SEATTLE OFFICE OF
Sustainability & Environment

Ph 206.615.0817
Fx 206.684.3013

Transparency of Building Energy Benchmarking Data – Background Report

The Seattle Energy Benchmarking and Reporting Program (Ordinances 123226 and 123993) requires owners of commercial and multifamily buildings (20,000 square feet or greater) to annually benchmark the energy performance of their building with the EPA's ENERGY STAR Portfolio Manager. The energy performance data must be reported to the City of Seattle and disclosed to any current or prospective tenant, buyer, or lender upon request. The City does not currently make the energy performance data of individual buildings publicly available or "transparent." Since 2010, when Seattle was one of the first cities to adopt benchmarking, other cities have included transparency as a key aspect of their benchmarking programs. In the United States, 15 jurisdictions (14 cities and one county) and two states currently require energy benchmarking and 13 make the data publicly transparent—only Seattle and Austin, Texas do not.

Seattle requires building owners to provide building energy performance information to any current or prospective tenant, buyer, or lender involved with a real estate or financing transaction, but only upon request. Making the energy performance data of individual buildings transparent would have several benefits, listed below. No additional actions or costs are required of building owners.

- Ensure that building owners, managers and tenants have a means to review the energy performance of their own facilities in comparison to similar local buildings.
- Allow the market to reward high performing buildings by increasing the visibility and value of high-performing buildings
- Protect consumer interests by providing prospective tenants and buyers with access to energy performance information early in their search for properties, before they have reached the transaction stage.
- Provide an incentive for building owners to incorporate energy efficiency into lease agreements.
- Dissuade against inaccurate or falsified reporting of benchmarking data by making building performance information available for public scrutiny.
- Allow building design teams to better track the performance of projects they design to better understand if energy efficiency goals are being met, and to improve their energy models.
- Allow the City and stakeholders to shape how to best present the benchmarking information, before any potential freedom of information request and as a model for benchmarking at the state level.

Typically, disclosure of building specific data is phased in accordance with the benchmarking schedule—larger building classes must report first and so their benchmarking data is made transparent first. The disclosure of the benchmarking data may be delayed until multiple rounds of benchmarking have been completed—Chicago, Washington, DC, Minneapolis, and Portland begin disclosing benchmarking data with a building's second annual report. A transitional transparency policy, where the compliance status of buildings is published for one or more years before specific building energy use data is disclosed in subsequent years, may also be employed. Boston, Cambridge, and San Francisco have taken this approach. In addition, many cities first disclose the performance of their municipally-owned buildings before requiring the same of the private market.

Washington, DC, Minneapolis, New York and Philadelphia are the only cities to date that have fully implemented their transparency functions; other cities are in the process of developing their programs. A compliance schedule for each US jurisdiction is provided in Attachment A. Case studies of the four cities which have already publically disclosed building performance data, as well as a case study for Australia, is included as Attachment B.

The specific information that has been made transparent by other jurisdictions falls, generally, into two categories (a full list of information being disclosed by benchmarking cities is provided in Attachment B).:

1. Building information, such as the address, floor area, year built, or building use type.
2. Energy performance information, such as Energy Star Score, Energy Use Intensity (EUI-kBtu/sf), and greenhouse gas emissions.

A system that can quickly convey key performance metrics in a way that's useful for building owners and managers, tenants, investors, and policy-makers would be most effective at driving market transformation. Options utilized by other cities for how to present the information include searchable and sortable data tables, maps with embedded building data, charts and graphs of aggregate data, individual building profiles with pictures, and (almost) live energy use tracking. Philadelphia has the most robust data visualization tool, developed after they determined stakeholders wanted user-friendly, visual ways to compare data between buildings and sectors.

A few cities allow building owners to add their own comments. Providing this space for accompanying comments on performance data gives building owners and managers an opportunity to share context, such as plans to improve, specific space use, or other extenuating circumstances that the benchmarking data alone may not have captured. Philadelphia has this option available, at the request of one particular owner. Out of 1,2000 properties, only 10 owners utilized the comments option.

