Building Energy Benchmarking and Disclosure Policies in the Northeast and Mid-Atlantic

What is Building Energy Benchmarking?

Building energy benchmarking is the process of tracking an existing building's energy usage over time and comparing the results to similar buildings *OR* the same building as measured at a different point in time/modeled during design.

Why Track Energy Usage?

Tracking energy usage is an important first step toward reducing energy consumption and associated costs. Benchmarking provides building owners and managers with the information they need to make informed decisions about building system optimization or efficiency investments. This is especially true in the public and commercial sectors where facilities managers can control large amounts of energy usage.

How Does the Benchmarking Process Work?

Building, utility, and fuel data from 12 full months (13 monthly bills preferred) of usage are collected and input/uploaded into a tracking software, the most popular of which is the U.S. EPA's **ENERGYSTAR Portfolio Manager**. Portfolio Manager is a freely available tool that normalizes energy data inputs according to weather records and generates a statement of performance detailing a building's **Energy Use Intensity** (EUI). Additionally, Portfolio Manager will compare a building to similar buildings nationwide and assign a score from 1-100. Those buildings achieving a score of 75 or more are eligible for *ENERGYSTAR* certification. More than 260,000 buildings, or 40% of the total U.S. commercial building space has been assessed using Portfolio Manager.

Why Disclose Energy Consumption Information?

Disclosure of a building's energy consumption information sends more accurate signals to market actors than if no such disclosure were available, creating a market-based mechanism for encouraging building energy efficiency. Free markets only function correctly if market actors have access to accurate information and currently few market participants have access to the crucial information provided by utility bills. Mandating disclosure of such information provides potential renters, buyers, landlords, and other market participants with a better understanding of operating costs than was previously available. With this information disclosed, higher performing buildings or rental spaces become more attractive in the marketplace due to the visibility of their comparatively low operating costs, while owners of low-performing buildings would have to consider efficiency upgrades to remain competitive in an open marketplace.

How Can I Access My Utility Data?

In order to streamline access to utility data, the Department of Energy has developed the **Green Button** Initiative. This initiative provides a standardized format for downloading a building's energy consumption data on a participating utility's website, accessible through a literal green button (*pictured on right*). More information about this initiative, including a list of utilities using or committed to using the Green Button standard can be found at **Energy.gov/data/green-button**.

Additionally, some utilities and third party vendors provide a higher level of streamlined access to utility data in the form of **Automated Benchmarking** or **Web Services**, which allows for the automatic exchange of data with Portfolio Manager. Without these services, utility data can be accessed by looking at monthly bills or contacting your utility. This information can then be manually entered into Portfolio Manager.

It's important to note that the benchmarking process often includes fuels which do not fall within a utility's realm of responsibility. Such fuels include propane, heating oil, and biomass. For these fuels, the building operator must keep track of fuel usage for the required period or engage a supplier who maintains accurate customer records.

Who Benchmarks their Building Energy Usage?

Benchmarking of building energy usage occurs in multiple sectors, including municipal, commercial, and multi-family residential.

Municipal governments often have large building portfolios and a desire to minimize operating costs, so, in many cases, they lead by example as early adopters of benchmarking practices. In fact, several jurisdictions have proven that benchmarking municipal buildings does not require legislative action, and can instead be mandated with an executive order.

Due to their often large portfolio size, municipal governments can face unique barriers when accessing data. To help alleviate these barriers, some utilities offer electronic data interchange. Electronic data interchange (EDI) is a standardized format for the electronic transfer of information, such as a municipality's aggregated utility bills.

New York State Executive Order 88:

On December 28, 2012, Governor Cuomo issued Executive Order 88 (EO 88), which mandated a 20% improvement in the energy use intensity of State government buildings by 2020. Annual benchmarking is required by all state facilities over 10,000 square feet. As part of Cuomo's Build Smart NY plan, EO 88 is intended to spark the marketplace by serving as an example for private building owners, demonstrating new technology, and providing an opportunity for the energy efficiency industry to provide innovative services to meet the needs of the State. The State currently spends about $500 million a year on utilities, and the plan is expected to reduce expenditures by $100 million a year by 2020.

Cambridge Building Energy Usage Disclosure Ordinance (BEUDO):

On July 28th, 2014 the City of Cambridge Massachusetts passed an ordinance requiring the disclosure of building energy usage in municipal buildings greater than 10,000 sq. ft., non-residential buildings greater than 25,000 sq. ft., and multi-family buildings with greater than 50 units. The bill itself saw widespread support from advocates, environmentalist, property owners, and others who spoke in favor of its passage.

