

Madison Benchmarking Ordinance

January 15th, 2014

Madison Benchmarking Ordinance

- **Target Audience**

- Public and Commercial Buildings

- **Goals**

- Reduced city-wide carbon footprint
- Acceleration of energy efficiency
- Market-Driven energy performance
- Energy performance and water use measurement

- **Submission**

- Annual energy use data in Energy Star Portfolio Manager

- **Phased Reporting**

- 1 year grace period

- **Assistance with Implementation**

- City, MGE, Alliant, Mpower, Focus on Energy, WI Green Building Alliance, UW-Extension, SEO, US EPA, IMT, NEMA

Overview of Madison's Benchmarking Ordinance

Energy Benchmarking

- Public and Commercial Buildings \geq 15,000 SF required to track energy consumption
- Multi-Family Residential Rental Buildings > 35 units
- Energy data entered into Energy Star Portfolio Manager (free, web-based)
- Phased implementation based on building size. Benchmark 1 year energy use. Report by:
 - City owned buildings:
starting May 1, 2014
 - Buildings \geq 50,000 SF: **2015**
 - Buildings \geq 15,000 SF: **2016**
 - Multi-Family Rentals > 35 units: **2017**

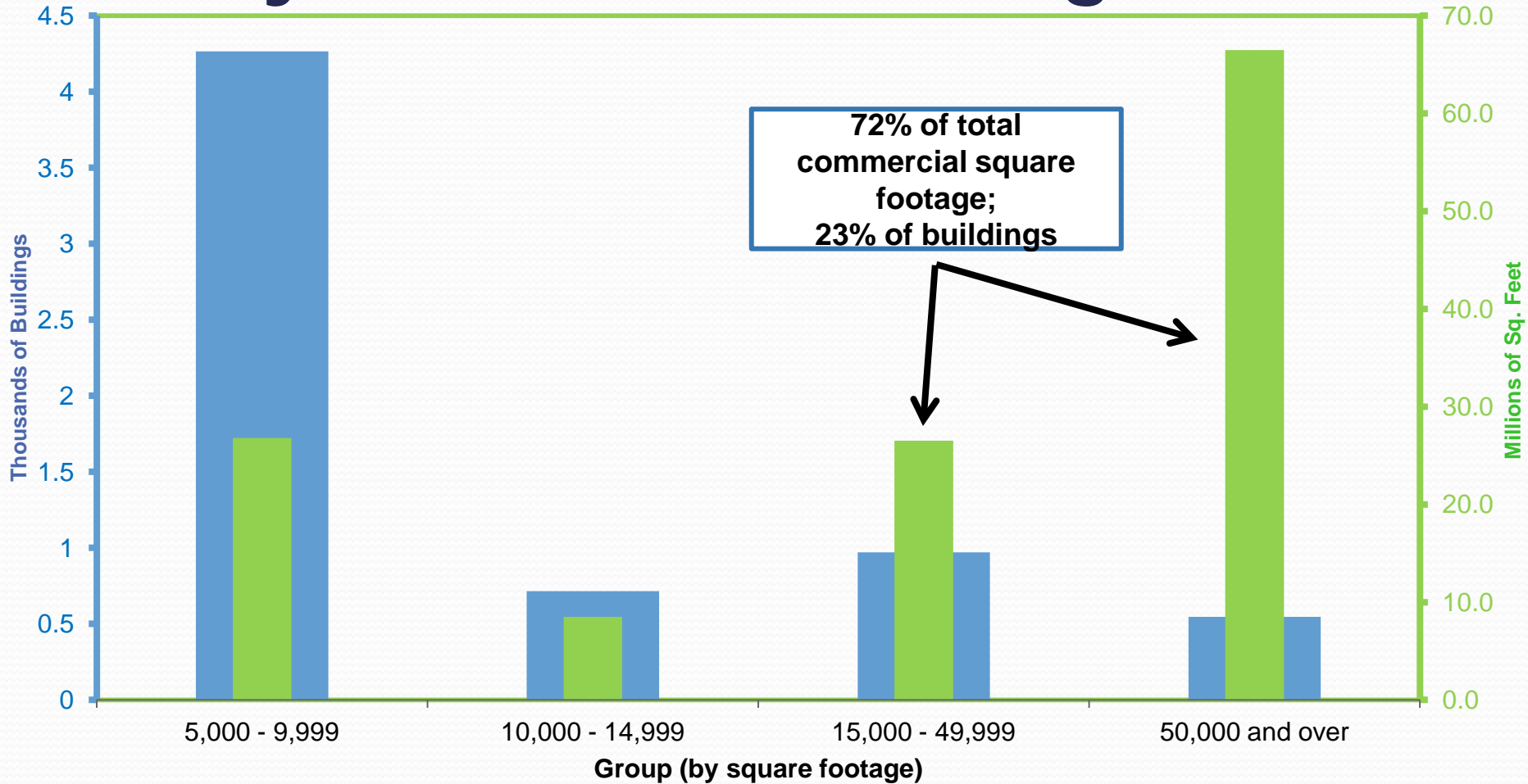
Data Verification

- Every 3 years, building energy data must be verified by an energy professional
- Verification improves data quality and levels the playing field
- Approximate cost based on building complexity and data accuracy: \$500 - \$2,000

Reporting and Disclosure

- Buildings report energy use annually, using automated Portfolio Manager tool
- City reports annually to the public on energy efficiency trends
- City makes energy scores public after 1 year grace period; allows time to improve scores.
- Disclosure schedule:
 - City owned buildings:
starting July 30, 2014
 - Buildings \geq 50,000 SF: **2016**
 - Buildings \geq 15,000 SF: **2017**
 - Multifamily residential buildings > 35 units: **2018**

City of Madison Buildings



Benchmarking commercial buildings over 15,000 sq ft has potential to save **300 billion Btu's** per year

Mandatory State & Local Benchmarking Policies

Jurisdiction	Enacted	Public Buildings	Private Buildings	Disclosure	Utility Requirement
New York	Dec 2012	√		Annual	
Connecticut	July 2011	√			√
Hawaii	July 2009	√			
Ohio	Jan 2007	√			
Denver, CO	Oct 2007	√			
Michigan	April 2005	√			
Chicago, IL	Sep 2013	√	√	Annual	
