

Benchmarking Initiatives in New Jersey

Author:

*Laurie Wiegand-Jackson
President Utility Advantage, LLC*

Date:

September 2022

Benchmarking Initiatives in New Jersey

OVERVIEW

Benchmarking and disclosure initiatives are rising up in states across the USA – including federal, state and local programs and mandates. The foundational principles and the benefits of benchmarking are proven. New Jersey recently approved the first phase of its Benchmarking program for larger commercial buildings across the state. Understanding the purpose and requirements of this new program will help ensure compliance.

Benchmarking is one strategy to improve the energy efficiency and operations at facilities by tracking the building's energy usage intensity (EUI) over time. It can also be used to compare other similar facilities in a portfolio. Properties are rated and ranked. The resulting benchmark report provides important information to justify energy audits and the investment in energy efficiency measures. It also can verify the impact of these investments.

The U.S. EPA established ENERGY STAR Portfolio Manager ratings for facilities in a national benchmarking program. Among the benefits, these programs have resulted in reductions in EUI and increased spending on energy efficiency improvements.

Understanding Benchmarking Metrics

Benchmarking for commercial buildings are mainly based on a building's Energy Use Intensity. Energy Use Intensity (EUI) measures a building's energy use as a function of its size or other characteristics. EUI is a key indicator of the energy efficiency of a building's design and operations. For most buildings, EUI is expressed as energy per square foot per year. The EUI may be weather-normalized to account for the impact on consumption of weather variances over time. Typical average EUI's will vary based on the type and use of the facility. Once an EUI rating is established for a facility, the question remains - how efficient is this facility in its present condition and how does that compare to other similar facilities. To answer this question, one must analyze and compare to other facilities, statistical averages or to the facility itself over time. Benchmarking is the means by which one compares facilities to (1) a peer group (2) the facility's own historical performance or (3) a building code or other reference point.

Benchmarking strategies allow facility managers and energy engineers to rate their facilities and determine if the facility is below average, average or above average. This approach can then be used to set targets for improvements. Government mandates are increasingly including a benchmarking component to require building owners and operators to assess and rate their buildings. In some cases, these same programs are establishing a target rating with time limits to achieve the mandated levels. These benchmarking programs are designed to meet the overall objective to improve the efficiency and operations of America's building stock thereby reducing waste and reducing greenhouse gas emissions which is tied to climate action plans across the USA.

Types of Benchmarking Programs

Benchmarking programs can be divided into two types: those that are defined and developed internally to compare facilities within an organization and those that are defined, developed and managed externally through a third party organization. Benchmarking programs can be a voluntary effort or part of a mandated benchmarking initiative. The benchmarking program may be "project-based" as a one-time analysis or as an on-going continuous benchmarking program that occurs with analysis repeated over time to identify trends related to the building's performance.

Organizations that operate a large number of facilities, such as in the retail, banking, commercial real estate, and hospitality sectors, are good candidates for an internally developed benchmarking program. This type of program incorporates analysis of energy use and demand, building characteristics, operating

data and supply characteristics to produce reports of energy usage intensity (EUI) and GHG emissions by facility to easily identify the best and worst in the portfolio. Investigation into those sites that are operating above average can provide insights into the characteristics, best practices and strategies that may then be deployed across the portfolio to improve the ratings. Implementation of this type of benchmarking program is facilitated with the use of available best-in-class data management and reporting systems. These platforms, including Utility Advantage's Energy Intelligence Suite, gather data from utility invoices, and data provided by the organization such as building data (type, location, square ft, age) and operations (hours of operation, units of production, occupancy) as well as energy supply contract data. This information is converted into easy to use graphs, tables, ratings and reports to identify outliers and poorly performing facilities for targeted analysis and improvement.

An alternative to internal benchmarking initiatives, third party developed and managed benchmarking programs not only provide an overall rating based on a transparent, consistent and independent analysis and rating system but they identify how facilities compare across various organizations within a sector. This external comparison provides the added benefit of identifying how facilities stack up to peers (which can be compelling) and how "competitive" facilities are within an industry sector. The independent oversight lends itself to use by government entities in policy-based benchmarking programs.

