

Differences Across the Atlantic: International Perspectives on Building Energy Labeling

CIBSE/ASHRAE Webinar – 19 February 2014

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Graphic by CoStar Group



A Newer View of NYC Office Energy Performance



Based on 2011 LL84 Submissions

First – some semantics

Terminology differs across continents & countries

	Australia	Canada	China	E.U.	U.S.
Assessment system	Rating	Labeling	Rating	Certification	Benchmarking; Rating
Evaluation methodology	Rating	Rating	Rating	Rating	Rating
Result of evaluation	Rating; Score	Rating; Score	Rating	Class; Rating	Rating; Score
Physical product of assessment	Label	Label	Label	Label; Certificate	Label; Rating; Statement

From “Comparing Building Energy Performance Measurement” – at www.imt.org

Many Elements to a Rating Scheme

- Lots of facets:
 - Technical Options
 - Public Disclosure?
 - Training
 - Data Management
 - Compliance...
- Other Considerations
 - Voluntary/Mandatory
 - Resources



IEA Policy Pathways: Energy Performance Certification of Buildings (2010)

Building Energy Rating in the US

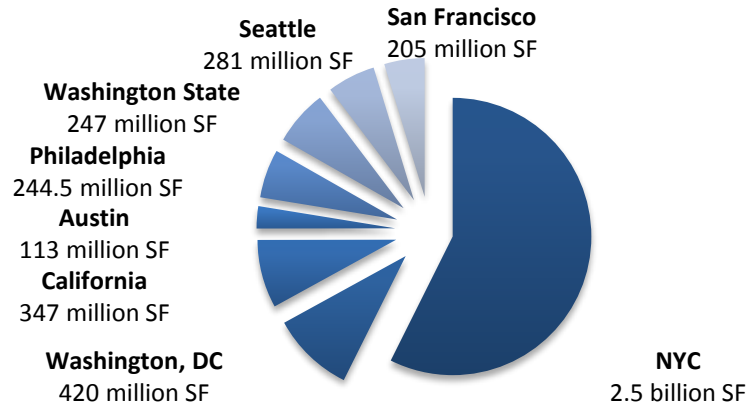
- Rating Tools are developed at national level
 - All voluntary
- Growing number of cities and states implementing mandatory rating and disclosure
 - Nearly all rely on Energy Star Portfolio Manager Rating System (Operational Rating; normalized to 1-100 score)

U.S. Benchmarking Policy Landscape

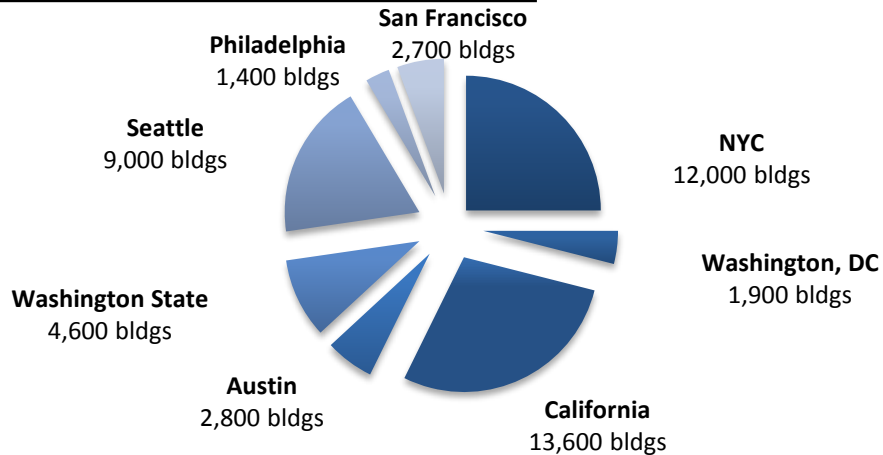


Existing US disclosure policies will impact more than **60,000** buildings totaling more than **400 million m2** of floor space in major real estate markets over the next few years