Many cities and some counties are beginning to mandate through municipal ordinance that **commercial** buildings above a certain square footage within their jurisdiction benchmark and disclose their energy usage information.

In some cases, such ordinances also require that **multi-family residential** buildings above a certain threshold disclose their energy usage.

The most recently enacted energy rating and disclosure ordinance in our region was in Cambridge, MA, in July 2014.

Benefits of Building Energy Benchmarking and Disclosure

- ## Market-Based Mechanism
  - Building energy usage disclosure provides actionable information to market actors, creating permanent accountability and a demand for energy-efficient buildings that does not require public investment to sustain, resulting in market-driven cycle of building energy improvement.

- ## Identifies Investment Opportunities
  - Benchmarking provides building operators and owners with information that can help identify strategic opportunities for investment in energy performance (i.e.- where to find the "low hanging fruit")

- ## Proven Strategy for Energy Savings
  - On average, buildings which are consistently benchmarked reduce their energy consumption by approximately 2.4% each year (Source: EPA)
  - According to a survey of facility managers, those that benchmark their properties are more likely to make energy efficiency improvements than those that don't benchmark

- ## Enhanced Real Estate Values
  - Research suggests that buildings which undergo the benchmarking process and achieve an energy efficient certification—such as *ENERGY STAR*—are valued accordingly by the market and obtain higher rents, sale values, occupancy rates, productivity rates, and operational savings.

- ## Stimulating the Local Economy
  - Building energy usage disclosure ordinances have unquestionably spurred the creation of building construction and energy service job in municipalities where these ordinances are already in effect.
  - Money invested in energy efficiency stays within the local economy, rather than flowing to foreign regions for harvesting of their fossil fuels.

Established Benchmarking Policies
in the Northeast and Mid-Atlantic

City-Level Benchmarking and Disclosure Ordinances

	New York, NY	Boston, MA	District of Columbia	Philadelphia, PA	Cambridge, MA
Ordinance	Local Law 84	Building Energy Reporting and Disclosure Ordinance	Clean and Affordable Energy Act of 2008 (Title V)	BILL NO. 120428-A	Building Energy Usage Disclosure Ordinance
Enacted	2009	2013	2008	2012	2014
Municipal	May 2010 10,000 sq. ft.+	All	October 2014 10,000 sq. ft.+	January 2012 10,000 sq. ft. +	December 2014 10,000 sq. ft. +
Municipal Data & Reports	2010 2011 2012	2012 2013	Data/Map	2013 Report and Data	2013-2015 Data & Report
Commercial	May 2011 50,000 sq. ft.+	Sept. 2014 50,000 sq. ft.+ AND May 2016 35,000 sq. ft.+	April 2013 100,000 sq. ft. + AND April 2014 50,000 sq. ft.+	November 2013 50,000 sq.ft.+ (Of commercial use)	May 2015 50,000 sq.ft.+ May 2016 25,000 sq.ft.+
Multi-Family	May 2011 50,000 sq. ft.+	May 2015 50k sq. ft.+ /50 Units+ AND May 2017 35k sq.ft.+ /30 units +	April 2013 100,000 sq. ft. + AND April 2014 50,000 sq. ft.+	March 2015 50,000 sq. ft.+	May 2015 50+ Units
Non-Compliance Penalty	$500 per quarter (limit $2,000 annually)	$35-$200/day (limit $3,000 annually)	$100/day Non-Compliance Penalty	$300 within first 30 days, $100 per day thereafter	Pending
Compliance Guide	New York City Compliance Guide	Boston Compliance Guide	District of Columbia Compliance Guide	Philadelphia Compliance Guide	Pending
Private Sector Data & Reports	2011 Data (Report), 2012 Data (Report)	December 2014	2011; 2012; And (Report pg 26-34)	2013 Report 2014 Report 2014 Data	Pending

