Benchmarking and Transparency Policies:
Current Trends and Challenges

ACEEE Market Transformation Symposium
April 22, 2015 | Washington DC
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IMT
INSTITUTE
FOR MARKET
TRANSFORMATION

Institute for Market Transformation

- Design, adoption and implementation of building energy efficiency policies
- Policy advisor to state and local governments, federal agencies, and industry groups

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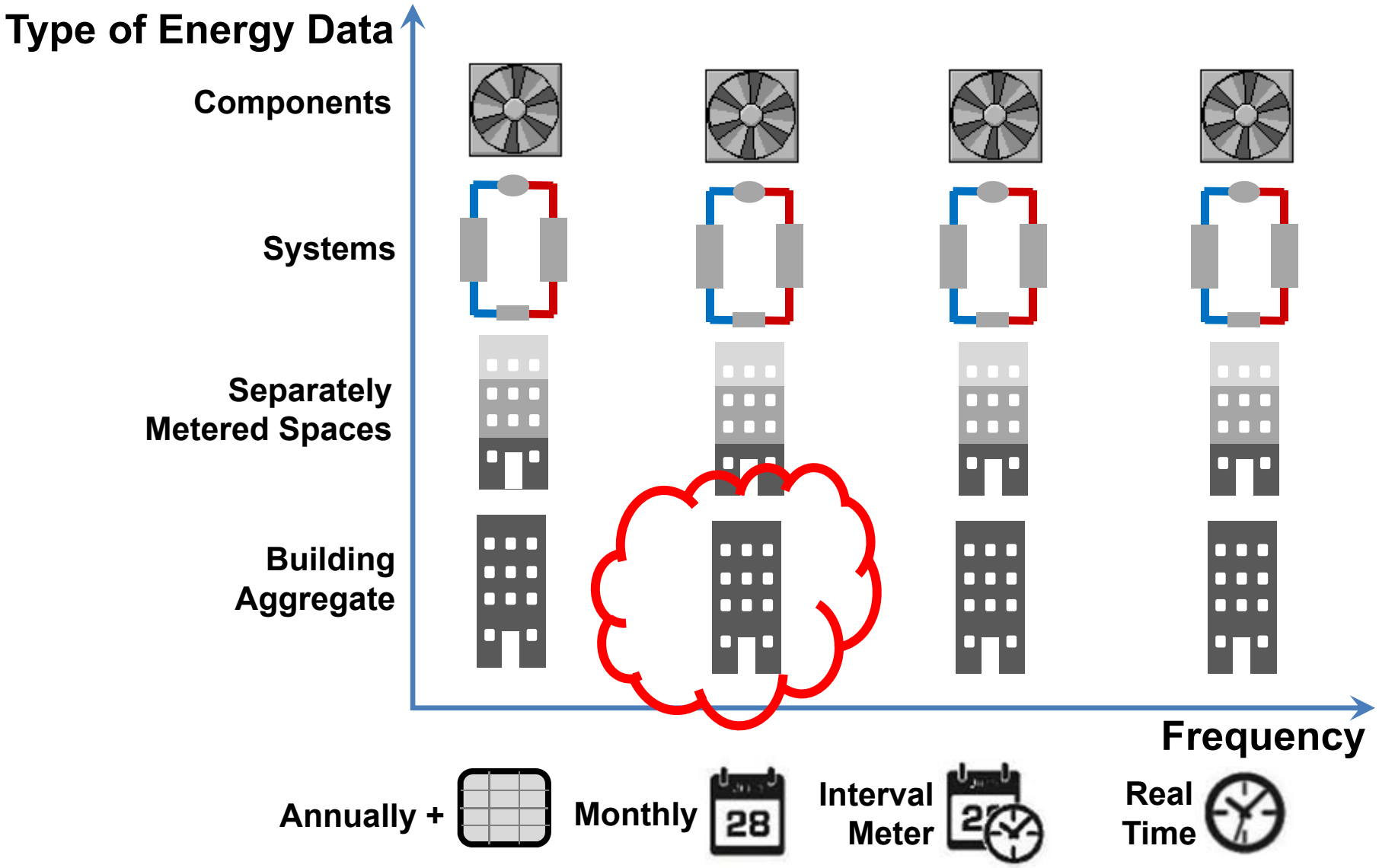
Energy Benchmarking and Transparency