Boston , MA	May 2013	√	√	Annual	
Minneapolis, MN	Feb 2013	√	√	Annual	
Philadelphia, PA	June 2012	√	√	Annual	
Austin, TX	June 2011	√	√	Transactional	
San Francisco, CA	Feb 2011	√	√	Annual	
Seattle, WA	Jan 2010	√	√	Transactional	√
New York, NY	Dec 2009	√	√	Annual	
Washington	May 2009	√	√	Transactional	√
District of Columbia	July 2008	√	√	Annual	
California	Oct 2007	√	√	Transactional	√

Summary of Programs

	Ordinance Name	Current buildings affected	2014 additions
New York City, NY	2011 Greener, Greater Buildings Plan – Local Law 84	Non-residential and Multi-family >50,000 ft ² and city buildings >10,000 ft ²	
Boston, MA	2010 Boston Climate Action Plan	All city buildings	Commercial buildings >50,000 ft ²
Seattle, WA	2008 Ordinance 123226 and 123993	Non-residential and Multi-family >20,000 ft ² and city buildings >10,000 ft ²	
San Francisco, CA	2010 The Existing Commercial Buildings Energy Performance Ordinance	All buildings >10,000 ft ² and public disclosure of rating for buildings >25,000 ft ²	All buildings >10,000 ft ² and public disclosure for all buildings
Austin, TX	2011 The Energy Conservation Audit and Disclosure Ordinance	All buildings >30,000 ft ²	All buildings >10,000 ft ²
Washington, D.C.	2006 The Green Building Act of	Public Buildings >10,000 ft ² and private buildings >50,000 ft ²	
Minneapolis, MN	2013 City Council Ordinance	Public Buildings >25,000 ft ²	Private commercial buildings >100,000 ft ² w/disclosure in 2015
Philadelphia, PA	2012 Bill No. 120428	Non-residential >50,000 ft ² w/disclosure in 2014	



Overlapping Program Characteristics

1. All use EPA's Energy Star Portfolio Manager
2. Required participation of designated square footages and types of buildings
3. Annual reporting of Portfolio manager data
4. Fines for lack of compliance
5. Integration of benchmarking into bigger picture of energy savings programs
6. Encouraging active participation of utilities and building owners



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Q1: *How does Madison rate for energy efficiency?*

- There is no means to track how Madison buildings rate for energy efficiency.
- With benchmarking, the City will be able to: establish this metric, analyze the data, know where to focus \$\$ and assistance, and report on progress towards the goals in the Madison Sustainability Plan.

