Energy Disclosure & Audit Policies

Energy Efficiency Strategy Webinar Series

MIT CoLab

Green Economic Development Initiative

June 3 2013

Credit: NullO. Creative Commons.

Agenda

- **Jessica Lawrence –** Program Manager - Building Energy Performance Policy Group, Institute for Market Transformation.

- **Tiffany Broyles Yost** – Director of Programs, Urban Green Council.

- **[Questions]**

- **Barry Hooper** – Green Building Program, City of San Francisco (joining call at 4:15 EST)

- **Questions**.

MIT CoLab

Building Energy Performance Policy

U.S. Policy Overview

June 3, 2013 | MIT CoLab Energy Audit and Disclosure Policies Webinar
Emerald Cities Collaborative

Jessica Lawrence
Program Manager, Building Energy Performance Policy
Institute for Market Transformation
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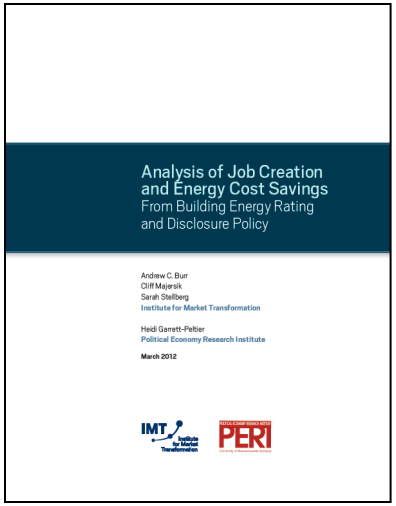
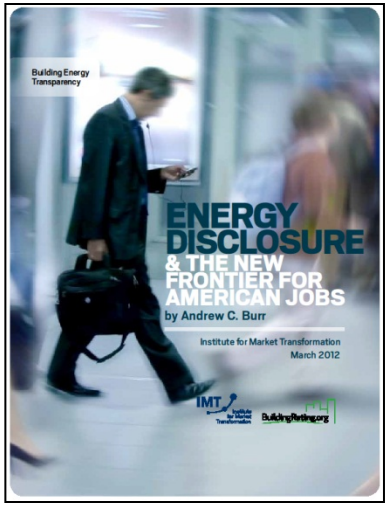
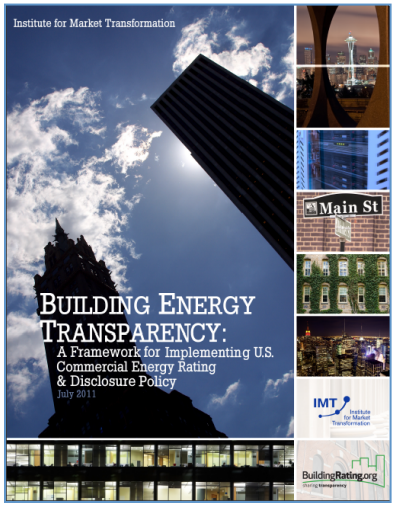
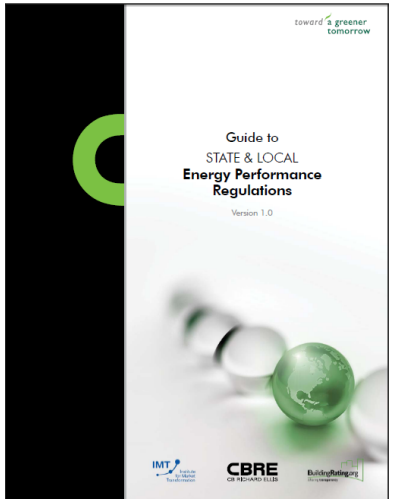
- National best practices center for the design, adoption, and implementation of building energy performance policies in cities.
- Hands-on experience assisting cities in preparation and execution of policies (close partners with NYC and DC)
- Leader on building code compliance, and supporter of strong model code development and adoption
- Experts on energy efficiency finance policy and green leasing
- U.S. hub for the Global Buildings Performance Network, an international best practices network for building energy efficiency, and DATA Alliance, a partnership with large building owners