City-Level Benchmarking and Disclosure Ordinances (cont.)		
	Portland, ME	South Portland, ME
Ordinance	Order 67-16/17	Zoning Ordinance - Article XVII – Sec. 27-1701
Enacted	2016	2017
Municipal	5,000 Sq. Ft. +	5,000 Sq. Ft. +
Municipal Data & Reports	None Available Yet	None Available Yet
Commercial	20,00 Sq. Ft. +	Applicable only to 5,00 Sq. Ft. + commercial buildings in the Mill Creek Shopping District
Multi-Family	50 Units or more	
Non-Compliance Penalty	First Violation – written warning Subsequent/ongoing violations – subject to fine of up to $20/day	Non-Compliance is unlawful and any delay in submitting a report greater than thirty days shall be deemed a violation
Compliance Guide	Compliance covered in ordinance section (i)	Compliance is covered in Article XVII – Sec. 27-1701 of the Zoning Ordinance
Private Sector Data & Reports	None Available Yet	None Available Yet

State-Level Public Building Benchmarking and Disclosure

	New York	Connecticut	Rhode Island	Minnesota	Delaware
State-Level Public Building Benchmarking and Disclosure Initiatives					
Statute or Regulation	Executive Order 88	Public Act 13-298	DOE funded grant (non-law)	CHAPTER 398-H.F.No. 2972	Executive Order 18
Enacted	2012	2013	2012-2015	2002	2010
Notable Features	• Benchmarking of state buildings • ASHRAE Level II Audits for buildings with low benchmarking scores • Two years to make substantial progress toward implementing cost effective portfolio of recommended measures • Sub-metering of all buildings 100,000 sq. ft.+ on a mastered metered campus by 2017	• Department of Energy and Environmental Protection (DEEP) "may" benchmark municipally owned buildings	• Rhode Island Public Energy Partnership with Department of Energy Funding • Benchmarking municipal facilities throughout the state • Conduct retrofits that achieve a 20% usage reduction	• Directs the Department of Administration to maintain information on energy usage in public buildings • Developed B3 energy tracking tool	• Bench-marking of all state-owned and leased buildings • Target facilities with highest energy use and identify low-cost changes to reduce energy use without capital investment
Reports/ Data	2013 BuildSmart NY Report and Data				

County Level Benchmarking and Disclosure Initiatives

County Level Benchmarking and Disclosure Initiatives		
	Montgomery County, MD	Arlington County, MD
Statute or Regulation	BILL 2-14	
Enacted	2014	

Notable Features	Commercial and Municipal Benchmarking and Disclosure
	• Reporting verified every three years by qualified professional
	  • Municipal 50,000 sq. ft.+ (June 2013)
	  • Commercial December 2016: 250k+ sq ft. December 2017: 50k+ sq ft
	• Non-compliance Penalty is "Class A violation" (Max $750)
		Arlington Initiative to Rethink Energy (AIRE)
		• Benchmarking and disclosure of municipal buildings

Related Initiatives	Part of a suite of Nine Energy Bills related to: • LED Street lighting • Social Cost of Carbon Usage Calculations • 100% Renewable Power Purchases by 2016 • Expedited Solar Permitting Review • Expedited electric vehicle charging station permit review • Telecommuting regulations and liason • Electric Vehicle Ready Zoning requirements • Residential photovoltaic systems exemption from set-back requirements Time of Sale Disclosure and Audit for residential buildings (2008)	Part of a larger Community Energy Plan including: • Arlington Green Games neighborhood energy competition • Green Home Choice voluntary county certification
Reports/Data	Forthcoming	Municipal Building Energy Report Card Data and Greenhouse Gas Inventory

NEEP Benchmarking and Disclosure Resources

NEEP Resources:

- [Public Sector Building Energy Benchmarking: Utility Data Access Options and Opportunities](#) (2016)

- [Building Energy Rating and Disclosure Policies: Update and Lessons from the Field](#) (2013)

- [Building Energy Rating and Disclosure Handout](#) (2013)

- [Regional Operations and Maintenance Guide for High Performance Schools and Public Buildings in the Northeast and Mid-Atlantic](#) (2017 Update)

- [Roadmap to Zero Energy Public Buildings: Progress Report](#) (2016)

- [NEEP Zero Net Energy Roadmap](#) (2012)

- [Valuing Building Energy Efficiency Through Disclosure and Upgrade Policies: A Roadmap for the Northeast United States](#) (2009)

Related Resources:

[ENERGYSTAR Portfolio Manager](#) (U.S. Environmental Protection Agency)

[Green Button](#) Initiative (U.S. Department of Energy)

[Apps for Energy](#) Initiative (U.S. Department of Energy)

[Benchmarking and Disclosure: State and Local Policy Design Guide](#) (SEE Action Network)

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