Data of Energy Star Certified Buildings

- | | | | |
|---------------|-----------|-----------|------------|
| • Madison | 2012 (5) | 2013 (5) | Total (10) |
| • Minneapolis | 2012 (32) | 2013 (38) | Total (45) |

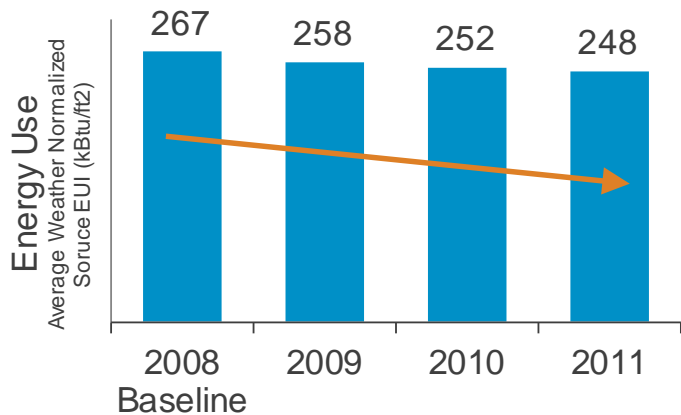
Madison Buildings entered in Portfolio Manager (386)* includes State & UW (excludes schools & city)

- distributed across building types
- increased 2010-2013

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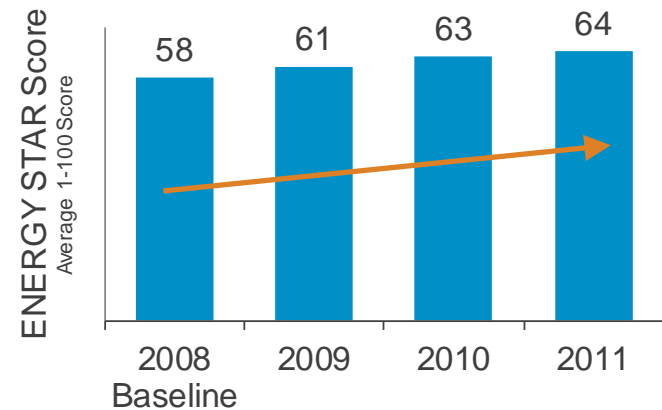
Q2: *What is the control group for the EPA study for the 2.5% energy improvement in 35,000 buildings?*

- The EPA study was an analytical study of building users' energy usage from a baseline year; therefore, there is no control group.



7% savings

in weather normalized source EUI



6 point increase

in ENERGY STAR score

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Q3: What is the cost of compliance to the building owner?

- Portfolio Manager is free
- The time taken to collect and enter the data and receive a score is approximately 4-12 hours

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Q4: *What are the penalties for noncompliance in other cities?*

- Penalties are similar to what is being proposed.
- Several cities include a clause where the administrator for the ordinance can waive the enforcement/fine structure.
- Many cities also granted exceptions for the first 1-2 years.

Q4b. What are the compliance rates?

- Washington DC met 80% compliance rate in 2013
- NY compliance rate of 75% in both 2011, 2012
- Seattle achieved 90% compliance rate

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Q5: What is MG&E's & Alliant's position on the ordinance?

- Please refer to testimony from MG&E representative.
- In other cities with benchmarking, the utility is typically on board and works together to ensure smooth implementation that minimizes the effort of the building owner.

Note: utilities don't necessarily have energy use per building information - rather per meter and customer

- Utilities work with a portion of their customers
- Utility financial model- make and sell power: ACEEE study Energy Efficiency Programs & Utility Profits Can Go Hand in Hand

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Q6: What is the benefit to Madison's energy companies?