IMT
INSTITUTE
FOR MARKET
TRANSFORMATION

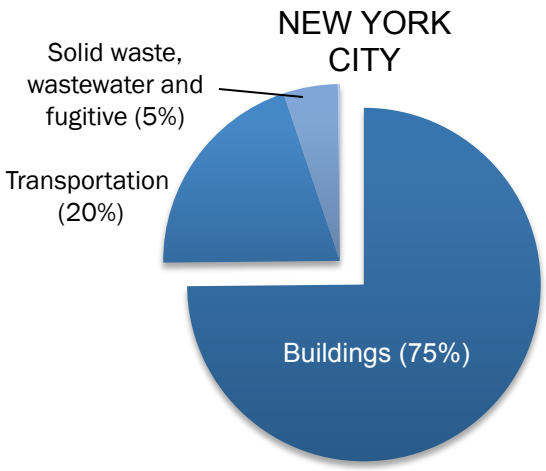


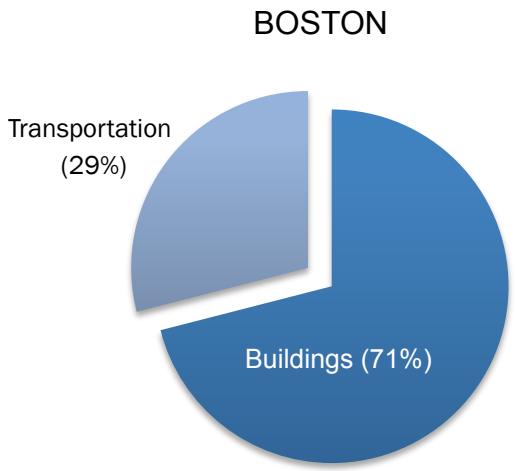


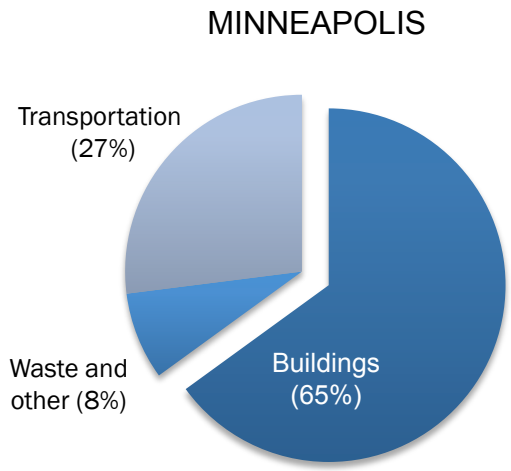


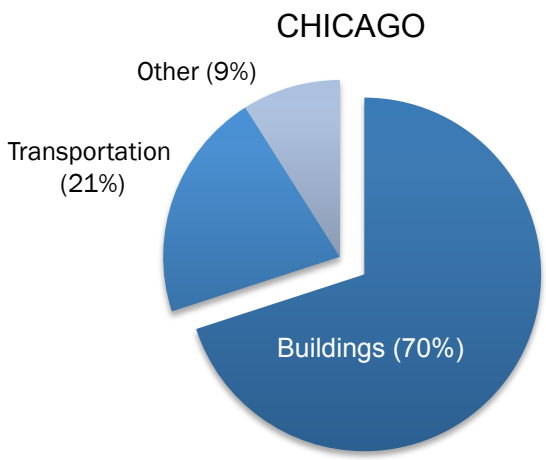


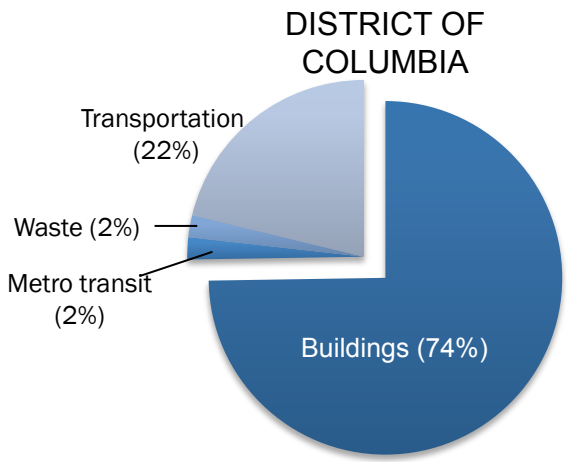
WHY FOCUS ON BUILDINGS

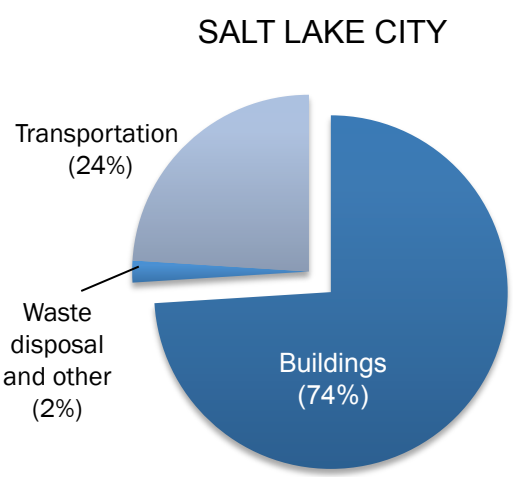












SOURCES: *PlaNYC* report; Chicago Climate Action Plan; Boston Climate Action Plan, 2011 update; District of Columbia 2006 Greenhouse Gas Emissions Inventory; Salt Lake City Community Carbon Inventory, 2010; City of Minneapolis Greenhouse Gas Inventories, 2006-2010.

