2. Benchmarking

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2.1 Overview

Businesses are reducing their energy use by 30 percent or more through effective energy management practices that involve assessing energy performance, setting energy savings goals, and regularly evaluating progress. Building-level energy performance benchmarking is an integral part of this effort. It provides the reference points necessary for developing sound energy management practices and strategies and for gauging their effectiveness.

Energy use benchmarking is a process that either compares the energy use of a building or group of buildings with other similar structures or looks at how energy use varies from a baseline. It is a critical step in any building upgrade project, because it informs organizations about how and where they use energy and what factors drive their energy use. Benchmarking enables energy managers to determine the key metrics for assessing performance, to establish baselines, and to set goals for energy performance. It also helps them identify building upgrade opportunities that can increase profitability by lowering energy and operating costs, and it facilitates continuous improvement by providing diagnostic measures to evaluate performance over time.

Benchmarking energy performance helps energy managers to identify best practices that can be replicated, either within a building or across a portfolio of buildings. Benchmarks can be reference points for measuring and rewarding good performance. They allow an organization to identify top-performing facilities for recognition and to prioritize poorly performing facilities for immediate improvement.

The experiences of USAA Real Estate Co., an organization with buildings across the country, illustrate how benchmarking can inform the whole energy management process: Until USAA Real Estate benchmarked its holdings, the company's management believed its portfolio of buildings to be highly energy-efficient. However, initial results indicated that there was room for improvement. The company went on to benchmark 100 percent of its space. That effort, in turn, led to changes in energy management practices and building upgrades that resulted in more than $10 million in energy savings over a five-year period through 2007. USAA Real Estate was named an ENERGY STAR Partner of the Year every year from 2003 through 2007.

Any type of building can benefit from benchmarking. The Marriott hotel chain relied on benchmarking as part of its full-circle approach to observing energy performance and improving energy management systems and procedures. As a result, Marriott's hotels save $4.5 million annually in energy costs. In a totally different environment, energy benchmarking has become a staple of the Seaford (Delaware) School District's Energy Management Program. Building improvements flowed from the critical first step of benchmarking to find and eliminate energy waste within the schools.

Successful Benchmarking

To increase the effectiveness of benchmarking efforts, the U.S. Environmental Protection Agency (EPA) provides guidance and benchmarking tools that simplify the process and help organizations successfully save energy. These resources enable energy managers to determine the energy efficiency of their operations and to make informed management and investment decisions. They also help managers set appropriate goals, determine the data that are needed for a whole-building assessment, and evaluate and measure progress.

Benchmarking starts with a plan that identifies goals, defines the scope of the project, suggests appropriate metrics of performance, and recommends potential partners. As the project proceeds, managers collect data about their facilities, normalize the data, and ensure that the data and any assumptions made are valid. Energy use is influenced by a variety of factors, each of which should be accounted for to provide valid comparisons. At a specific building, for example, the data can be normalized for weather, occupancy levels, or tasks that affect energy use. Normalizing creates a level playing field that avoids an apples-to-oranges type of comparison. Although this sounds like a complicated task, the ENERGY STAR tools make normalizing the data straightforward.

Benchmarking results provide pointers to follow-on efforts to improve energy performance and energy management. Energy managers can use the results to screen their portfolio of facilities regularly to decide where to do on-site energy audits, to identify which sites would provide the greatest return from tune-ups and retrofits, and to remind local managers about energy-efficient behaviors. Benchmarking also enables managers to compare performance to external data. In addition, energy managers can use benchmarking data to motivate action in employee energy-awareness campaigns and to communicate good results to the general public.

Types of Benchmarking

Energy benchmarking can be categorized in two ways: internal or external. Internal benchmarking allows an organization to compare the energy use at a building or group of buildings to that of others in that organization. The results can be used within an organization to compare energy performance among buildings, to identify buildings with the greatest potential for improvement, to track performance over time, to identify best practices at individual sites that can be replicated, and to increase management's understanding of how to analyze and interpret energy data.

In external benchmarking, buildings are compared to other, similar buildings. The results can be used to assess performance relative to peers in the same sector or industry and across other sectors and industries, to compare the energy performance of facilities against a national performance rating, to track performance against industry or sector performance levels, to identify new best practices for improving building performance, to increase understanding of how to analyze and evaluate energy performance, and to identify high-performing buildings for recognition opportunities such as the ENERGY STAR label.