- Small business expansion & job creation

- **When clients get their benchmarking results, they start asking questions – ‘Why did my building get this score and what can I do to improve it?’” – Lindsay Napor McLean, Exec. VP and COO, Ecological**

- **Business up by 30%** at BuildingWise (San Francisco) and Sustainable Real Estate Solutions (Conn.)
- Ecological has **doubled staff and added 400 clients** in past 12 months
- **Benchmarking policies resulting in direct job growth** and expected to fuel and sustain the pipeline for audits, RCx, operational improvements and retrofits

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Q7. What is the financial value of benchmarking?



For a 500,000 square foot office building:

Cumulative energy cost savings of \$120,000

Increase in asset value of over \$1 million



For a medium box retailer with 500 stores:

Cumulative energy cost savings of \$2.5 million

Increase in sales of 0.89%



For a full service hotel chain with 100 properties:

Cumulative energy cost savings of \$4.1 million

Increase in revenue per available room of \$1.41

2.5% annual savings = dollars that can be reinvested in existing businesses

“American Family has recognized more than \$1.7 million in savings in our Madison buildings alone.”

“Urban Land Interests benchmarked the US Bank Plaza before and after strategic renovations. We cut energy usage by 35-40% for an estimated annual saving of \$250,000...”

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Q8: What will the city do to respond to building owners' energy efficiency needs?

- Some of the initiatives being discussed include:
 - Provide educational programming
 - Create a call center/helpdesk
 - Maintain a city website
 - Develop a list of approved energy companies to assist the building owners
 - Pro-bono data verification for building owners with limited resources
 - EPA assistance with Portfolio Manager
 - Partner with organizations and businesses to train, educate and assist
 - Assist with identifying \$\$incentives for energy upgrades

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•Q9: *How many cities have voluntary programs?*

Voluntary programs- Scope & objective: small group of motivated businesses; highlight energy leaders/develop-share best practices

Better Buildings Challenge (BBC)

- Publicly commit to a portfolio-wide energy savings goal of at least 20% over 10 years
- Announce, initiate, and complete at least one showcase project
- Share building level energy performance & implementation practices
 - Milwaukee: 127 buildings (10 business, 117 municipal). Will evaluate Benchmarking Ordinance in 2015 (Refresh MKE plan)
 - Chicago: 14 BBC buildings; 3,500 after mandatory ordinance

Mpower Madison Businesses ChaMpion Program

Commit to reduce use of energy, water, transportation and waste through completed projects.

- Madison: 70 businesses; 1,500 with ordinance

Q9. *How have these programs fared in other cities?*

- Savings ranged from 1,000-3,000Mbtus per building

Seattle's Latest Benchmarking Data Shows Where Efficiency Programs Should Focus



The city's buildings are 18 percent more efficient than the national average—but much more can be done.

Katherine Tweed
January 8, 2014

Solving Seattle's ENERGY PUZZLE

The City of Seattle is helping building owners solve the puzzle of how their property's energy use compares to others and points the way to millions of dollars in energy savings in a new benchmarking report.