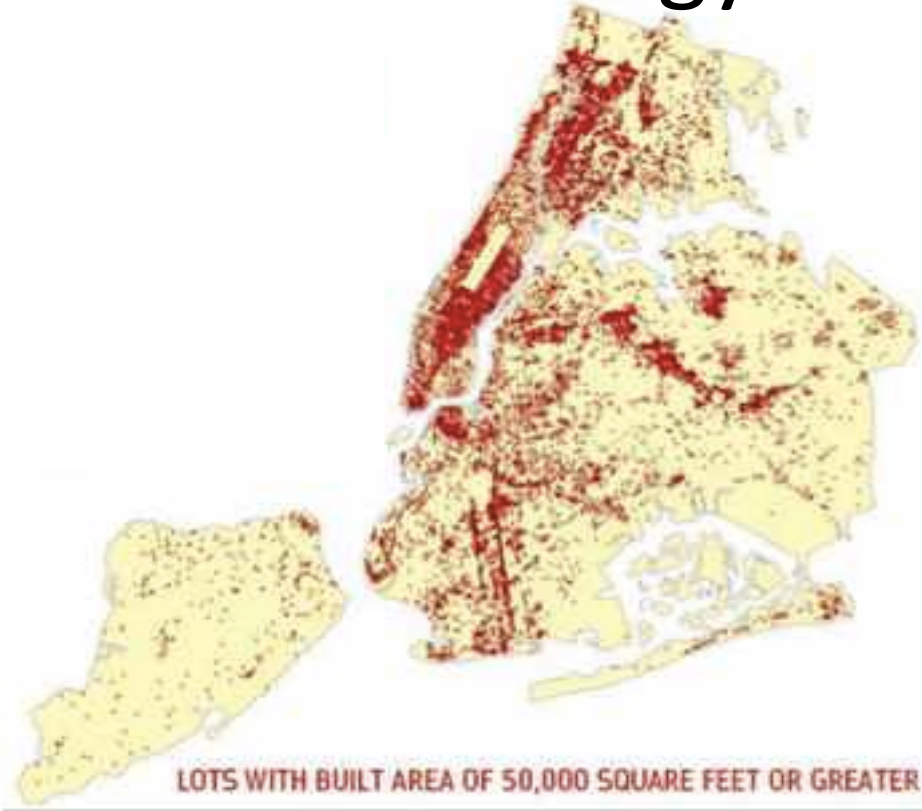
BUILDING AREA (IN SQUARE FEET) COVERED ANNUALLY



NUMBER OF BUILDINGS COVERED ANNUALLY

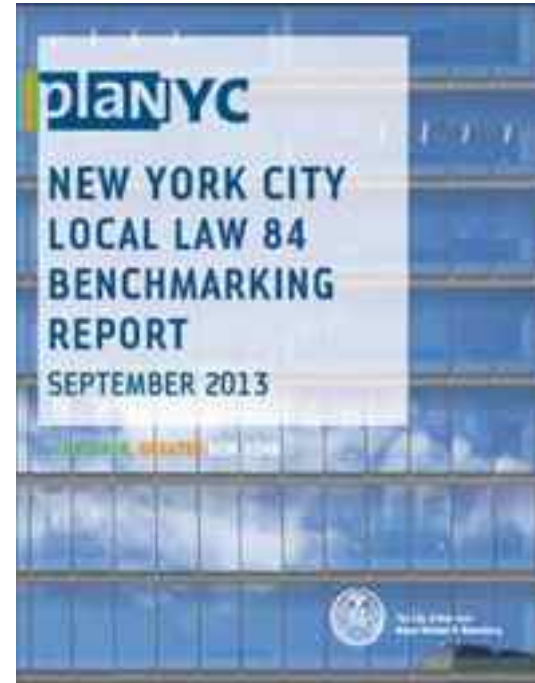


New York City Local Law 84 of 2009: Annual Energy & Water Benchmarking



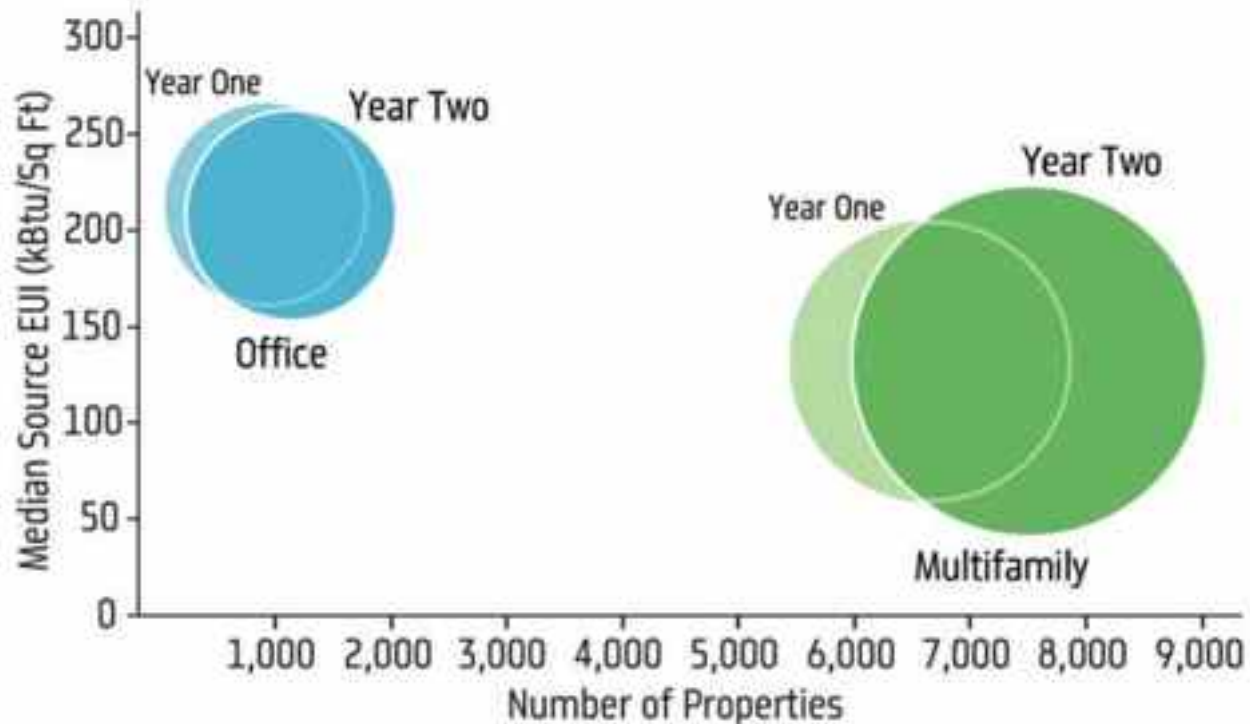
