

# BENCHMARKING TO SAVE ENERGY

Protect Our Environment  
Through Energy Efficiency



ENERGY STAR





## BENCHMARKING FOR SUCCESS

Businesses are reducing their energy costs by 10, 20, and 30 percent through effective energy management practices that involve assessing energy performance, setting energy-savings goals, and regularly evaluating progress. Facility- or building-level energy performance benchmarking is an integral part. It provides the reference points necessary for gauging the effectiveness of energy management practices and management for continuous improvement.

The U.S. Environmental Protection Agency's (EPA) ENERGY STAR® program provides guidance and benchmarking tools to help organizations successfully save energy. These resources enable energy managers to determine the energy efficiency of their operations and make informed management and investment decisions.

Demand for energy performance benchmarking is growing. The number of commercial, institutional, and industrial facilities benchmarked using EPA's tools increased by 50 percent in the past two years. Many of these facilities have earned the ENERGY STAR for their superior performance—with the result that they are using 35 percent less energy than the average, while providing the same or better services.

## WHY BENCHMARK?

Benchmarking informs organizations about how they use energy, where they use it, and what drives their energy use. It is a key step in identifying opportunities to increase profitability by lowering energy and operating costs. For example:

- In commercial real estate, decreasing energy costs by 30 percent is equivalent to increasing net operating income by 4 percent.
- In the healthcare industry, each dollar that a hospital saves in energy costs is comparable to generating new revenues of \$20.
- In the supermarket retail industry, a 10 percent reduction in energy costs is equivalent to increasing sales per square foot by \$70.

Realizing these savings can be catalyzed through benchmarking.

Benchmarking is necessary for effective energy management. Through benchmarking, the key metrics for assessing performance are identified, baselines are established, and goals are set. This process helps to identify the key drivers of energy use and provides an important diagnostic tool for improving performance.

By evaluating trends and variability in energy use, benchmarking can improve management decisions on investments in energy-related projects. Developing a historical perspective on current and past energy use provides a context for those decisions. Benchmarking against the industry provides key insights into the competitive use of energy.

Benchmarking demonstrates the value of an energy program and prospects for additional savings. It enables an organization to understand the opportunities lost by remaining average in energy performance—and the benefits of progressing beyond the average.

Benchmarking energy performance enables the energy manager to identify best practices that can be replicated. It establishes reference points for measuring and rewarding good performance. It identifies high-performing facilities for recognition and prioritizes poor performing facilities for immediate improvement. At certain performance benchmarks—milestones—an organization becomes eligible for recognition from ENERGY STAR.

