

FACT SHEET

BUILDING ENERGY BENCHMARKING

For further information please contact:

Andrew Burr
andrew@imt.org

More than 9,000 buildings in Virginia and Maryland cumulatively totaling more than 1 billion square feet of commercial and institutional floor space have been benchmarked over the past decade, according to U.S. government data

Managing What You Measure

Energy efficiency starts with benchmarking

The first step to a more energy-efficient building is benchmarking, a process of assessing energy performance relative to a baseline. Benchmarking puts critical information in the hands of building owners and operators, allowing them to measure and track energy performance over time, identify opportunities to improve energy performance, prioritize energy efficiency investments, and evaluate and effectiveness of implemented measures.

Basics of Benchmarking

Benchmarking is a simple process that involves inputting utility bills and property characteristics into a benchmarking tool. To use ENERGY STAR Portfolio Manager, the widely used benchmarking tool for commercial buildings that is administered by the U.S. Environmental Protection Agency (EPA), building owners must enter 12 months of energy consumption and building data including property type, building size and space uses. Portfolio Manager normalizes the data for factors including occupancy, climate zone and operating hours to generate building energy performance metrics such as:

- A “1” to “100” score that compares energy performance to similar buildings type nationwide
- Energy use intensity per square foot
- Greenhouse gas emissions

The nation’s most energy-efficient buildings – those that have a score of 75 or higher – are eligible to receive voluntary recognition by EPA as an ENERGY STAR certified building. Nearly 1,000 buildings in Virginia and Maryland have achieved ENERGY STAR certification since the program launched a decade ago.

A Report on Accelerating Commercial Building Energy Retrofits



A 2012 analysis by EPA found average energy reductions in benchmarked buildings of 7% from 2008 to 2011, with average savings of more than 2% each year

Benchmarking Tools

Because it is free and available online, ENERGY STAR Portfolio Manager is a good starting point for most building owners. A number of benchmarking tools administered by private vendors are available to owners or operators seeking more robust energy performance analyses. Owners may also benefit from having an energy audit conducted, which produces tailored recommendations for improvement following a site visit and an inspection of systems by a licensed professional.

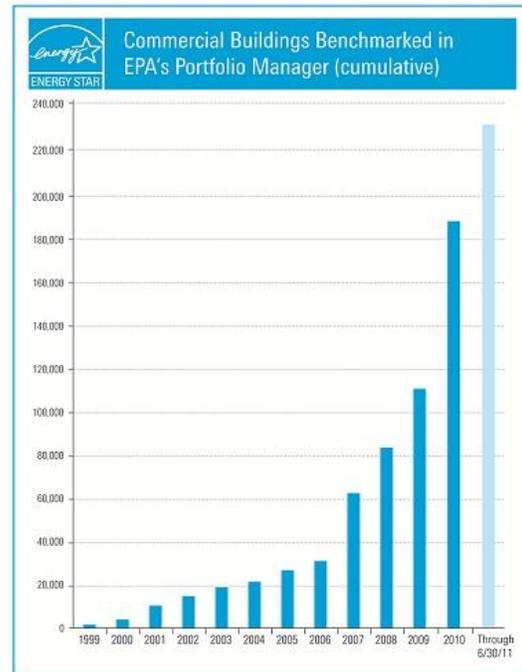
Portfolio Manager is an operational rating, meaning the benchmarking is based upon actual energy consumption and subject to a number of factors, including how much energy tenants use. Operational ratings are useful in determining how to manage and operate a building more efficiently. The U.S. Dept. of Energy is currently developing an asset rating tool, which estimates building performance based on the energy efficiency of the building envelope and base systems. EPA also has an asset rating tool called ENERGY STAR Target Finder. Asset ratings are useful in determining where capital upgrades would be most effective.

Seeing the Benefits

Energy Savings

Building owners who benchmark are putting themselves in a position to manage rising energy costs, reduce operating expenses and increase net operating income. A 2012 analysis by the U.S. EPA of 35,000 benchmarked buildings revealed an average energy reduction in those buildings of 7 percent from 2008 to 2011, with average annual savings of 2.4 percent.