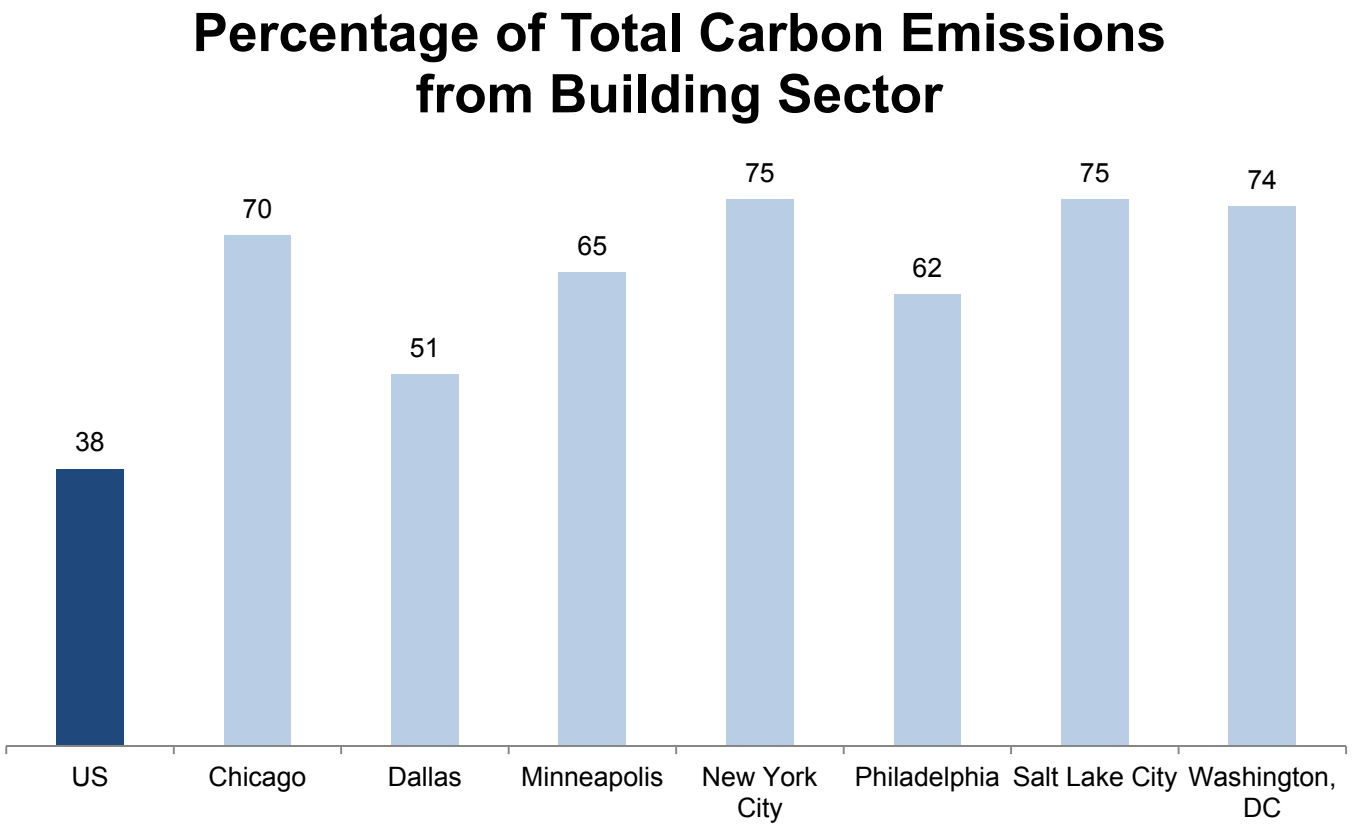
Granularity of Energy Data



Observations and Trends

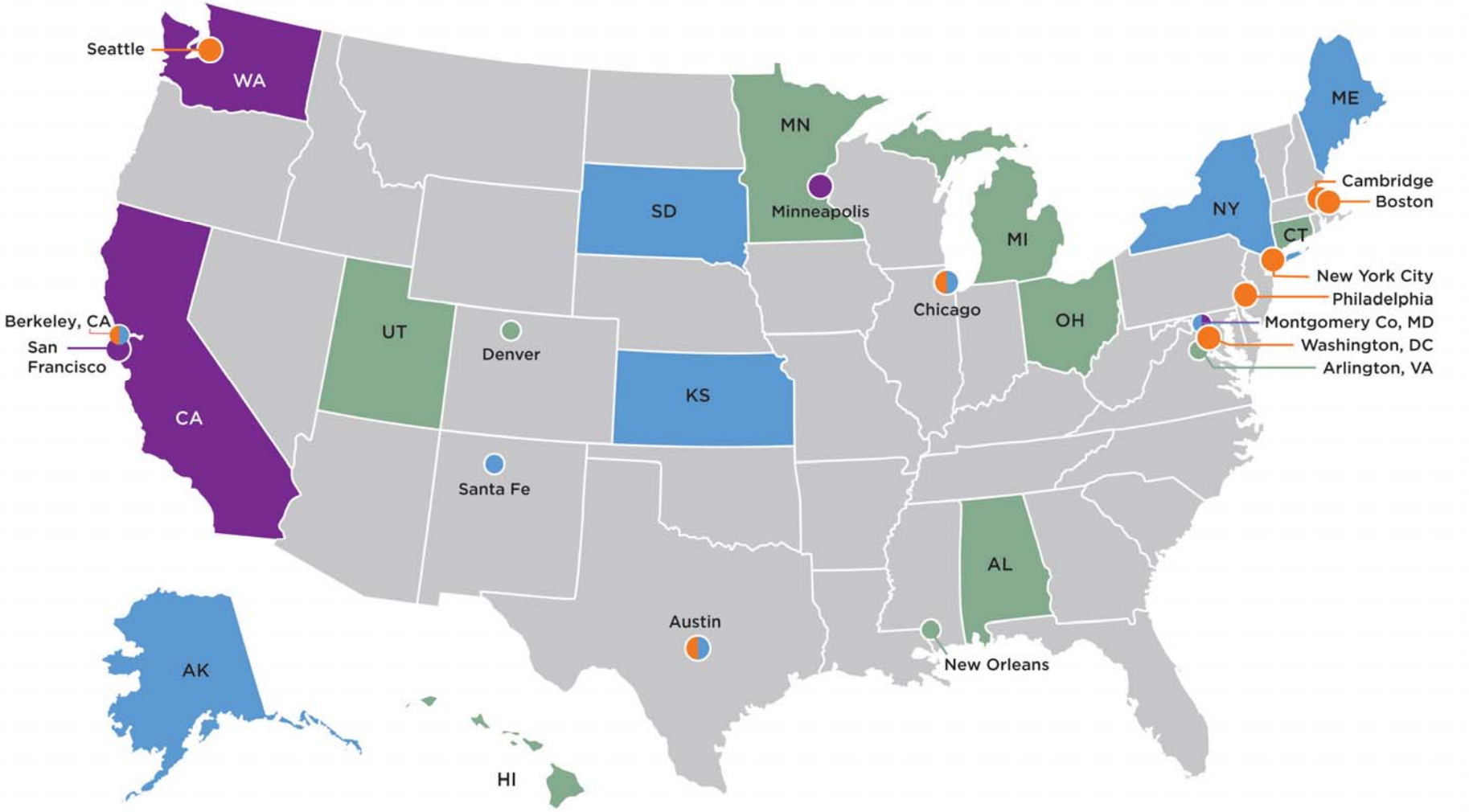
- More cities are considering locally appropriate policies and programs that can drive EE in buildings at scale
- There is a recognition of the need to build on Benchmarking and Transparency policies in order to achieve deep EE savings
- There is a desire to have more harmonization of these policies.
- A vast amount of data on building performance is being unlocked.
- We need to better understand how to use that data to drive the actions that lead to EE savings
- Emphasis on improving data quality and compliance