Whether internal or external, benchmarking may be either quantitative or qualitative. In a quantitative benchmarking process, numerical measures of performance are compared. These numbers may be looked at in a historical context (How has the building's performance changed over time?) or in an industrial context (How does the building compare to a peer group of buildings?). In a qualitative process, management and operational practices across a portfolio of buildings are examined to identify best practices or areas for improvement. Many benchmarking projects combine quantitative and qualitative measures.

Food Lion, one of the largest supermarket chains in the United States and an ENERGY STAR Partner, uses both internal and external benchmarking to guide its efforts. Internally, the company uses normalized quarterly reports created by a utility bill-handling service to rank the efficiency of its stores by region. Its energy team distributes these rankings to associates across the chain through individualized Performance Scorecards and Maintenance Scorecards, which detail each store's energy use and provide a summary of quarterly energy and year-to-date capital and refrigeration costs. Food Lion posts the scorecards on bulletin boards and on its intranet; it also sends e-mail notifications to upper management.

Externally, the company compares its stores to similar stores in the country by using the EPA's energy performance rating system (see Section 2.2) to generate ratings for each store. In 2004, Food Lion expanded its use of the rating system for supermarkets by partnering with its outside billing service and the EPA to generate automated monthly ratings. This process, known as *automated benchmarking* (see Section 2.3), makes it easier for companies with large portfolios of buildings to gather and update their energy data. With this system, the energy team can easily view trends on a monthly, quarterly, and yearly basis, both internally and against competitors. Using this automated system has allowed Food Lion to identify energy-wasting problems quickly and see the results of energy-saving initiatives on a much broader scale than in the past.

2.2 Develop a Benchmarking Plan

An effective benchmarking process includes setting goals, defining the scope of the benchmarking effort, identifying the data needed, and engaging partners who will take part in the project.

Set Goals

The EPA's *Guidelines for Energy Management* (www.energystar.gov/guidelines) explains that benchmarking goals should be consistent with and support corporate goals. In fact, initial benchmarking results can be used to help establish new or modify existing corporate goals. The ENERGY STAR guidelines call for evaluating energy use across the organization's major facilities and functions. This information can be used to establish a baseline against which progress can be measured. Energy goals can then be established relative to that baseline to guide decision-making and to form the basis for tracking and measuring progress. Benchmarking is a best practice consistently applied by ENERGY STAR Partner of the Year winners.

Setting a goal for the project will help to determine what type of benchmark will be most useful. For example, if the goal is to improve performance over time, the benchmark might be the baseline energy consumption of a building or portfolio of buildings. Alternatively, a project with an external focus may seek to benchmark a facility relative to a measure of the best in class. Examples of the types of benchmarks commonly used are summarized in **Table 2.1**.

Table 2.1: Common benchmarks

The type of benchmark chosen by a company depends on its goals.This table lists some of the most commonly used benchmarks.

Benchmark type	Description
Best in class	The performance level of the top performer sets the bar when comparing similar buildings.
Performance goal	A specific performance level can be established as a target against which progress can be measured.
Baseline	An initial performance baseline of the building that is established before any commissioning or other measures are taken can be used to track improvements over time.
Above average	Percentages above an average can be used to establish a benchmark.
Commissioned performance level	The performance level of a commissioned building can be used as a benchmark.
National ratings	National performance ratings, such as those established by ENERGY STAR, can be used as performance targets for specific buildings.

Courtesy: E SOURCE

Define the Scope and Identify a Benchmark

Once goals have been set, the scope of the benchmarking effort can be defined in terms of scale, organizational focus, and time frame. The scale of the effort may cover whole buildings, a portfolio of buildings, or the entire organization. The focus may be internal to the company or it may be external, comparing performance to that of competitors or peers. The time frame may be annual, monthly, weekly, or even continuously, depending on the goals.

Based on the defined goals and scope, it is possible to identify a specific benchmark. Companies may find it possible to use established benchmarks, such as the EPA's energy performance ratings, or it may be necessary to develop unique benchmarks.