Recent studies have identified benchmarked buildings as having lower energy use than non-benchmarked buildings.[1] With the relative newness of building energy transparency, there is minimal information yet on how it is impacting market behavior. Similarly, since most other jurisdictions implemented benchmarking and transparency together, any impacts that are reported aren't separated for transparency specifically. In conversations with cities that currently have active transparency, there is some anecdotal information on early impacts. Philadelphia saw an uptick in views after they launched their map tool. In NYC page views peak right after new data is posted; they speculate that it is service providers interested in contacting owners. And, DC has noticed a higher level of starting knowledge about building performance from those seeking utility incentives.

In the cities with transparency, there has been greater media visibility, typically limited to the period just after information is published. DC tied transparency to a Mayoral award for the highest certified Energy Star building, highlighting the success stories. NYC assigned and published letter grades, generating negative media attention and unhappy owners. They have since discontinued the practice. In DC and Philadelphia, there were a few news stories that highlighted both buildings with high scores and those with low scores. Minneapolis is currently responding to a Freedom of Information Act (FOIA) request, even though they have already planned to disclose for the first time later this year. All four of these cities have emphasized the need to provide media with the proper context for what the scores are and aren't and to help to control how information is presented.

[1] Karen Palmer and Margaret Walls, *Does Information Provision Shrink the Energy Efficiency Gap?* April 2015

Attachment A: Benchmarking & Transparency Programs

Jurisdiction	Legislation	First Year of Data Collected	First Year of Data Published
Atlanta	April 2015	2015 (public >25K) 2016 (private >25K)	2015 (public >25K) 2016 (private >25K)
Berkeley	March 2015	2015 (>50K) 2016 (>25K)	2015 (>50K) 2016 (>25K)
Boston	May 2013	2012 (public) 2013 (non-residential >50K) 2014 (residential >50K or 50 units) 2015 (non-residential >35K) 2016 (residential >35K or 35 units)	2012 (public) 2014 (non-residential >50K) 2015 (residential >50K or 50 units) 2016 (non-residential >35K) 2017 (residential >35K or 35 units)
Cambridge	July 2014	2014 (public, residential >50 units, non-residential >50K) 2015 (non-residential >25K)	2014 (public) 2015 (residential >50 units, non-residential >50K) 2016 (non-residential >25K)
Chicago	September 2013	2013 (public and non-residential >250K) 2014 (public and non-residential >50K, residential >250K) 2015 (residential >50K)	2014 (public and non-residential >250K) 2015 (public and non-residential >50K, residential >250K) 2016 (residential >50K)
District of Columbia	July 2008	2010 (>200K) 2011 (>150K) 2012 (>100K) 2013 (>50K)	2011 (>200K) 2012 (>150K) 2013 (>100K) 2014 (>50K)
Kansas City	June 2015	2015 (public >10K) 2016 (private <100K) 2017 (private <50K)	2015 (public >10K) 2017 (private <100K) 2018 (private <50K)
Minneapolis	February 2013	2012 (public) 2013 (non-residential <100K) 2014 (non-residential <50K)	2012 (public) 2014 (non-residential <100K) 2015 (non-residential <50K)
Montgomery County	April 2014	2014 (public <50K) 2015 (private <250K) 2016 (private <50K)	2015 (public <50K) 2016 (private <250K) 2017 (private <50K)
New York City	December 2009	2009 (public <10K) 2010 (non-residential <50K) 2011 (residential <50K)	2010 (public <10K) 2011 (non-residential <50K) 2012 (residential <50K)
Philadelphia	June 2012	2011 (public >10K) 2012 (non-residential >50K)	2011 (public >10K) 2013 (non-residential >50K)
Portland	April 2015	2015 (non-residential >50K) 2016 (non-residential >20K)	2016 (non-residential >50K) 2017 (non-residential >20K)
San Francisco	February 2011	2011 (non-residential >50K) 2012 (non-residential >25K) 2013 (non-residential >10K)	2012 (non-residential >50K) 2013 (non-residential >25K) 2014 (non-residential >10K)