Building Sector Greenhouse Gas Emissions



The building sector is the dominant user of energy and generator of CO_2 emissions in the U.S. This is more true in cities due to density.

Benchmarking and Transparency Policies



Building Rating
SHARING TRANSPARENCY FOR A MORE EFFICIENT FUTURE

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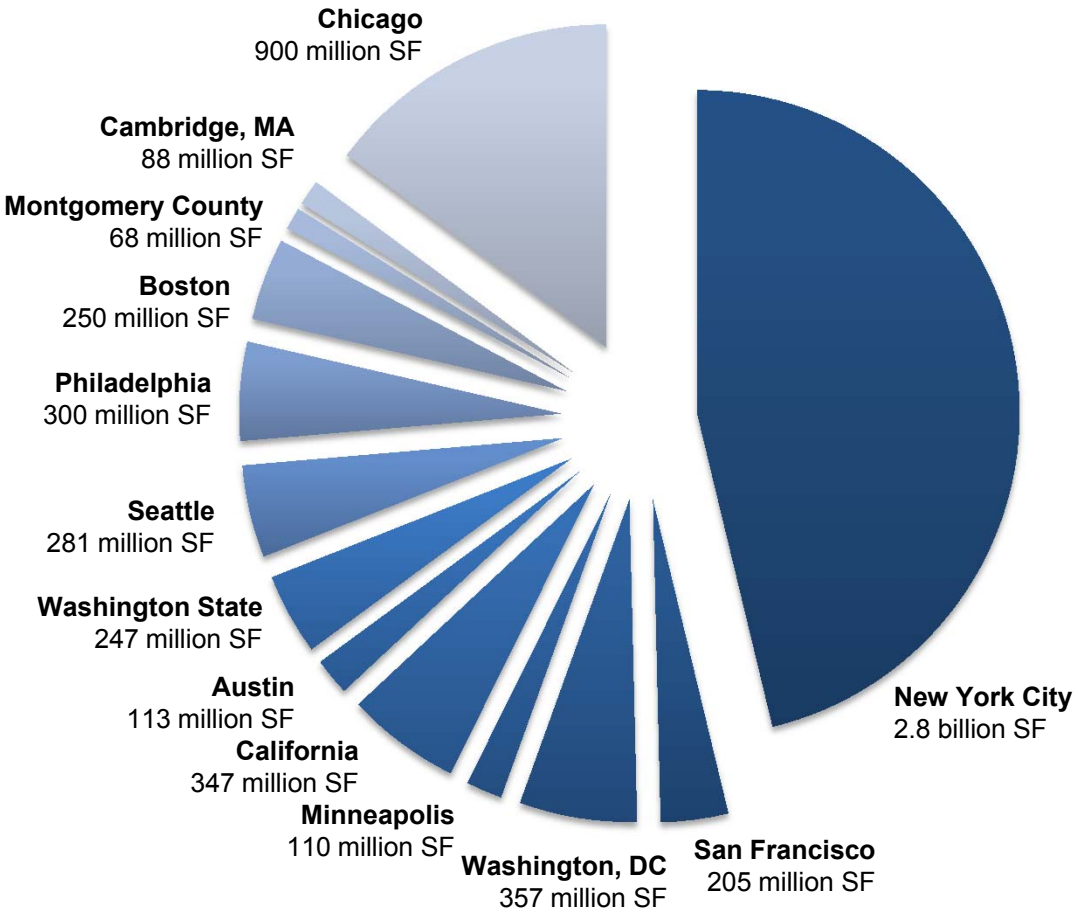
5.8 Billion square feet of building area covered annually by benchmarking and transparency laws