While some of those savings are generated through simple improvements



More than 220,000 buildings have been benchmarked using EPA's ENERGY STAR Portfolio Manager over the past decade.

in building operations, benchmarking has also been shown to increase the likelihood of a building owner seeking energy efficiency incentives and rebates. According to recent research by the California Public Utilities Commission, owners who conducted benchmarking took advantage of utility energy efficiency programs more often than those who did not benchmark.

Market Competitiveness

Even where energy costs are paid by tenants, benchmarking can benefit owners by providing a powerful marketing tool to retain current and attract tenants who want to be in "green" buildings. Recent studies by CB Richard Ellis, Jones Lang LaSalle, CoStar Group and other companies have found higher occupancy levels, and higher lease rates and sales prices, for ENERGY STAR- certified buildings over non-certified buildings. Benchmarking is helping these owners set their properties apart from the pack.

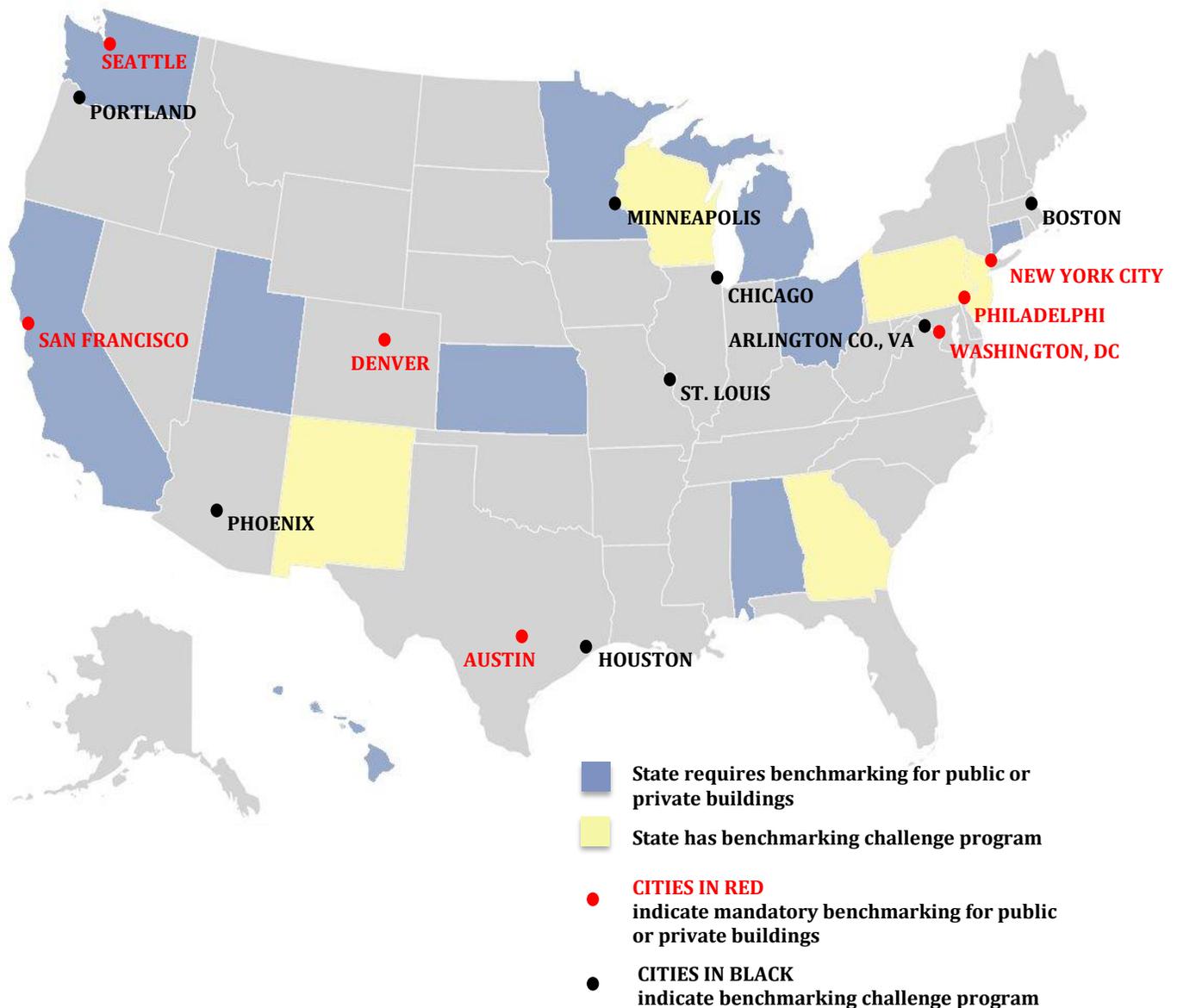
This Guide was prepared by the Institute for Market Transformation with funding provided by the U.S. Department of Energy, DE-EE0005460, "Accelerating Commercial Building Retrofits: Policy, Best Practice Compilation, Pilot Implementation."