Attachment B: Case Studies

Information being disclosed by benchmarking cities

Building Information	Energy Performance Information
• Building address • Building name • GPS Coordinates • Tax parcel number • Neighborhood name • Building owner name • Building owner address • Building owner contact information • Year of construction • Primary/additional use type(s) • Gross floor area	• ENERGY STAR score (when available) • Site energy use intensity (Site EUI) • Weather normalized site EUI • Source energy use intensity (Source EUI) • Weather normalized source EUI • Total electricity use • Total natural gas use • Total steam use • Total greenhouse gas emissions • Greenhouse gas emissions intensity • National median comparisons • Local median comparisons

The case studies below are compiled from each cities' benchmarking legislation, outreach materials and public disclosure websites and from interviews of benchmarking staff at each City.

WASHINGTON, DC

Policy Title	**Clean and Affordable Energy Act of 2008 (Title V: Energy Benchmarking Requirements for Private and Government Buildings)**
Policy Description	All private commercial and multifamily buildings greater than or equal to 50,000 gross square feet (and municipal buildings greater than or equal to 10,000 gross square feet) must benchmark their energy use via ENERGY STAR Portfolio Manager. Beginning with the second year of benchmarking, energy performance data is disclosed on the District Department of Environment website. Because the benchmarking requirement was phased in according to building size over several years, the 2014 data (to be published in late 2015) will be the first published dataset to include all buildings covered by the benchmarking law.
First year of data published	2011 (Buildings >200,000 ft^2) 2012 (Buildings >150,000 ft^2) 2013 (Buildings >100,000 ft^2) 2014 (Buildings >50,000 ft^2)
Metrics Disclosed	DC Real Property ID, Building Address, Building Owner, Ward, Building Name, Primary Property Type, Year Built, Reported Gross Floor Area (ft2), Site EUI (kBtu/ft2), Weather Normalized Source EUI (kBtu/ft2), ENERGY STAR Score, Total GHG Emissions, Total GHG Emissions Intensity, Electricity Use (kWh), Natural Gas Use (therms), District Steam Use (kBtu), Other Fuel Use, Water Use (kgal), Coordinates for GIS mapping, Electric interval data (municipal buildings only)
Website Address	• http://www.buildsmartdc.com (Municipal Buildings) • http://opendata.dc.gov/datasets/d9d0410e00a6424ab7ee6479023bebd4_0 (Private Buildings)

Website Features	Municipal buildings: Includes searchable catalogue with photographs, descriptions, and on-map locations of each building, along with most recent annual energy benchmark data (including the annual energy cost in dollars) and almost-live energy use data in 15 minute intervals. Downloadable data and charts. Social-media ready. Private buildings: Downloadable and sortable spreadsheets of energy performance benchmark data. Capable of creating charts based on user's data selection. Plans are underway for a map-based data, either through the existing structure for their public facilities or a webpage similar to that used by Philadelphia. They are interested in including complete profiles and report cards for each building.
Using the Data	*Supporting Programs*: The previous mayor presented awards to buildings with the highest certified ENERGY STAR score and found that buildings greatly valued that local competition & recognition factor. *Media*: Several news outlets ran stories highlighting buildings on the high and low ends of the spectrum. Some reporters misunderstood the EUI metric and ran stories highlighting high EUIs of several LEED buildings without understanding or explaining the context. DDOE conducted some media outreach/education, but suggests that more may have been useful in light of the apparent confusion. *Building Market:* There have been anecdotal reports of buildings increasing their budgets for sustainability improvements. The local conservation utility reports seeing a higher starting level of knowledge from building owners and managers with whom they engage.