Building Area (in Square Feet) Covered Annually



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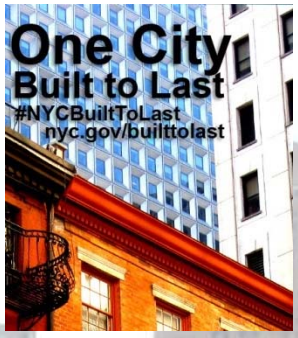
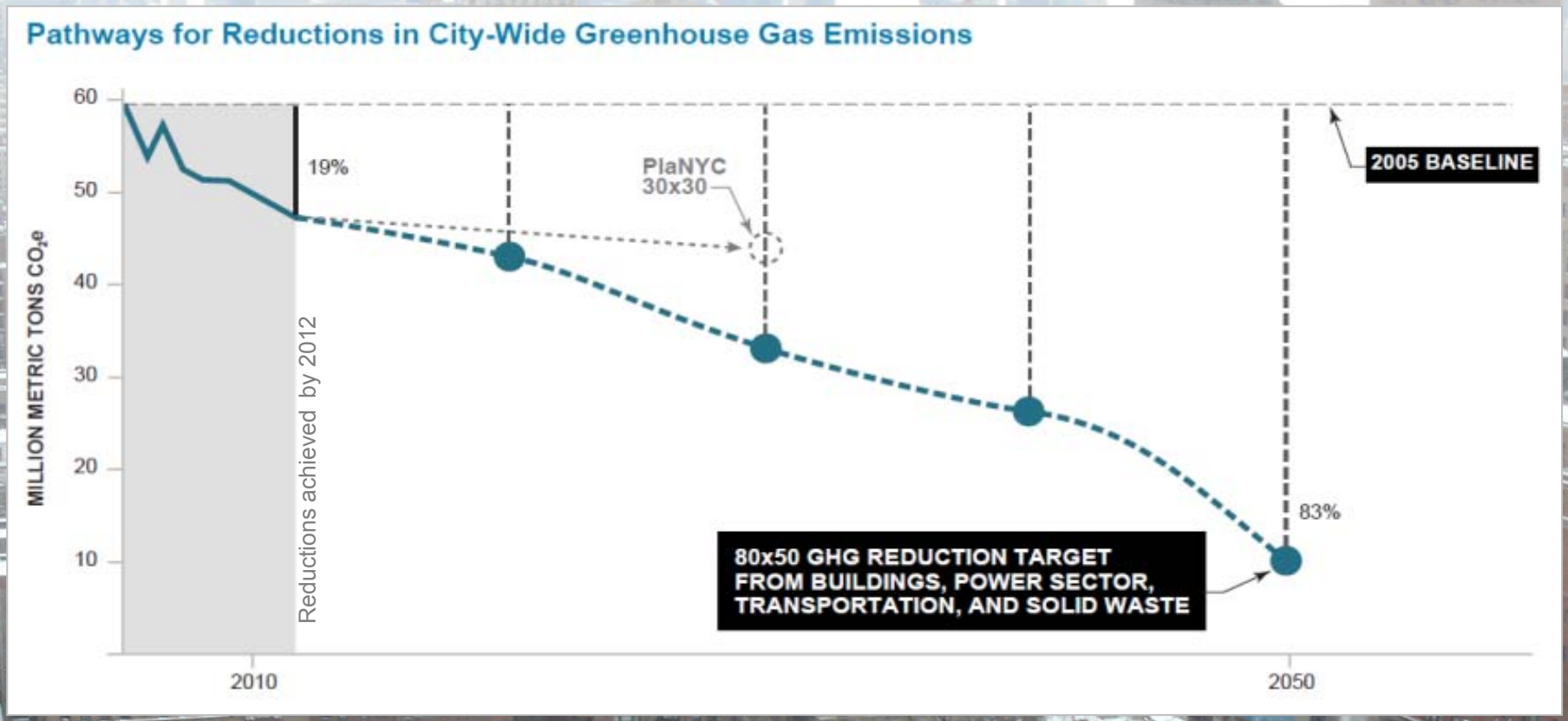
NYC's Goal: 80% by 2050

- NYC committed to reducing emissions 80% from 2005 levels by 2050 ("80x50")
- The City will invest in renewable sources and energy efficiency on a long-term path away from fossil fuels.