EPA benchmarks. The EPA provides a set of benchmarks that can be used to assess energy performance for many building types. These benchmarks are developed from a national survey conducted every four years by the U.S. Department of Energy's Energy Information Administration. The Commercial Building Energy Consumption Survey (CBECS) gathers data on building characteristics and energy use from thousands of buildings across the United States. Using those data, the EPA has created a list of energy performance targets that are based on average energy use as calculated across different types of buildings (see www.energystar.gov/ia/business/tools_resources/new_bldg_design/2003_CBECSPerformanceTargetsTable.pdf). These energy performance targets are expressed in terms of energy use intensity; they are not normalized for climate or adjusted for activities that may affect energy use. They can serve as a starting point for a company's benchmarking effort and can be supplemented with other data, as described below, to develop new benchmarks.

Where enough data are available, the EPA has gone further and developed energy performance ratings. The energy performance ratings are developed by applying statistical algorithms to CBECS data and are normalized for weather and important building characteristics such as operating hours, building size, occupancy, and number of computers. Most of the EPA energy performance ratings are based on CBECS data, but due to data limitations, some energy performance ratings are based on other data sets. For more information on the reference data used for each model, please refer to the technical descriptions for each building type (www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager_model_tech_desc).

The EPA currently maintains performance ratings for all major commercial building types, including banks and financial institutions, courthouses, hospitals (acute care and children's), hotels and motels, K–12 schools, medical offices, offices, residence halls and dormitories, retail stores, supermarkets, warehouses (refrigerated and nonrefrigerated), and wastewater treatment plants. The benchmarks and ratings are made available through a free online tool, Portfolio Manager (https://www.energystar.gov/istar/pmpam/), which allows users to set up private accounts to track building portfolios, set baselines, share information, and document the results of their efforts to improve energy performance.

It is important to reiterate that the energy performance ratings are based on the national CBECS survey; they are not developed based on the other buildings that people have entered into Portfolio Manager. The energy bill data and the operating characteristics that have been entered into the tool are used to compare the user's building with other buildings within CBECS. The energy performance ratings account for key factors that impact energy use but that are not the result of inefficiency, such as climate, occupancy level, and hours of operation.

Ultimately, the energy performance rating is expressed on a scale of 1 to 100, which denotes the percentile of performance relative to the other buildings in the national CBECS data set. A rating of 75 means a particular building outperforms approximately 75 percent of its

peers; these buildings are in the top quartile for their building type and are eligible to earn an ENERGY STAR label. In general, buildings with lower ratings have a greater opportunity to improve their energy performance levels.

In addition, the EPA provides ratings known as Energy Performance Indicators (EPIs) for certain manufacturing plants. These indicators are not located within Portfolio Manager, but are available as specific Excel-based spreadsheet tools. These are industry-specific tools that enable energy managers and corporate executives to evaluate the energy efficiency of their plants relative to similar facilities (www.energystar.gov/index.cfm?c=in_focus.bus_industries_focus). EPIs are derived from facility-level production and energy data. They normalize for key factors that drive energy use, including plant utilization, weather, product mix, and facility and product characteristics.

Common industry benchmarks. In addition to the ENERGY STAR ratings, there are other industry benchmarks that can facilitate energy management. These include benchmarking methodologies established by industry trade organizations, as well as national data sets (see sidebar).

Develop new benchmarks. If there is neither an EPA benchmark nor a commonly accepted industry benchmark for a specific building type, the EPA provides technical guidance to help energy managers develop their own benchmarks. The ENERGY STAR *Guidelines for Energy Management* helps managers plan their efforts, develop metrics, normalize data, and use the results. Successful benchmarking programs are tailored to the structure and culture of each specific organization.

RESOURCES: Industry Benchmarking Tools

A number of tools are available to help companies with their benchmarking programs in addition to those available from the ENERGY STAR Program. These include:

Healthcare Energy Guidebook. The American Society for Healthcare Engineering collaborated with the ENERGY STAR Program in the Healthcare Energy Project (HEP) to produce the *Healthcare Energy Guidebook*. The guidebook profiles the U.S. healthcare market on size- and energy-related characteristics and provides energy benchmarking data that can be used to make meaningful comparisons among healthcare facilities (www.ashe.org/ashe/facilities/e2c/resources.html).

The Exchange Report. This annual report and CD from the Building Owners and Managers Association provides data for office buildings on building type, occupancy, and operating expenditures, including energy.

Benchmarking services. There are also many software products and consulting services available to help benchmark multiple facilities. For example, the consulting firm Jackson Associates maintains the Market Analysis and Information System (www.maisy.com), which includes a state-level database. This system has building energy use, building structure, and end-use equipment data.