MINNEAPOLIS, MN

Policy Title	**Commercial Building Rating and Disclosure Ordinance**
Policy Description	All non-residential and non-industrial buildings greater than or equal to 50,000 gross square feet (and municipal buildings greater than or equal to 25,000 gross square feet) must benchmark their energy use via ENERGY STAR Portfolio Manager beginning in their second year of operation. Energy performance data, including aggregated summary data, is disclosed on the City of Minneapolis website. Because the benchmarking requirement was phased in according to building size over several years, the 2015 data (to be published in 2016) will be the first published dataset to include privately-owned buildings covered by the benchmarking law. To date, only public buildings have been disclosed.
First year of data published	2012 (Municipal Buildings >25,000 ft^2) 2014 (Commercial Buildings >100,000 ft^2) 2015 (Commercial Buildings >50,000 ft^2)
Metrics Disclosed	Property Name, ENERGY STAR Score, Property Type, Address, Floor Area (ft^2), Year Built, Total GHG Emissions ($MtCO_2e$), Site EUI ($kBtu/ft^2$), Weather Normalized Site EUI ($kBtu/ft^2$), Source EUI ($kBtu/ft^2$), Weather Normalized Source EUI ($kBtu/ft^2$),
Website Address	http://www.ci.minneapolis.mn.us/environment/energy/WCMS1P-116916 (Municipal Buildings)

Website Features	Municipal Buildings: Energy performance data is available in several formats on the City of Minneapolis website: 1) a PDF report including summary statistics, charts, written analysis, and a table of individual buildings' results; 2) included on a searchable PropertyInfo database that also discloses zoning information, etc.; 3) a map interface where clicking on a property pulls up a call-out box with energy performance data.
Using the Data	*Supporting Programs*: Minneapolis recently received a $40,000 grant from the State Pollution Control Agency to certify around 50 ENERGY STAR eligible buildings. *Data Verification*: All benchmarking data will be published so long as the reporting building is in compliance with the ordinance. *Media*: There was no real media coverage of disclosure of municipal buildings, but a local public radio reporter (unwilling to wait for the city's report later this year) recently submitted a FOIA request for private buildings.

NEW YORK, NY

Policy Title	**Local Law 84: Benchmarking**
Policy Description	All commercial and multifamily buildings greater than or equal to 50,000 gross square feet must benchmark their energy use via ENERGY STAR Portfolio Manager each year. Energy performance data is disclosed on the City of New York website.
First year of data published	2010 (Municipal Buildings) 2011 (Commercial Buildings) 2012 (Residential Buildings)
Metrics Disclosed	NYC Borough-Block-Lot (BBL) Identifier, NYC Building Identification Number (BIN), Address, Benchmarking Submission Status, Site EUI (kBtu/ft^2), Weather Normalized Site EUI (kBtu/ft^2), Source EUI (kBtu/ft^2), Weather Normalized Source EUI (kBtu/ft^2), Municipally Supplied Potable Water - Indoor Intensity (gal/ft^2), ENERGY STAR Score, Total GHG Emissions ($MtCO_2e$), Direct GHG Emissions ($MtCO_2e$), Indirect GHG Emissions ($MtCO_2e$), Reported Property Floor Area (ft^2), Primary Property Type, Number of Buildings
Website Address	http://www.nyc.gov/html/gbee/html/plan/ll84_scores.shtml
Website Features	Building energy performance data is available in downloadable Excel spreadsheets and a searchable spreadsheet format that also allows users to create graphs and other visuals to compare data. The City of New York also publishes an annual report on the program including aggregated summary data and written analysis.
Using the Data	*Supporting Programs* New York plans to move toward a NYC-specific comparative metric and a personalized report card for individual building owners showing local peer comparisons and improvement over time. *Media*: When disclosure first began, NYC assigned letter grades based on quartile association on buildings. This generated considerable media attention from reporters who mischaracterized low grades as an indictment of poor performer. They no longer publish building grades.