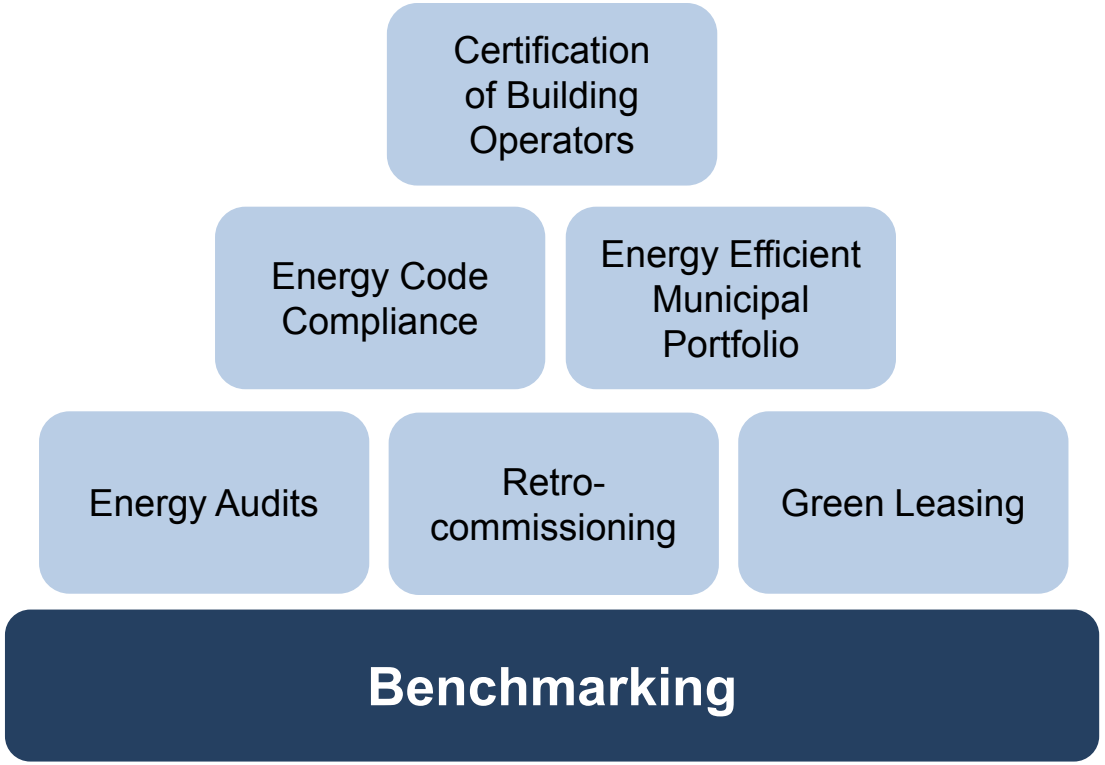




Source: NYC Mayor's Office of Sustainability

Developing a Comprehensive Approach to Energy Efficiency

Benchmarking often serves as the foundation for a complimentary suite of energy efficient policies



The City Energy Project:
Addressing Climate Change at the Local Level

CITY ENERGY
A JOINT PROJECT of NRDC + IMT

NRDC
THE EARTH'S BEST DEFENSE

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Building Benchmarking Policy Elements

Legislation				Building Type & Size Threshold			Disclosure				Rating System		Additional Elements		
Jurisdiction	Short Name	Enacted	First Compliance Deadline	Municipal	Commercial	Multifamily	To Gov't	On Public Website	Time of Transaction	To Current Tenants	Energy Star	Other	Utility Req't	Water Use Tracking	Additional Requirements
Austin	Energy Conservation Audit & Disclosure (ECAD) Ordinance	Nov 2008	June 2011	✓	10K SF+	Audits	✓	-	Buyers	-	✓	ACLARA	-	-	Audits & mandatory upgrades for multifamily buildings
Boston	Boston Energy Reporting and Disclosure Ordinance	May 2013	May 2014	✓	35K SF+	35+ units or 35K SF+	✓	✓	-	-	✓	-	-	✓	Periodic energy assessments and/or actions
Cambridge	Building Energy Use Disclosure Ordinance	July 2014	December 2014	10K SF+	25K SF+	50+ units	✓	✓	-	-	✓	-	-	✓	-
Chicago	Chapter 18-14. Building Energy Use Benchmarking Ordinance	Sept 2013	June 2014	50K SF+	50K SF+	50K SF+	✓	✓	-	-	✓	-	-	-	Verification of benchmarking data by licensed professional 1st year, then every 3 years
District of Columbia	Clean and Affordable Energy Act of 2008	July 2008	April 2013	10K SF+	50K SF+	50K SF+	✓	✓	-	-	✓	Energy Star Target Finder	-	✓	-
Minneapolis	Chapter 47.190. Commercial Building Rating and Disclosure Ordinance	Jan 2013	May 2014	25K SF+	50K SF+	-	✓	✓	-	-	✓	-	-	✓	-
New York City	Local Law 84 (additional requirements in LL 87, LL 88)	Dec 2009	August 2011	10K SF+	50K SF+	50K SF+	✓	✓	-	-	✓	-	-	✓	ASHRAE level II audits & RCx (LL 87), lighting upgrades & submetering (LL 88)
Philadelphia	§9-3402 of the Philadelphia Code	June 2012	October 2013	50K SF+	50K SF+	-	✓	✓	Buyers, Lessees	-	✓	-	-	✓	-
San Francisco	Existing Commercial Buildings Energy Performance Ord.	Feb 2011	October 2011	10K SF+	10K SF+	-	✓	✓	†Buyers, Lessees, Lenders	✓	✓	-	†	-	ASHRAE level I or II audits or RCx every 5 years
Seattle	CB 116731	Jan 2010	October 2011	20K SF+	20K SF+	20K SF+	✓	-	†Buyers, Lessees, Lenders	✓	✓	-	✓	-	-

BuildingRating

SHARING TRANSPARENCY FOR A MORE EFFICIENT FUTURE

What would you like to do today?