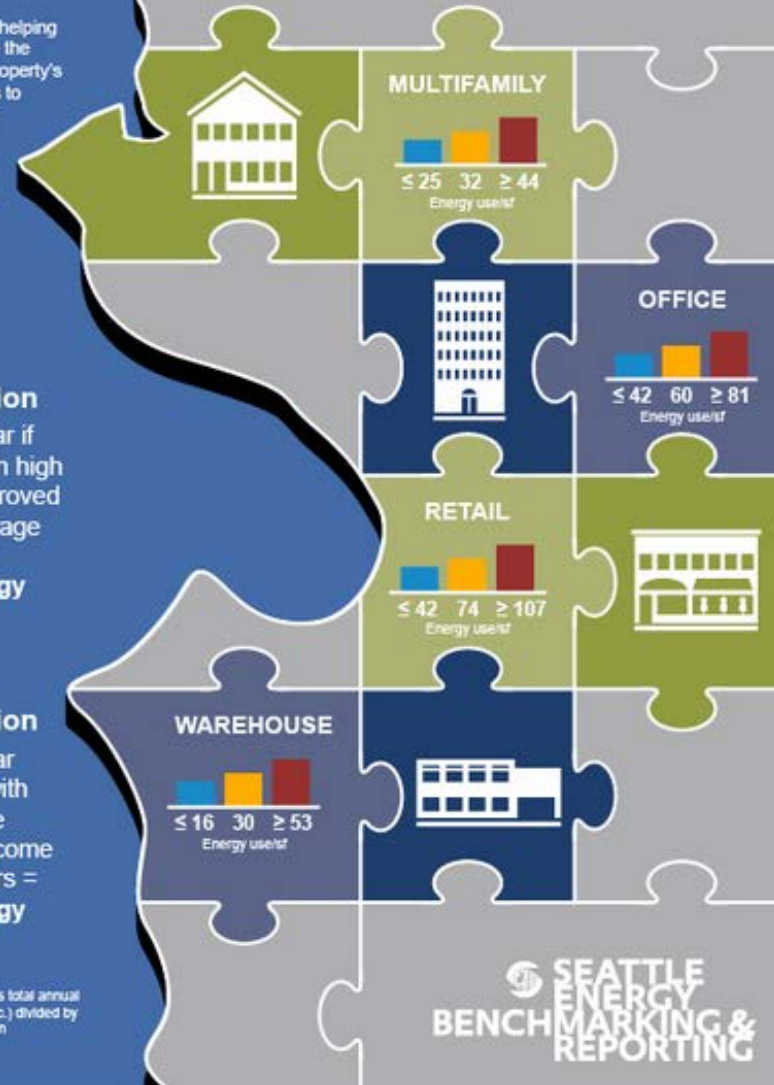
\$55 Million
Saved each year if all buildings with high energy use improved to become average energy users = **25% total energy savings**

\$90 Million
Saved each year if all buildings with high energy use improved to become low energy users = **42% total energy savings**

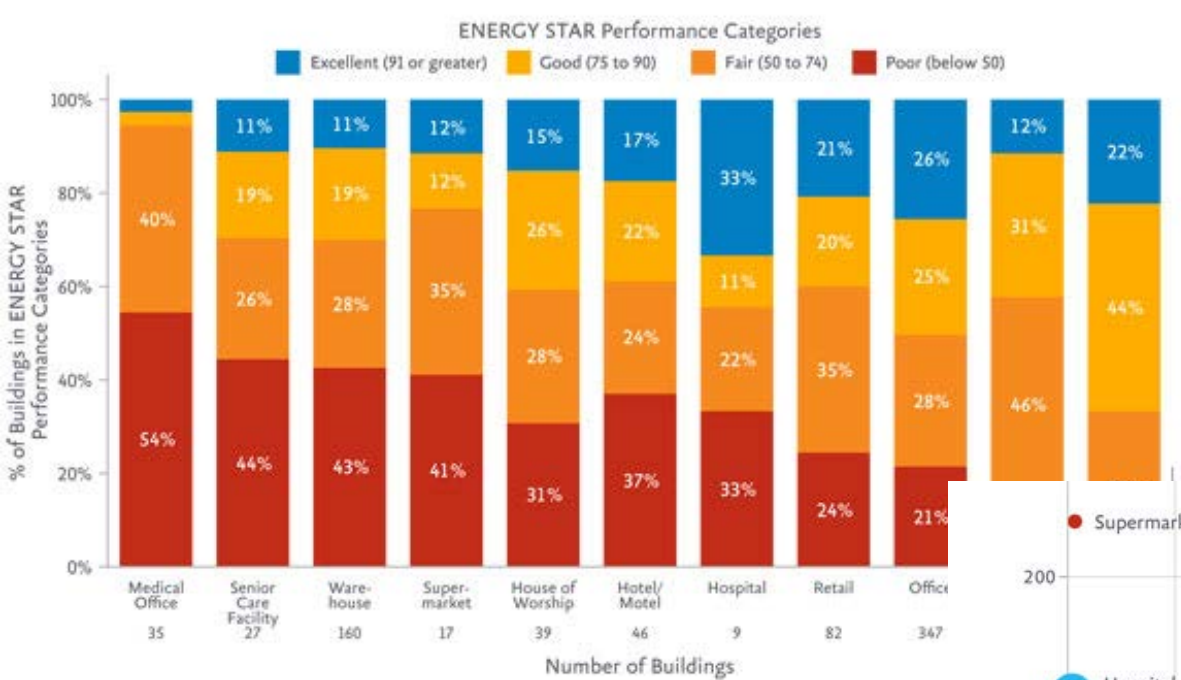
*Energy Use Intensity (EUI) is total annual energy use (electric, gas, etc.) divided by gross floor area. Units shown are kBtu/square foot.