Automated benchmarking tools that help in the data-collection process are described in Section 2.3.

In these unique programs, the benchmarking plan should include a larger data-collection effort to capture information on potentially important factors. These data can be analyzed to develop the most appropriate benchmark. Often it is instructive to begin with simple energy-intensity benchmarks. Energy-intensity metrics (**Table 2.2**) normalize energy consumption relative to a single, primary measure of business or operation. These metrics are most useful when expressed in terms commonly used by an organization. For example, number of employees may be a good indicator of energy use for an office building, but it could be a poor one for a data center.

In some cases, it may be necessary to develop a benchmark that adjusts for multiple factors. Multi-factor normalization can be accomplished through statistical techniques such as regression analysis. Various factors can be analyzed to determine their correlation with energy consumption, and statistical models can be made to adjust for multiple factors at once. This type of analysis will require consultation with statisticians or engineers who are familiar with the energy characteristics of the buildings under evaluation.

Develop Data Requirements

The specific benchmarking metrics selected will determine the data-collection requirements. For example, to receive an energy performance rating for a building through Portfolio Manager, it is necessary to collect data on specific building characteristics, which are used to normalize energy use and compute the rating. Based on the scope of the benchmarking analysis, managers can identify required data elements and the sources for those data. In some cases, much of the data may already be tracked, such as energy purchases, hours of operation, or production outputs. Other data may require more investigation and new measurements may need to be made. There are several common types of data used for benchmarking.

Energy use. The quantities of electricity, natural gas, steam, chilled water, and other delivered energy sources may be gathered at the corporate, campus, building, process, or equipment level. These data may come from accounting systems or bill-handling services. Depending on the types of energy used, more-detailed consumption data may be available from process or equipment submeters (see sidebar). All energy sources must be accounted for.

Table 2.2: Common energy-intensity metrics

Energy-intensity metrics can be used to compare performance across multiple buildings, but the metric to use depends on the benchmarking goals and the type of building being measured.

Metric	Application
Btu per square foot	Any building
Btu per employee	Office building
Btu per unit of product	Assembly plant
Btu per pound of product	Manufacturer
Btu per pound of product processed	Refinery
Btu per number of beds occupied	Hotel or hospital
Kilowatt-hours per square foot	Lighting
Kilowatts per ton	Chilled water efficiency
Watts per cubic foot of airflow per minute	HVAC systems

Courtesy: E SOURCE

Energy cost information. The purchase cost of electricity, fuels, steam, compressed air, chilled water, and other energy sources is usually available from accounting systems or bill-handling services.

Physical and design attributes. Key building characteristics, such as floor area, equipment used, plug loads, special activities, and space types can be found from a variety of sources, including building records that are available from the facility manager or office of the physical plant. Dynamic organizations that often change equipment or alter space configurations and uses may have to take manual floor-area measurements and counts of various types of equipment (including boilers, motors, lighting fixtures, HVAC units, and plug loads).

Output or utilization data. Data that offer insights into the utilization of space, including labor hours, occupancy levels, operating hours, and number of shifts, can assist in revealing energy-use patterns. Labor data is typically collected for Occupational Safety and Health Administration (OSHA) reports, so it may already be available from the health and safety department.

Production data. Data that captures differences in product characteristics or production inputs or processes can usually be found in production records, including inventory data, invoices for all inputs in the supply chain, and shipping records for intermediate and final goods produced. Quantities may be expressed in the number of units produced or some measure of weight or volume.

Financial data. These data can include revenue and sales data, value of shipments, and value added, things that are usually tracked for accounting purposes.

Climate variables. Variables such as heating and cooling degree-days, altitude, and barometric pressure data are available from local weather stations or may be tracked on site.

Economic variables. Various economic metrics, such as the implicit price deflator for gross domestic product, are often used to adjust sales data for inflation and are available from the federal government.

BEST PRACTICES: Submetering Helps Food Lion Find Energy Drains

Food Lion, one of the largest supermarket chains in the United States with more than 1,220 stores in 11 Southeastern and Mid-Atlantic states, uses a special submetering system to monitor and analyze 17 different loads for each of its stores that have submetering in place. The meters track energy consumption in such areas as HVAC, lighting, deli, and refrigeration. Without submetering, a quick look at Food Lion's utility bill could flag a problem store, but further investigation would be required to pinpoint the problem. With submetering, Food Lion can quickly tell, for example, the specific area of the store that was involved in an energy spike. The company's maintenance crews can then immediately correct the problems and, using the submetering system, know within 15 minutes whether the entire problem has been corrected.