- 22,000 Buildings
- 2% of NYC Buildings
- Half of city's total floor area
- In every borough

What do we know?



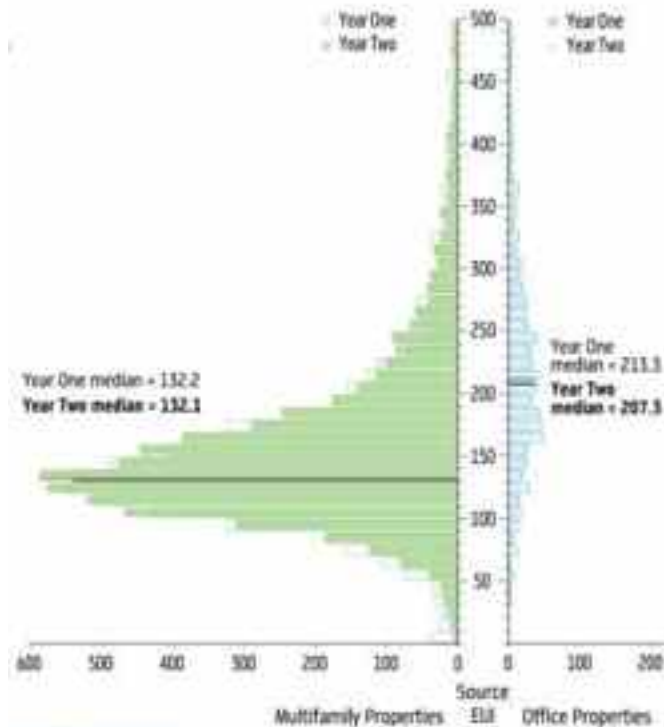
More Buildings Reporting Year on Year

[Fig. 18] Year Over Year Comparison of Median EUI, Number of Properties, and Total Energy Per Sector¹⁹