One well-known and widely adopted third party benchmarking program is the ENERGY STAR Portfolio Manager program. The program provides a rating of 1 to 100 for each facility and a report that identifies how the facility rating compares to a national median rating within its sector. At a rating of 75 or above the building is eligible for ENERGY STAR certification. This program was launched in 1999 for offices and it has expanded over time to include bank branches, barracks, courthouses, data centers, distribution centers, financial offices, hospitals, hotels, K-12 schools, office buildings, medical offices, multifamily housing, residence hall/dormitory, retail stores, senior care communities, supermarkets, warehouses, wastewater treatment plants, wholesale clubs/supercenters, and worship facilities. ENERGY STAR provides an Energy Use Intensity (EUI) that is weather normalized and allows view of trends over time. The Portfolio Manager tool tracks at least 12 to 36 months of consumption (energy, water and waste). In addition to completing an initial "snapshot" analysis in Portfolio Manager, the data can be updated monthly, quarterly or annually to track progress over time compared to the initial baseline. Most recently, ENERGY STAR added a Tenant Space Recognition for Commercial Offices. This recognition program includes ENERGY STAR Tenant Space Decal, Certificate, Congratulatory Letter, and listing in ENERGY STAR's Tenant Space recognition directory on the ENERGY STAR website.

Benefits of benchmarking and automated data platforms: The benchmarking of facilities provides visibility into the efficiency of each building's design and operations. It provides transparency into the energy efficiency of a portfolio of buildings. This information can be used by facility managers and the finance team to effectively communicate the need for operational improvements to others in the organization using data-based best practices. Buildings with a Portfolio Manager rating of 75 or greater may be "certified" and may use the nationally recognized ENERGY STAR label.

Using the benchmarking comparisons to other facilities in a portfolio or to a national median provides justification for investments in energy efficiency upgrades. Ultimately, benchmarking programs lead to energy savings and reduced greenhouse gas emissions. They can drive increased real estate valuation and a more competitive market position. Efficient buildings are also more profitable and more valuable at resale.

Data that is captured through an automated reporting process is considered more reliable than manual data collection processes for benchmarking facilities. Benchmarking performance with manual systems results in less confidence in the data's accuracy. Frequency of receiving data, given the effort required to retrieve

it, is also lower with manual data gathering. Utility Advantage offers the “Energy Intelligence Suite” for automated capture and reporting of utility data with benchmarking reports to assess facility performance over time and to compare facilities within a portfolio of buildings. Our system is linked to the EnergyStar Portfolio Manager platform to efficiently upload utility data and download ratings back into our platform to support the creation of required benchmarking reports.

New Jersey’s Government Mandated Benchmarking and Disclosure Programs: Across the U.S.A., several cities and a few states are implementing policies that establish benchmarking and disclosure programs for public, commercial and in some cases multifamily buildings in their jurisdictions. Building owners may be required to track and disclose their energy use information and building characteristics using either the U.S. Environmental Protection Agency’s (EPA) free online benchmarking tool Portfolio Manager to obtain an ENERGY STAR rating or similar rating programs. These benchmarking and disclosure programs have led some policy-makers to further enact requirements to achieve specific performance targets and some have even incorporated penalties for non-compliance.

In 2018, the State of New Jersey adopted Law A3723, which sets a statewide benchmarking requirement for commercial buildings 25,000 square feet and larger. The NJ Board of Public Utilities (NJBPU) has until May 2023 to implement the benchmarking program. In September 2022, the NJ BPU approved the Energy & Water Benchmarking Program order requiring the owner or operator of every commercial building over 25,000 square feet in the state to benchmark energy and water use using the U.S. Environmental Protection Agency’s Portfolio Manager tool. The first benchmarking submissions are due on October 1, 2023 for energy and water consumed in 2022.

Conclusions: The benchmarking program is a foundational element of an energy management plan that improves awareness of building energy performance and leads to the implementation of other energy efficiency upgrades and energy conservation strategies. Benchmarking programs provide transparency of key information relevant to a building or portfolio of buildings’ energy use and efficiency. With commercial buildings alone comprising approximately forty percent of all energy consumed in the US annually, benchmarking initiatives can have a significant impact in reducing energy consumption and greenhouse gas emissions. New Jersey’s new Benchmarking Program requires building owner and operators to submit benchmarking of energy and water use based on 2022 consumption no later than October 1, 2023.

For more information about Utility Advantage’s benchmarking services, contact Craig DeLuca at 609-364-8999 cdeluca@utilityadvantage.com or Laurie Wiegand-Jackson at lwiegand@utilityadvantage.com

Biographical Sketch:

Laurie Wiegand-Jackson, President, Utility Advantage and Chair of the CWEEL Board

Laurie Wiegand-Jackson is a successful entrepreneur and businesswoman. She currently serves as President & Founder of Utility Advantage, a NJ based national provider of energy consulting services company founded in 2003. With over thirty five years of national experience in utilities, energy supply, data analytics, benchmarking, energy efficiency, renewable energy and integrated distributed energy resources, Ms. Wiegand-Jackson provides her knowledge and experience to benefit her clients.

Ms. Wiegand-Jackson served as President of the Association of Energy Engineers (AEE) in 2007 she was inducted into the AEE Energy Managers Hall of Fame in 2016.