Engage Partners

A successful benchmarking study often requires the help of other parties, who should be identified and engaged at the beginning of the process. Primary candidates for participation include departments or organizations that own the data that are needed for the benchmarking effort. For external benchmarking, look for partners in the same industry or sector. An effective partnership requires that the partners understand the objectives, expected outcomes, and schedule of the project, and know their role and the costs and benefits of their participation.

For internal benchmarking projects, some participants may feel threatened by a focus on energy consumption and operations, fearing results that may reflect poorly on them. Therefore it is important to be open and clear about the purpose of the project. Focusing on the contribution that benchmarking makes to competitiveness and profitability objectives can be helpful. USAA Real Estate displays its Strategic Energy Management plan and corporate commitment on its intranet site. Expanded access to such documents and to ENERGY STAR information helps raise awareness of the impact that energy efficiency can have on an organization's performance and its positive contribution to the community in the form of environmental benefits.

2.3 Implement the Benchmarking Plan

Once a plan has been developed, the benchmarking team will collect data, evaluate benchmark metrics, and apply the results. There are many tools available to aid in this process. Results can also be achieved using homemade spreadsheets for quick comparisons to national or regional data.

Collect Data

The success of a data-collection effort will depend on the ability of participants to share data in a common platform. Portfolio Manager (https://www.energystar.gov/istar/pmpam/) is one widely used online tool for tracking energy consumption. It enables users to track multiple energy and water meters, benchmark facilities relative to past performance, view percent improvement in normalized source energy, monitor energy and water costs, verify building energy performance, and determine energy performance ratings.

The software requires that the user specify the type of building, its operating characteristics (such as floor area and hours of operation), and its actual energy-bill data. To get started, there must be at least 11 full consecutive calendar months of energy data available for all active meters at the site. The billing data are updated as new bills come in. The data may be entered manually, and automated benchmarking tools are available to simplify the data-collection process for companies with large portfolios of buildings to manage (see sidebar).

A variety of other tools are also available. For a quick check to prioritize further in-depth analysis, some companies build their own spreadsheets and then compare results to regional or national averages, such as those provided through the ENERGY STAR Program. For more accurate results, free benchmarking software is available online and software that analyzes billing or meter data is available for purchase (see Industry Benchmarking Tools sidebar).

Evaluate Benchmarks and Apply the Results

Once data have been collected, the specific benchmarks can be computed for the building or across a set of buildings under investigation. Benchmarking results can be put to use in a variety of ways.

Rank facilities. The first step is to use the data gathered to compare or rank the buildings. Buildings may be ranked according to the benchmark to identify the top performers and prioritize investment opportunities.

Set goals. It is possible to set new goals based on the initial benchmarking results. For example, a goal may be set to bring buildings that are performing below average up to the average performance. Another goal might be to pursue a 10 percent energy improvement across the board. Goals may be established at the building or organizational level; the exact goal will depend on the objectives of the benchmarking project that were identified at the outset. The actual benchmarking data will transform these broader objectives into quantifiable goals.

Based on benchmarking results, USAA Real Estate managers create an ENERGY STAR Energy Performance Plan for each building in their portfolios. The plan describes an overview of the property, establishes a baseline of energy management performance and achievements, and sets goals for the following year. Specifying portfolio-wide and building-wide energy management goals has resulted in an increased average energy performance and significant annual energy cost savings. Similarly, Marriott collects information at each of its properties and, at the end of each quarter, the property's general manager and energy conservation committee meet to review audit forms and inspection reports that have been filed over the previous three months. This review is the foundation for setting goals for the next quarter.

Identify and share best practices. Top-performing buildings can be examined to identify successful management and operational practices. These procedures can be extended and applied to improve lower-performing facilities.

RESOURCES: Automated Benchmarking

The EPA has partnered with companies that offer invoice and energy management services in which the companies host the EPA's energy performance rating system within their web-based products. For organizations with large portfolios of buildings, obtaining and managing the data necessary to benchmark can be difficult. Invoice and energy management service vendors typically already collect most of the data required to benchmark buildings in the EPA's energy performance rating system. Integrating the ENERGY STAR rating with existing services gives customers the convenience of receiving ratings within the same energy information environment that they use for planning, tracking, and managing energy use and costs. Advantage IQ, Cadence Network, Energard, Johnson Controls, EnergySolve, ei3, UtilityAccounts.com, and Poco Energy have all partnered with ENERGY STAR to offer the automated benchmarking service.