- SEARCH FOR DOCUMENTS
- LEARN ABOUT JURISDICTIONS
- COMPARE POLICIES
- GET UPDATES
- ADDITIONAL RESOURCES

Latest Updates

Announcement

New Building Rating Website Offers a

Announcement

AB 1103 Alert! CEC Postpones Enforcement

Blog Post

Beyond the Gridlock: How

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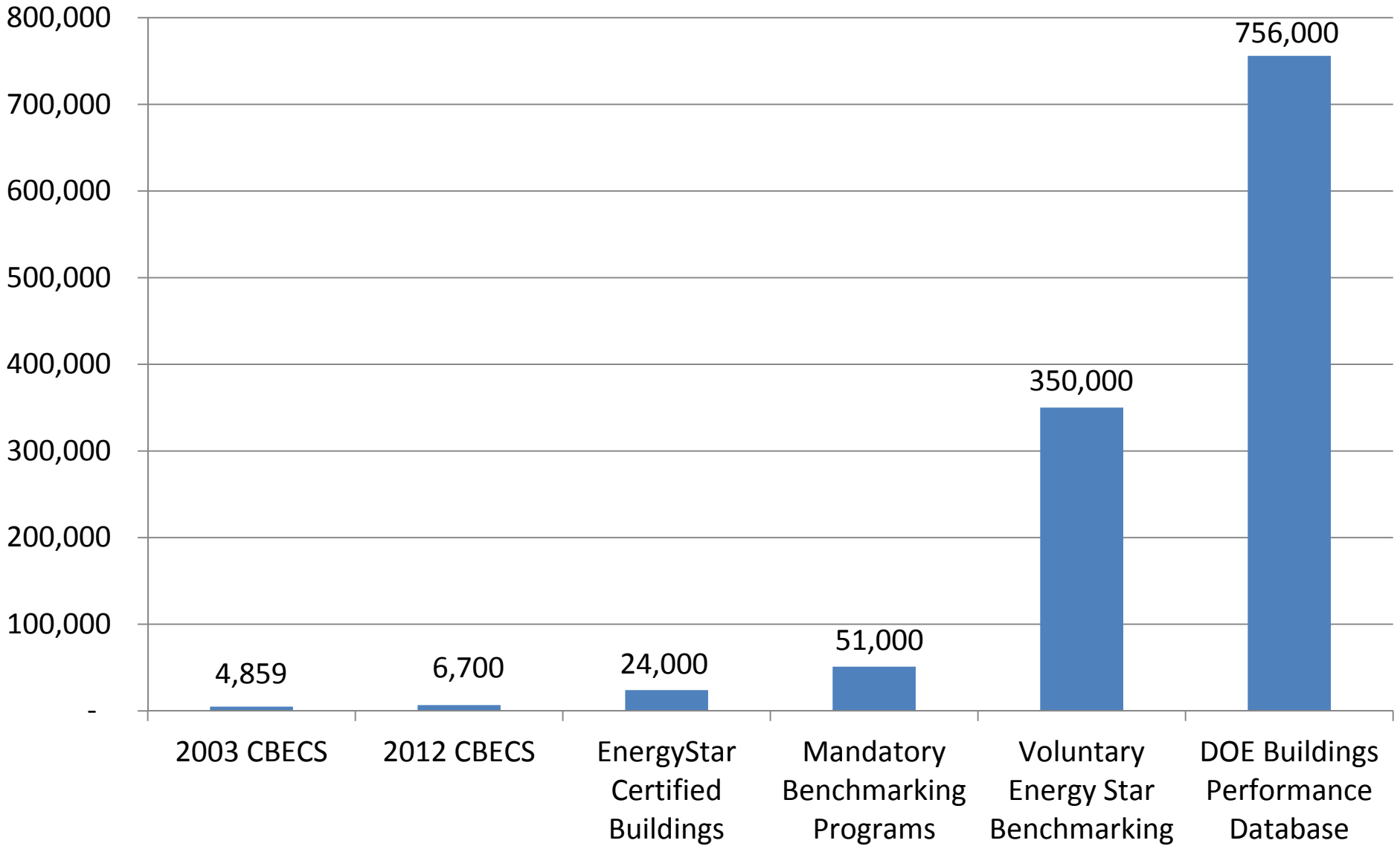
Growth in Building Performance Data Sets



