%



**For a full service hotel chain with 100 properties:**  
Cumulative energy cost savings of \$4.1 million  
Increase in revenue per available room of \$1.41



**For an 800,000 square foot school district:**  
Cumulative energy cost savings of \$140,000  
Salary of 1.2 full time teachers each year