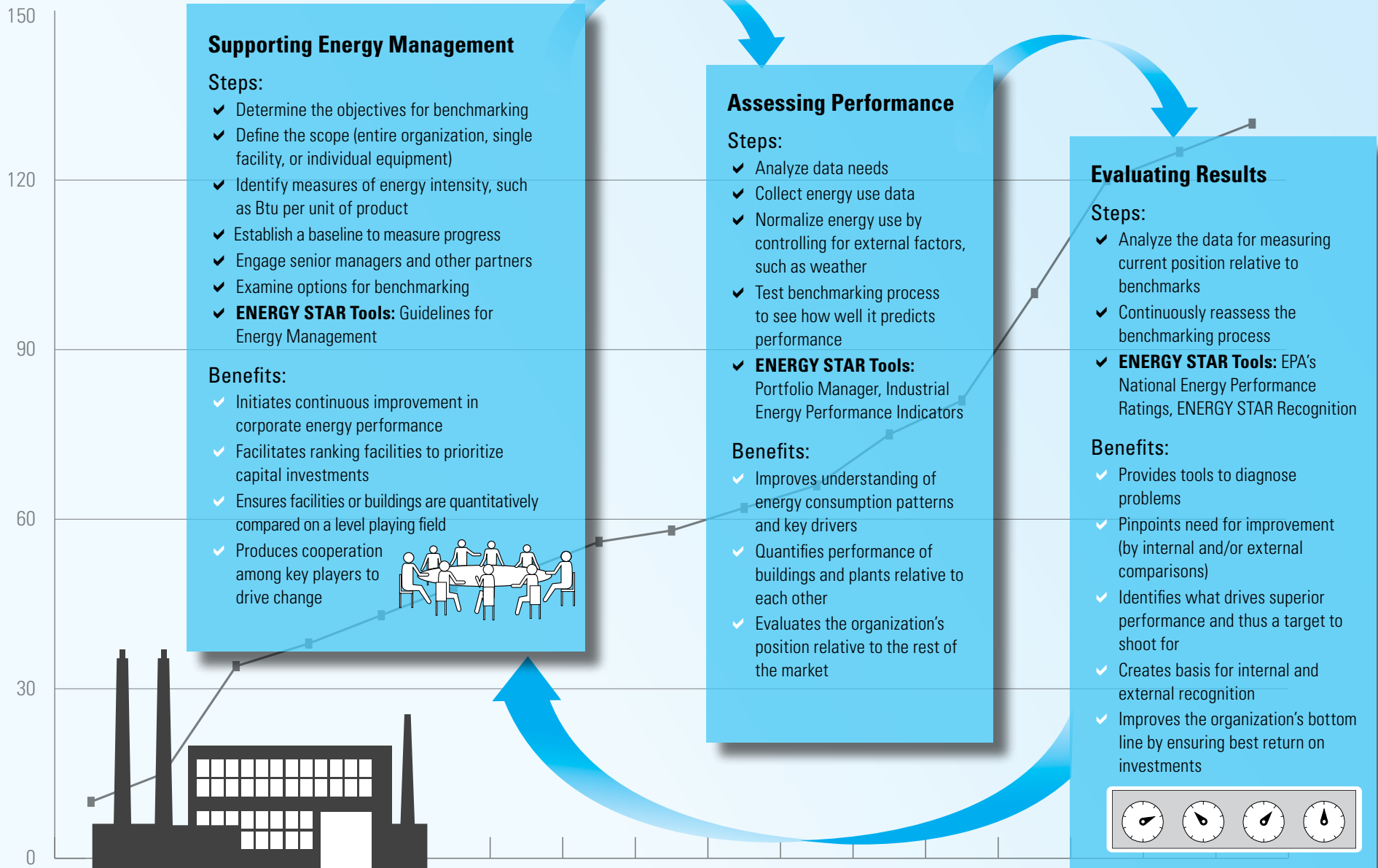
## SUCCESSFUL BENCHMARKING

Successful benchmarking begins with upfront decisions on the goals, scope, and metrics that will support energy management activities and objectives. Determining the options that are available, such as using existing tools, is necessary.

Conducting benchmarking involves uncovering the key drivers of energy use and adjusting or “normalizing” the metrics used to compare energy use. At a facility, for example, the data can be normalized for weather, production levels, or product characteristics that affect energy use. Normalizing data ensures the meaningful comparison and analysis of data and can be done either through simple or sophisticated statistical techniques. Normalizing creates a level playing field that avoids comparing apples and oranges.

Evaluating and acting on benchmarking results is as important as gauging energy performance. Successful benchmarking also requires testing methods and approaches in order to establish a system that can be used to drive continuous improvement.

# KEY STEPS AND BENEFITS OF BENCHMARKING







## BENCHMARKING TOOLS

ENERGY STAR helps energy managers and organizations achieve their energy management goals through a suite of easy-to-use, yet sophisticated, software tools and technical guidance.

**Portfolio Manager** is a free online software tool for tracking energy and water use, and rating the energy performance of selected building types. The tool enables users to:

- Track multiple energy and water meters;
- Benchmark facilities relative to past performance;
- View percent improvement in weather-normalized source energy;
- Monitor energy and water costs;
- Verify building energy performance; and
- Determine energy performance ratings.

For many building types, Portfolio Manager can provide an EPA energy performance rating. EPA's national energy performance ratings are derived from U.S. energy and facility data, and account for the impact of weather variations and key physical and operating characteristics of each building. Ratings are provided on a scale of 1 to 100.

Energy performance ratings are a critical management tool for evaluating how efficiently a building is using energy compared to similar buildings nationwide.

Buildings with superior performance are eligible to earn EPA recognition. The ENERGY STAR label is awarded for facilities achieving the top 25 percent of performance ratings nationally, without compromising comfort or services.

**Energy Performance Indicators** (EPIs) are industry-specific benchmarking tools that enable energy managers and corporate executives to evaluate the energy efficiency of their manufacturing plants relative to similar facilities. EPIs are derived from facility-level production and energy data. The tool normalizes for key factors that drive energy use, including plant

utilization, weather, product mix, and facility and product characteristics. EPIs provide key performance metrics and EPA energy performance ratings on a scale of 1 to 100.

EPIs are a critical management tool for evaluating how efficiently a plant is using energy compared to the entire sector.

Plants with superior performance are eligible to earn EPA recognition. The ENERGY STAR label is awarded for those that achieve the top 25 percent of performance ratings nationally and satisfy specific compliance criteria.

**Benchmarking Guidance** provided by ENERGY STAR helps energy managers develop benchmarks for facilities where EPA does not provide them. EPA's technical guidance helps with planning, developing metrics, normalizing data, and using the results. The guidance is accessed through ENERGY STAR's online *Guidelines for Energy Management*.

Successful benchmarking programs are tailored to the structure and culture of each specific organization. Although a single approach will not address the needs of every organization, all can benefit by implementing a benchmarking process.

## FOR MORE INFORMATION

Participation in ENERGY STAR presents an opportunity for an organization to benchmark itself against peers, reduce costs, improve energy efficiency and environmental performance, and gain recognition for its voluntary energy efficiency accomplishments.

For detailed information on establishing a benchmarking program to achieve world-class performance, see:

ENERGY STAR *Guidelines for Energy Management*-

Benchmarking Section: [www.energystar.gov/index.cfm?c=assess\\_performance.benchmark](http://www.energystar.gov/index.cfm?c=assess_performance.benchmark)

Portfolio Manager: [www.energystar.gov/benchmark](http://www.energystar.gov/benchmark)

Energy Performance Indicators: [www.energystar.gov/epis](http://www.energystar.gov/epis)





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