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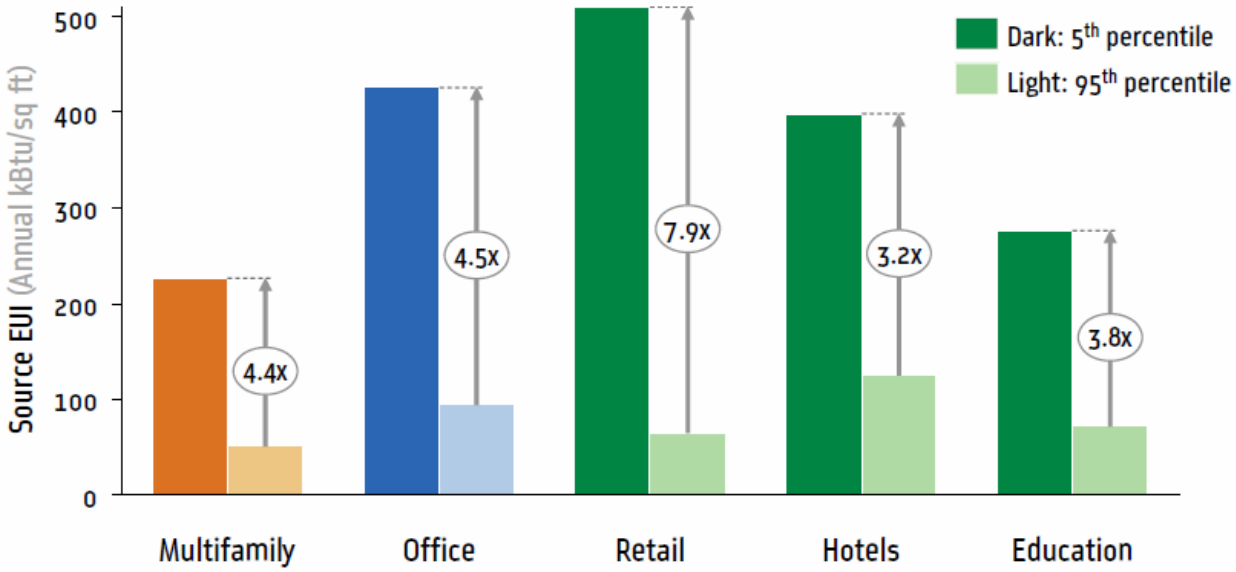
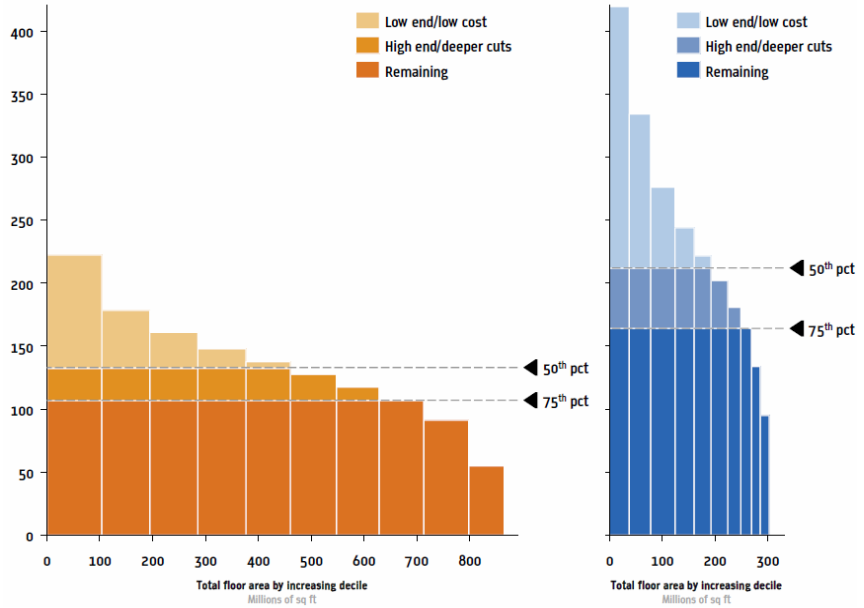
Energy Intensity Findings in New York City