	Building Market: A Department of Energy report indicated that buildings covered by the policy reduced their energy use 5.7% over 4 years between 2010 and 2013.[2] DOE's report also suggests more building managers, real estate professionals, tenants, and investors are more aware of and attentive to energy use. However, the report notes that the policy has not yet driven wide-scale capital improvements for deeper energy efficiency.
Companion Policies	"Local Law 87 (LL87) mandates that buildings over 50,000 gross square feet undergo periodic energy audit and retro-commissioning measures. . LL88 requires large non-residential buildings to upgrade lighting to meet current New York City Energy Conservation Code standards, and to install electrical sub-meters for each large non-residential tenant space and provide monthly energy statements." www.nyc.gov/html/gbee/html/plan/plan.shtml

PHILADELPHIA, PA

Policy Title	**Philadelphia Code §9-3402: Benchmarking Energy and Water Use**
Policy Description	All commercial buildings greater than or equal to 50,000 gross square feet must benchmark their energy use via ENERGY STAR Portfolio Manager each year. Energy performance data is disclosed on the City of Philadelphia website. In addition, building owners must provide prospective buyers and lessees with the most recent ENERGY STAR Energy Performance report upon request.
First year of data published	2011 (Municipal Buildings) 2012 (Commercial Buildings)
Metrics Disclosed	Property Name, Address, Primary Property Type, Property Floor Area, Year Built, Number of Buildings, Philadelphia Building ID, Electricity Use (kBtu), Natural Gas Use (kBtu), Fuel Oil #2 Use (kBtu), District Steam Use (kBtu), ENERGY STAR Score, Site EUI (kBtu/ft²), Source EUI (kBtu/ft²), Water Use (kgal), Total GHG Emissions ($MtCO_2e$), Notes from Building Owners/Operators
Website Address	http://visualization.phillybuildingbenchmarking.com/#/
Website Features	Searchable, filterable, and interactive map-based interface featuring individual profiles with building stats compared graphically to other buildings in the City. Data is available for both public and private buildings in separate tables online, as well as in downloadable .csv formats. Individual building performance, sector performance, and compliance rates for both private and municipal buildings are also summarized and aggregated each year in a written analysis report.
Using the Data	*Supporting Programs:* They are developing personalized report cards for each building, which would be available online but only accessible by the building owner.

[2] US DOE, *New York City Benchmarking and Transparency Policy Impact Evaluation.* Report. May 2015

Media: Some media reports immediately after data disclosure called out poor performers, signaling that perhaps media needs additional attention on what exactly benchmarking scores describe.

Building Market: The data visualization platform typically experiences major uptick in web traffic after new data is released.

Australia

Internationally, National Australian Built Environment Rating System (NABERS) is one of the more successful building rating and disclosure programs. As of November 2011, the federal government of Australia requires sellers and lessors of office spaces greater than 2,000 square meters (21,528 square feet) to obtain and disclose a current Building Energy Efficiency Certificate (BEEC), when advertising space or undertaking a transaction. The BEEC includes a NABERS energy score (rated on a system of zero to six stars) determined by an independent, accredited assessor and is publicly accessible online. While NABERS has different tools to assess base building efficiency, tenanted spaces efficiency, and whole building efficiency, the BEEC required for the Commercial Building Disclosure rule employs the base building rating system. This covers performance of the building's central services and common areas, but does not take into account lighting or other energy used directly by tenants.

About 72% of Australian office space has now been rated by NABERS. When mandatory transparency of NABERS ratings began in 2011, the average rating dipped slightly (likely because poor performers were obligated to obtain and declare ratings for the first time) but within a year it had bounced back to pre-mandatory disclosure levels. Since then, average ratings have increased steadily. Office buildings that regularly measure their performance have reported an average improvement in energy efficiency of 8.5%, and research shows that higher rated buildings have reduced vacancy rates and enhanced property values.