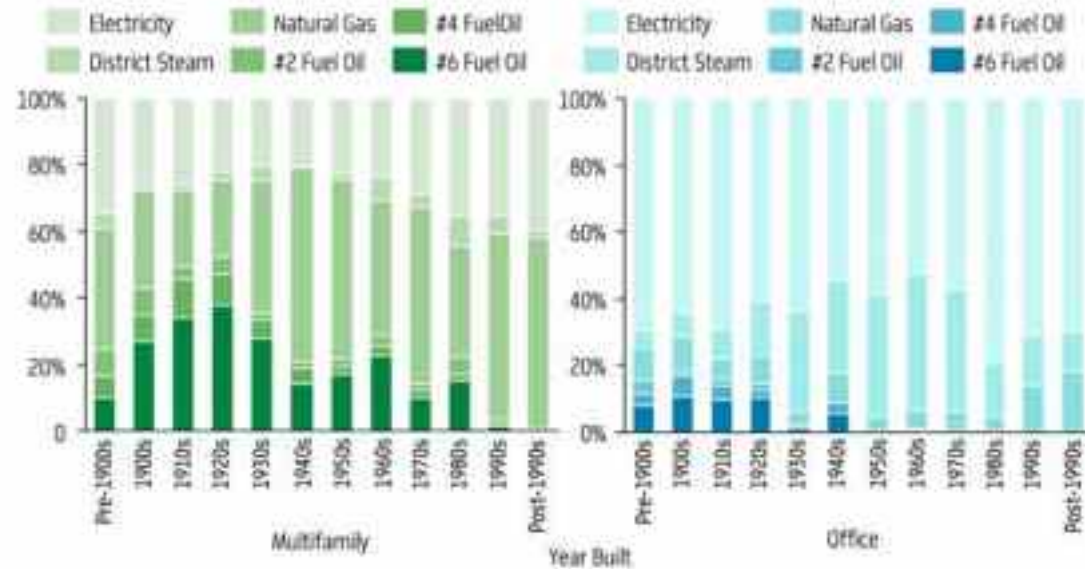
Lots of Info about Energy Performance

[Fig. 14] Source EUI Histograms for Multifamily and Office Sectors



Source: New York University

[Fig. 24] Multifamily and Office Energy Mix by Year Built



Source: New York University and NYC Mayor's Office

How has public understanding evolved to date?

The image displays two screenshots of news articles from The New York Times, illustrating the evolution of public understanding regarding energy use in buildings.

Top Screenshot (December 24, 2012):
The article is titled "City's Law Tracking Energy Use Yields Some Surprises" by Bill Keenan. It discusses the City of New York's LEED certification program for buildings. A prominent yellow banner at the top reads "Beautiful The Carole King Musical 'A MUST-SEE!' -ABC 11 NEW YORK". The article text mentions that the World Trade Center has maintained its gold LEED rating, but notes that energy efficiency is still a work in progress, with a score of 74 out of 100 for high-efficiency buildings.

Bottom Screenshot (September 27, 2013):
The article is titled "A Fresh Set of Grades Measures Energy Use in Residential Buildings" by Bill Keenan. It reports on a new program where the city is grading residential buildings based on energy efficiency. A photograph of a large, ornate building is shown. The article notes that a small grosser co-op in Washington Heights has received an 'A' grade, while a modern luxury tower in Battery Park City has a 'D' grade.

NY Times: 12/24/2012; 9/27/2013

Informing Professional Dialogue

The image is a screenshot of a web browser displaying the BuildingGreen.com website. The browser's address bar shows the URL: www.buildinggreen.com/auth/article.cfm?2013/12/13/New_Energy_Data_Is_Changing_How_We_Judge_Efficiency_and_LEED. The website's header includes the BuildingGreen.com logo and a navigation menu with links for NEWS, LEARN, CBI DIVISIONS, LEED CREDITS, GREEN PRODUCTS, CASE STUDIES, and BLOGS. The main content area features the article title "New Energy Data Is Changing How We Judge Efficiency—and LEED" in a large, bold font. Below the title is a sub-headline: "Seeking lessons from New York City benchmarking data, researchers question everything we thought we knew about energy metrics." The author's name, "By Nadav Malin", is listed below the sub-headline. The article text begins with "In the beginning, there was Energy Star." and continues with "Supported by the online Portfolio Manager infrastructure and statistical models from the periodic Commercial Buildings Energy Consumption Survey (CBECS), the U.S. Environmental Protection Agency of the U.S. Environmental Protection Agency...". To the right of the article, there are sections for "ARTICLE CONTENTS" with a list of links, "DISCUSSIONS" with a comment count and date, and "RELATED ARTICLES" with a list of links. The browser's address bar and the website's navigation menu are visible at the top of the page.

www.buildinggreen.com/auth/article.cfm?2013/12/13/New_Energy_Data_Is_Changing_How_We_Judge_Efficiency_and_LEED

BuildingGreen.com

NEWS LEARN CBI DIVISIONS LEED CREDITS GREEN PRODUCTS CASE STUDIES BLOGS

Environmental Building News

THE LEADING SOURCE FOR ENVIRONMENTALLY RESPONSIBLE DESIGN & CONSTRUCTION

New Energy Data Is Changing How We Judge Efficiency—and LEED

Seeking lessons from New York City benchmarking data, researchers question everything we thought we knew about energy metrics.