National Benchmarking Policies & Programs

Communities in Virginia and Maryland, as well as state agencies, can encourage benchmarking by establishing collaborative benchmarking challenge programs that recognize the efforts of participants. More than 20 high-profile challenge programs exist today in states and cities, and some have produced outstanding results. Recent challenge programs in Houston and Chicago collectively engaged more than 500 buildings and tenants and saved 100 million kilowatt-hours of electricity and hundreds of millions of gallons of water.

Some cities and states are also requiring benchmarking and the disclosure of benchmarking information for privately owned or government buildings. Benchmarking and disclosure can help jurisdictions create demand and competition in the marketplace for energy-efficient buildings that does not require ongoing public subsidies. Eight states and cities have required benchmarking and disclosure for privately owned buildings.



The federal government now considers benchmarking scores in its lease procurement, creating urgency for many MD-VA building owners to benchmark their properties

Benchmarking in VA-MD

With more than commercial 9,000 buildings totaling more than 1 billion square feet benchmarked in Virginia and Maryland over the past decade, local building owners are proving that benchmarking is simply a good business practice.

Helping to drive benchmarking in the VA-MD region is an abundance of leadership from both the public and private sectors.

Local Leadership – Property Owners

Building owners with portfolios in Virginia and Maryland are rapidly integrating benchmarking into standard property operations. Examples include:

- **[Tower Companies](#)**
Based in Rockville, MD, Tower benchmarks its entire portfolio of approximately 5 million square feet of commercial property in the MD-DC market. Using a 2007 baseline, Tower has reduced its portfolio energy consumption by 13% and now boasts an average ENERGY STAR score of 78 across its benchmarked buildings.
- **[First Potomac Realty Trust](#)**
Headquartered in Bethesda, MD, First Potomac owns and operates an office and industrial/flex portfolio of approximately 14 million square feet in Maryland, Virginia and DC. First Potomac began a significant new effort to benchmark its holdings in 2011, and now has an average ENERGY STAR score of 75 for more than 50 benchmarked facilities.

Local Leadership – Government

The federal government now takes ENERGY STAR scores into account for federal leases, creating urgency for buildings owners to benchmark. But local governments are also getting into the act, both by integrating benchmarking into local sustainability programs and by benchmarking their own buildings. Examples include:



HIGH PERFORMERS: Greenbrier Towers I and II (top), a two-building office complex owned by First Potomac Realty Trust in Chesapeake, VA, with ENERGY STAR scores of 88 and 90; and the Tower Companies' Tower Oaks office building (bottom) in Rockville, MD, with an ENERGY STAR score of 92.

Arlington Co., VA: Created the [Arlington Green Games](#) competition and posted public [building energy scorecards](#) for county facilities.

Charlottesville, VA: Created the [Better Business Challenge](#) to promote sustainability, in partnership with the [Local Energy Alliance Program](#) (LEAP).

Loudoun Co., VA: Created the [Loudoun County Green Business Challenge](#).

Montgomery Co., MD: Benchmarked and publicly released energy data for all county facilities in its 2009 [Climate Protection Plan](#).