Benchmarking Policy Guide

What is Building Energy Benchmarking?

Building energy benchmarking is the process of measuring the energy performance of buildings, aggregating this data, and then comparing performance to similar buildings, exemplary buildings, the building at a previous point in time, or state and local energy codes.

Benefits of benchmarking for building owners include:

- Understanding and managing their building's energy usage
- Analyzing potential energy efficiency upgrades that can save energy and money
- Measuring energy improvement projects (before and after) to verify savings
- Publicly signaling their commitment to green initiatives

Benefits of benchmarking for municipalities include:

- Understanding energy usage in the area, including identifying which building sectors require the most energy efficiency improvement
- Providing information for energy reduction goals and tracking progress towards those goals
- Creating building construction and energy service jobs within the local community
- Engaging directly with building owners to create trust for future energy initiatives

A benchmarking policy begins with understanding and establishing goals.

Policy Consideration: Data Aggregation

Building owners need access to data but are often prohibited from accessing energy information for tenant-occupied spaces, where tenants are utility customers on record. It is also important to uphold the privacy of individual tenants, and data aggregation addresses both of these concerns. Using aggregated energy usage information not only protects the confidentiality of individuals, it also streamlines the process by making individual tenant authorization unnecessary.

A building aggregation policy aims to find a threshold that will incorporate the greatest number of buildings without putting the privacy of tenants at risk. Thresholds can be a number of units (commonly between two and five units) or an energy consumption percentage per unit (commonly that no single meter should account for more than 50 percent of the building's usage). Lower thresholds allow for more buildings to be included in a benchmarking policy, but depending on the local buildings and grid, policy goals, and local needs, a low threshold is not the right choice for every municipality.

Policy Consideration: Which Buildings to Include and When

If there is no benchmarking policy currently in place, legislation or city ordinance should start with public buildings to lead by example and expand from there to include private buildings. Benchmarking policies utilize square footage thresholds to determine which buildings must comply. In order to ensure

continuous and long-term improvement, the square footage threshold should become more stringent over time in order to encompass more buildings.

These types of phase-in approaches vary in their timeframes, but often have two to three phases, with each phase occurring in its own year. The exemplars below provide examples of specific timelines. Generally, the ultimate goal is to get public building thresholds down to 10,000 square feet as soon as possible, and have private buildings follow until they align. In some cases, a jurisdiction may decide to set the final threshold for private buildings at 15,000-20,000 square feet. The objective is to get the lowest possible threshold that meets the jurisdiction's goals and is realistic for program management and compliance. It is important to balance this by listening to and working with building owners.

Policy Consideration: Metric Collection

It is important to consider what metrics will be collected and how will they be collected. In order to create a proper data set, the output metrics must be identical for all buildings. There are many tools available for reporting; the most commonly used is the ENERGY STAR Portfolio Manager, a no-cost software that allows users to manage and track energy and water use across portfolios of buildings. The suggested set of metrics are metrics that Portfolio Manager collects. These include:

- Total gas and electricity use
- Gross floor area
- Primary use type
- Greenhouse gas (GHG) emissions
- Site and source energy use intensity (EUI)
- Water usage

Policy Consideration: Reporting Compliance and Addressing Non-Compliance

A policy should specify who is responsible for reporting relevant usage data. Usually, it is either a building owner responsible for disclosing the entire building's energy data or the owner of a meter's utility bills. With data aggregation, utilities are responsible for providing aggregated building-level data to building owners, making individual usage information an unidentifiable part of a larger data set. Tenant information remains private, so individual authorization is both unnecessary and would create a barrier to effective benchmarking.

It is in the best interest of both municipalities and building owners to avoid non-compliance, and jurisdictions can provide resources (such as technical assistance) and training to building owners to help with compliance. In the case of non-compliance, common penalties include fines, public disclosure of non-compliance, and written warnings. Fines can be per quarter or per day, and some municipalities set annual fine limits.

Steps to Enacting a Benchmarking Policy

- **Engaging with stakeholders.** In order to be successful, benchmarking policies need support from local property owners, government officials, real estate developers, and utilities, among others. Transparency with these stakeholders is extremely important in order to craft an appropriate policy *that will be passed* by legislation or local ordinance. Lack of awareness, limited economic and staffing resources, geographic distance from resources, and low commitment due to not understanding ease and benefits can serve as barriers, especially in [small, medium, and rural communities.](#) These can be overcome with the help of outreach and partnership with local communities.
- **Passing legislation.** Policies often take many iterations for all stakeholders to agree. Be patient and persistent.
- **Training and providing information.** Resources such as "How-to-Comply" guides, Portfolio Manager training, and best practices for owners and operators are great ways to ensure proper compliance. In some cases, trainings can be accomplished as easy as contacting a local EPA office and requesting the program.
- **Reporting out.** At the end of each year, results from benchmarking efforts should be reported out and can be distributed to the public. This creates greater understanding, transparency, and public accountability.

Benchmarking Exemplars

City	New York, NY	District of Columbia	South Portland, ME
Ordinance	[Local Law 84](#)	[Clean and Affordable Energy Act (Title V)](#)	[Zoning Ordinance](#)
Enacted	2009	2008	2017
Initial Building Thresholds	Municipal: 10,000ft^2+ starting in 2010 Commercial/ Multifamily: 50,000 ft^2+ starting in 2011	Municipal: 10,000ft^2+ starting in 2009 Commercial/Multifamily: 200,000ft^2+ starting in 2010, 150,000ft^2+ starting in 2011, 100,000 ft^2+ starting in 2012	Municipal: 5,000ft^2+ Commercial: 5, 000ft^2+ Multifamily: 10+ units (same initial and final thresholds)
Final Building Thresholds	Municipal: 10,000ft^2+ Commercial/ Multifamily: 25,000 ft^2+ [starting in 2016](#)	Municipal: 10,000ft^2+ Commercial/ Multifamily: 50,000 ft^2+ starting in 2013	Municipal: 5,000ft^2+ Commercial: 5, 000ft^2+ Multifamily: 10+ units
Non-Compliance Penalty	$500 per quarter ($2,000 annual limit)	For buildings that do not meet the standard, DOEE provides alternative pathways to achieve reductions.	Non-compliance is unlawful and any delay in submitting a report greater than 30 days shall be deemed a violation.
Data	[2018 Report](#)	[2012-2018 Data](#)	[2018 Report](#)

| Notable Elements | An aggressive square footage threshold: the original law applied to buildings larger than 50,000 ft^2, but was reduced to 25,000 ft^2 by LL133 of 2016, encompassing significantly more buildings. The Greener, Greater Buildings Plan (GGBP) also includes Local Law 87, which requires energy audits and retro-commissioning every 10 years. | Established standards for every three years (from 2020-2026) which incorporate more buildings each cycle. DOEE will conduct assessments every five years, and buildings must comply with no less than the median ENERGY STAR score for their building type. | Created benchmarking policy through a zoning ordinance: the benchmarking rules apply to 30 buildings in Mill Creek as part of efforts to revitalize the city's downtown center. Also includes financial compliance incentive; compliant buildings are exempt from the first $5000 per project of any city building construction or redevelopment fee. |