By Nadav Malin

In the beginning, there was Energy Star.

Supported by the online Portfolio Manager infrastructure and statistical models from the periodic Commercial Buildings Energy Consumption Survey (CBECS), the U.S. Environmental Protection Agency of the U.S. Environmental Protection Agency...

ARTICLE CONTENTS

- Going Beyond Energy Star
- Shifting the Paradigm of Energy Star
- Business Efficiency
- Market Jitters
- High Numbers, Few Conclusions

DISCUSSIONS

What Matters
Marian Sheffer
Dec 20, 2013

More comments

RELATED ARTICLES

- Why Buildings Don't Meet Energy Star Goals in Year Two
- EBC: What's Happening - October 2013

More related articles

What are the “Right” Metrics?

- What is “Building Performance”?
- LL84 reports 1-100 Energy Star Score where applicable, and EUI
- Is “Energy Use Intensity” (EUI, energy per floor area) the best measure?
- What motivates “action”?

Which Office Building is “Greener”?



Is LL84 Having an Impact?

From Tishman Speyer – “How LL 84 Has Changed the Way We Operate”:

New Technologies:

- Using Pulse Meters to track energy consumption in 15-minute intervals
- Provides greater transparency and clarity on how we can improve

More Energy Efficiency Projects:

- Leasing, ECM, and Asset Management teams take more notice now that the information is public
- Increasing number of tenants are inquiring about EnergyStar scores
- Increasing number of investors are inquiring about current and historical EnergyStar scores

Could it be Better?

Again; Tishman Speyer view - Positive and Negative:

Positive Example: Chrysler Building / MetLife Building

- Chrysler Building showed that not all energy efficient buildings had to be brand new; was recently certified as LEED Gold for EB
- MetLife building score improved from a 42 to a 47 after major renovation and energy efficiency project

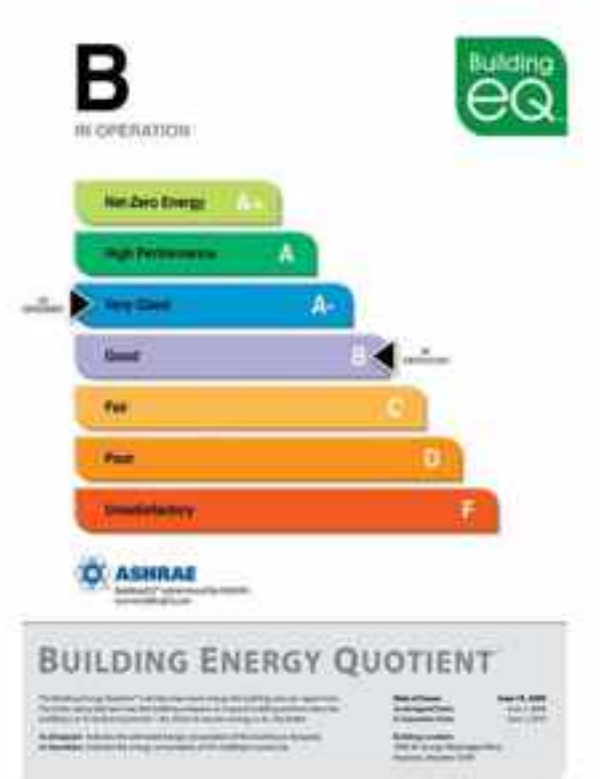
Negative Example: Rockefeller Center

- Many space types that don't exist within EnergyStar
- No comps
- Campus layout – everything is interconnected
- High-energy tenants (NBC)

Building	ES Score
11 West 42 nd Street	44
520 Madison Avenue	77
300 Park Avenue	86
Chrysler Building	86
Chrysler East	71
CitySpire	85
MetLife Building	47

What's Your Building EQ?

- ASHRAE's "Building Energy Quotient," or "bEQ"
- bEQ is normalized Energy Use Intensity
 - Modeled (asset) or measured (operational) energy per unit of area
 - Represented as % of an appropriate modeled or calculated reference value
- See www.BuildingEQ.com



IPEEC Buildings Energy Efficiency Taskgroup



Current Project - Review of Issues and Impacts of Building Energy Rating Schemes:

- Identifying, reviewing and summarizing building energy rating systems currently in use, or in development, in IPEEC countries.
- Focusing on the impact of building energy ratings on the market value of properties (at time of sale, lease or appraisal).
- Ascertaining the attributes of building rating systems that tend to influence such impacts.
- Examining other impacts of building ratings, such as on efficiency-related investment decisions by building owners.