The Gresham-Barlow school district in Gresham, Oregon, used automated benchmarking services to help reduce its energy use by 46 percent over a seven-year period. The school district, which has been named an ENERGY STAR Partner of the Year several times and has been recognized as an ENERGY STAR Leader for improvements across its portfolio of facilities, has earned the ENERGY STAR label for most of its individual schools with the help of software that automates the transfer of its utility data to the EPA's rating system. The software also helped the district identify billing errors and consumption anomalies, track real-time energy use, identify trends, make accurate projections, and create sophisticated forecasts, budgets, and customized reports.

Take action. Energy managers can use benchmarking data to screen their portfolio of facilities. The information will help them decide where to do on-site audits, identify which sites would get the best return from tune-ups and retrofits, or even just know when to remind local managers about energy-efficient behaviors. With this data, they can also calculate what is needed to meet an internal or external goal across the organization.

Track progress. Based on the scope of the project, benchmarking can be repeated over time to assess progress relative to the defined goals and to encourage continuous improvement. It is important to track progress and compare actual energy consumption data with stated goals. This comparison will show whether or not goals have been achieved and how much money energy savings have contributed to the organization's bottom line. The comparison will also help to identify the organization's best practices and will inform decisions about how to achieve future goals. Setting new goals on a regular basis will help foster an environment of continuous improvement.

Recognize achievements. Data from the benchmarking project can be used to award internal recognition and to seek external recognition opportunities. Formal recognition encourages further efforts and builds support for an organization's energy management plan. For example, internal recognition may be structured to recognize the energy manager who has achieved the greatest reductions across his or her facilities over the past quarter. Retailer JC Penney developed an energy contest to encourage its employees to reduce energy use in each store. To make energy efficiency fun and rewarding, the company designated a volunteer "energy captain" for each store. The captains give employees incentives and ideas for reducing energy use along with the latest data about the energy use in their store, and it has led to significant savings: The program saved more than $500,000 in the first month and has since been expanded from a single event to an ongoing incentive.

The EPA provides a variety of opportunities for external recognition. Individual buildings that perform in the top quartile are eligible for the ENERGY STAR label (www.energystar.gov/index.cfm?c=business.bus_bldgs). Organizations that partner with ENERGY STAR and achieve a 10 percent energy reduction across their portfolio can earn recognition as ENERGY STAR Leaders (www.energystar.gov/index.cfm?c=leaders.bus_leaders). In addition, ENERGY STAR Partners may apply to be recognized as an ENERGY STAR Partner of the Year based on their accomplishments across an entire organization (www.energystar.gov/index.cfm?c=pt_awards.pt_es_awards).

External opportunities for recognition are also available through a variety of associations. For example, the American Society of Healthcare Engineering (ASHE) has developed an E2C campaign that offers free Professional Engineer verification for hospitals that qualify for the ENERGY STAR label. Additionally, the Building Owners and Managers Association (BOMA) and its local chapters, such as BOMA Austin and BOMA Seattle–King County, have developed contests and offered incentives to challenge the commercial real estate industry to pursue energy efficiency. Participants in these campaigns receive a variety of benefits, including free advertisements and recognition, energy engineering certification, and private reports detailing the energy performance of their buildings.

2.4 Summary

Benchmarking serves to inform organizations about how they use energy, where they use it, and what factors drive its use. It helps companies identify the key metrics for assessing performance, establish baselines, and set goals for energy performance. Benchmarking, which may be internal, external, or a combination of the two, helps companies identify and prioritize building upgrade opportunities that will lower energy and operating costs, and it provides a means for tracking and improving performance over time. The benchmarking process requires managers to:

- Define goals
- Set the scope of the project
- Identify data requirements
- Engage partners who will participate in the project

Once the benchmarking data has been gathered and processed, it can be used, first to rank buildings and then to:

- Identify buildings with subpar performance
- Define best practices
- Compare current performance to goals
- Recognize achievements

To get started, visit the Portfolio Manager web site (https://www.energystar.gov/benchmark) to make use of the ENERGY STAR Program's various tools and links.

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