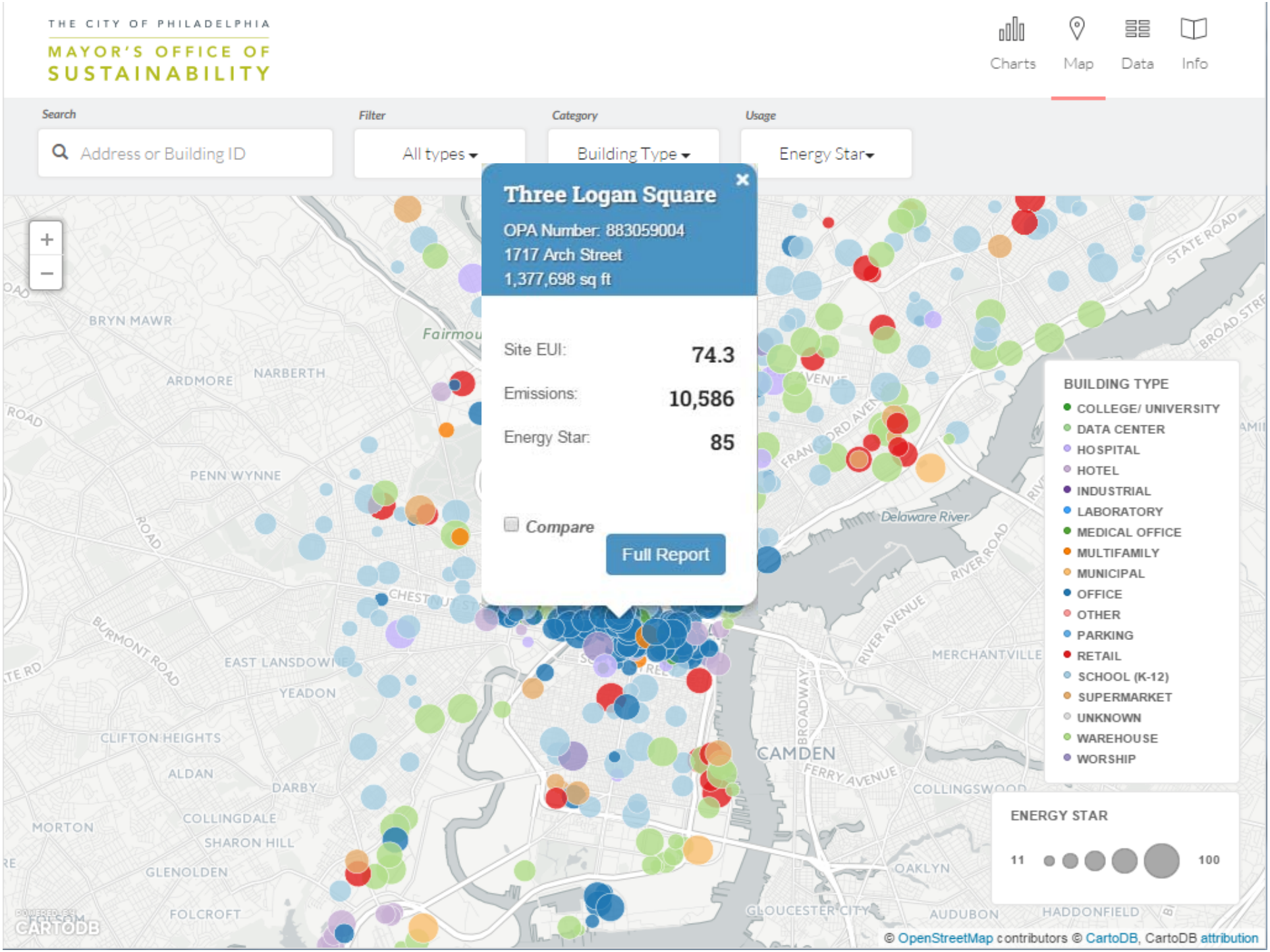
Credit: New York City Local Law 84 Benchmarking Report, August 2012

The poorest performing buildings **use 4x to 8x the energy** of the best performing buildings.

By improving the poor performers **citywide energy reductions of 18% to 31%** could be achieved.



Annual Reports


THE CITY OF PHILADELPHIA
MAYOR'S OFFICE OF SUSTAINABILITY
Charts
Map
Data
Info
Search
Address or Building ID
Filter
All types
Category
Building Type
Usage
Energy Star
Three Logan Square
OPA Number: 883059004
1717 Arch Street
1,377,698 sq ft
Site EUI: 74.3
Emissions: 10,586
Energy Star: 85
Compare
Full Report
BUILDING TYPE
COLLEGE/ UNIVERSITY
DATA CENTER
HOSPITAL
HOTEL
INDUSTRIAL
LABORATORY
MEDICAL OFFICE
MULTIFAMILY
MUNICIPAL
OFFICE
OTHER
PARKING
RETAIL
SCHOOL (K-12)
SUPERMARKET
UNKNOWN
WAREHOUSE
WORSHIP
ENERGY STAR
11
100
BRYN MAWR
ARDMORE
NARBERTH
PENN WYNNE
EAST LANSDOWNE
YEADON
CLIFTON HEIGHTS
ALDAN
DARBY
COLLINGDALE
SHARON HILL
MORTON
GLENOLDEN
FOLCROFT
CAMDEN
MERCHANTVILLE
COLLINGSWOOD
OAKLYN
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Potential Sources of Inaccurate Data

- Energy consumption data
  - Data entry errors
  - Units misapplied
  - Missing meters
  - Inclusion/exclusion of required loads

- Building/operational data
  - Data entry errors
  - Inaccurate building area
  - Building occupancy not updated
  - Inadequate understanding of Portfolio Manager

Improving Data Quality and Compliance

- Possible strategies
  - Automated uploading of utility data
  - Automated error checking (through PM or SEED)
  - Manual review and verification
  - Certifications and training
  - Enhanced / proactive technical support

CLEANING STEPS - TOTAL DATA SET	REMOVED	PROPERTIES REMAINING
Covered Buildings List	--	13,196
Original dataset based on submittals	--	14,144
(-) Zero square footage	84	14,060
(-) Missing or zero EUI	1,251	12,809
(-) Duplicates	719	12,090
(-) EUI below 5 or above 1,000 kBtu/sq ft	203	11,887
(-) Removal of top and bottom 1%	295	11,592
(-) Flagged data points	85	11,507

NYC Benchmarking Report, Sept 2014: 19% of data points were thrown out

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