Key: Consumer Awareness & Confidence



- Is consumer aware of scheme?

- Does consumer understand information in rating label?
- Do the scales on the label make sense to a lay person?

- Does consumer trust information in rating label?
- Is information accurate and relevant?
- Is it timely?

- Does consumer find information in rating label useful?
- Is the information directly usable?

- Does consumer act on information in rating label?
- Direct action, such as impact on purchase, rental, or investment decision
- Indirect action – recommending label to others

From Forthcoming IPEEC Report:

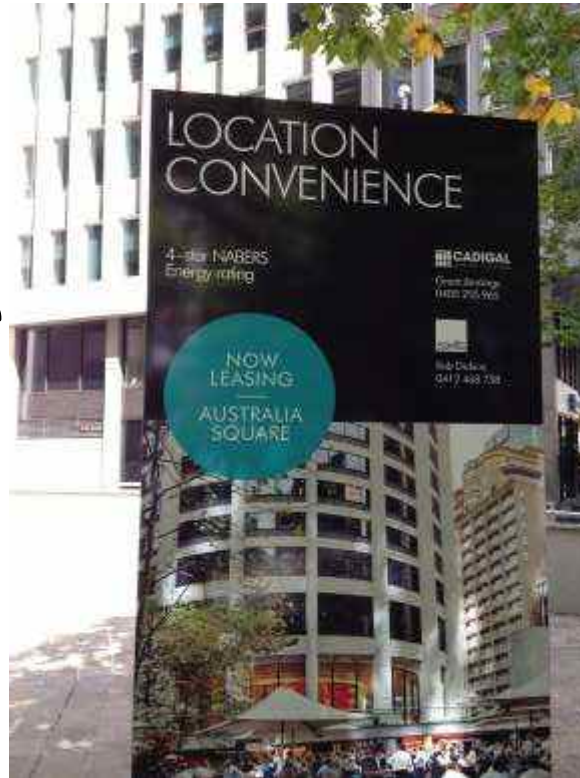
“Building Energy Rating Schemes: Assessing Issues and Impacts”

Asset vs Operational Ratings

- ***“Asset” Ratings***, based on calculation of how the building could optimally operate
 - Rates the building
- ***“Operational” Rating*** - also called a ***“Measured” Energy Rating*** - based on actual measured annual use
 - Rates the use of the building

Separate Landlord/Tenant Ratings?

- Could separate ratings drive more action?
- Some jurisdictions have landlord ratings
- Comes with its own set of challenges...



Welcome to BuildingRating.org

Rating and Disclosure : (ˈrā-tīŋ ænd dɪsˈkloʊ-ʒər) **noun**.

"The practice of evaluating the relative energy efficiency of a home or building and making this information known to consumers."

▶ What is this site?

▶ What is Rating & Disclosure?

▶ Where is this happening?

Document Library 

Policy Map 

Policy Graphics 

Energy Label Gallery 

Policy Map

Use our Map feature to find out what kinds of **rating policies** exist worldwide.



Announcements

Boston Mayor Proposes Rating & Disclosure Law



Mayor Menino unveiled a benchmarking ordinance for commercial buildings over

25k square feet and multifamily buildings with 25 or more units. First reporting deadline to be in 2014. Poor performers would have to conduct audits every 5 years. See the [press release](#) and [news story](#).

New Rating & Disclosure Law in Minneapolis



Commercial buildings over 50k

News

We Disclose Calories, Fuel Mileage and Toxic Emissions—Why Not Energy Use?

GreenTech Media
February 23, 2013 [read more](#)

Menino takes on Boston buildings' energy use

Boston Globe
February 22, 2013 [read more](#)

D.C. lists all buildings subject to energy benchmarking in 2013

Washington Business Journal
February 15, 2013 [read more](#)

BuildingRatingBlog

The First Step to Unlocking Savings in the Multifamily Sector

[Andrea Krucowski](#)
March 1, 2013



The multifamily sector in the U.S. has an estimated potential energy savings of \$9 billion.[1] This potential has largely remained untapped in part... [read more](#)

How DC Crunched the Numbers on Its Own Buildings

[John Anderson](#)
February 19, 2013



In his State of Union address this week, President Obama mentioned that Americans

Resources

- Good starting link: www.buildingrating.org
- Info about IPEEC Project: buildingrating.org/ipeec