How Does Your Building Stack Up?

Energy use per square foot, or EUI*, is used to compare buildings with similar uses but different sizes. Seattle analyzed more than 2,600 buildings that are benchmarking energy use. Below are **low**, **average** and **high** EUIs for four building types.



SEATTLE ENERGY BENCHMARKING & REPORTING



Seattle Benchmarking Results

Figure 13: Percent of Buildings in each ENERGY STAR Score Performance Category by Building Type

- 900 buildings performed better than national average
 - 41% of those scored 75+
- Low income and affordable housing had lower EIUs than other multifamily
- Medical offices, warehouses and senior facilities scored low
- Midcentury buildings have lowest scores, not older historic buildings

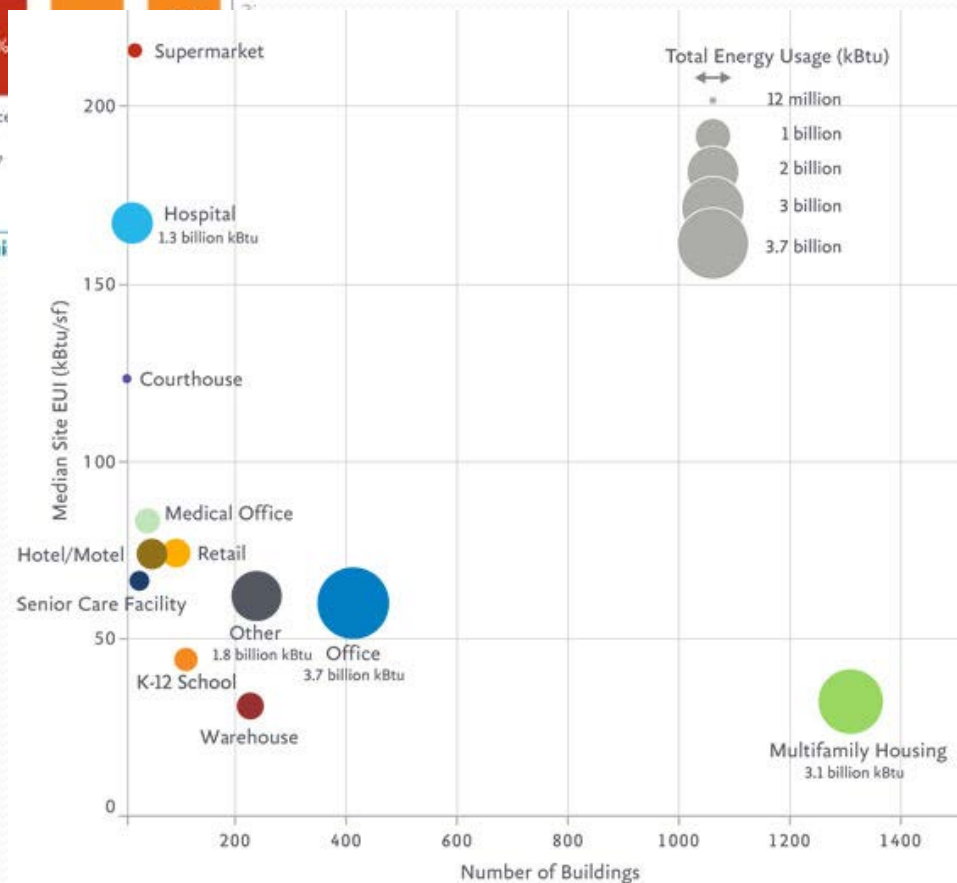


Figure 10: Median 2012 Site EUI by Number of Buildings