WHY BUILDING ENERGY PERFORMANCE POLICY

- Our EE strategy for existing buildings is not resulting in the necessary scale

  - Patchwork of incentives, rebates, and voluntary programs will not create scale

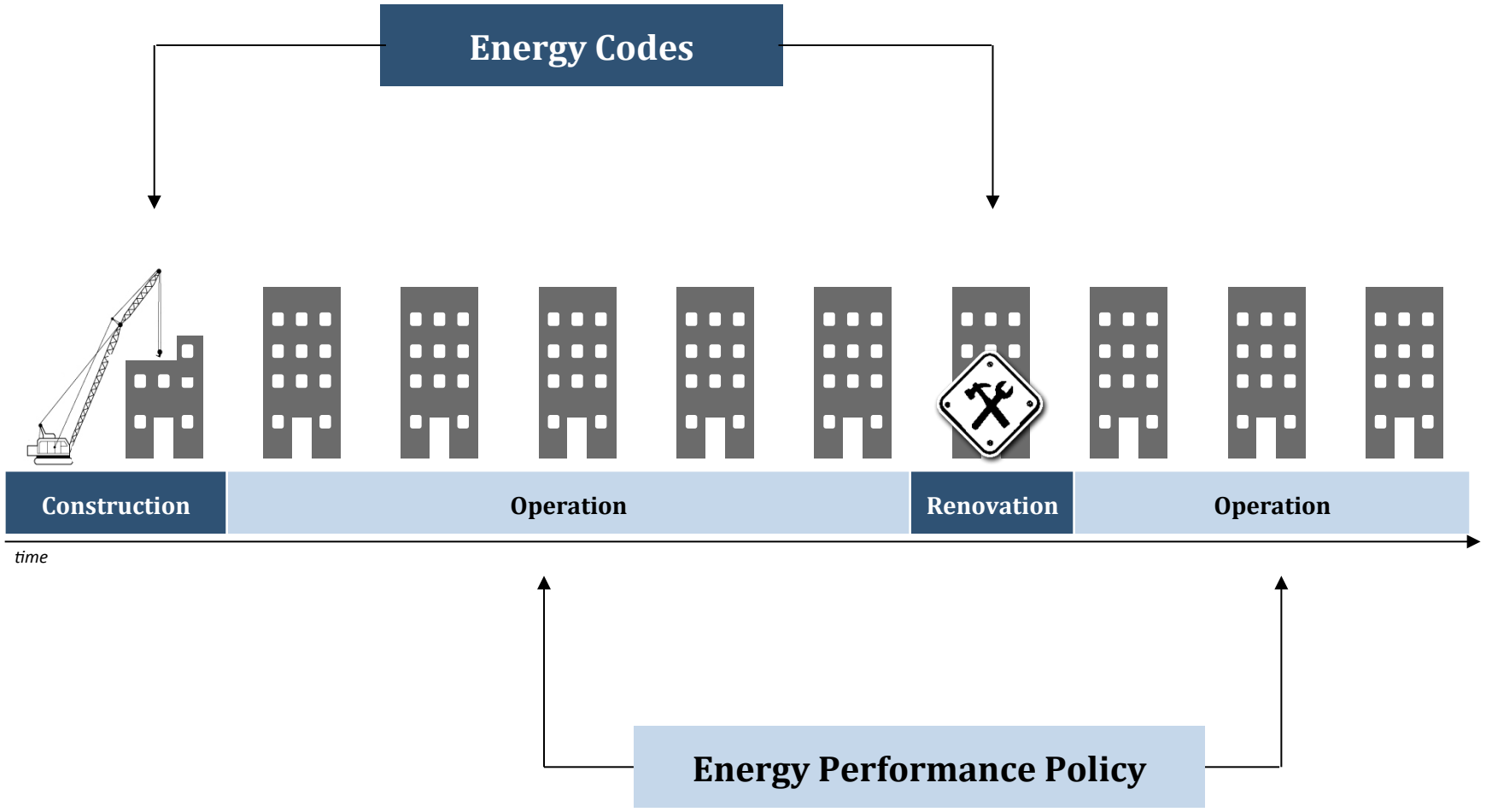
- Policy solutions must create market demand

  - Transparency and information has political strength

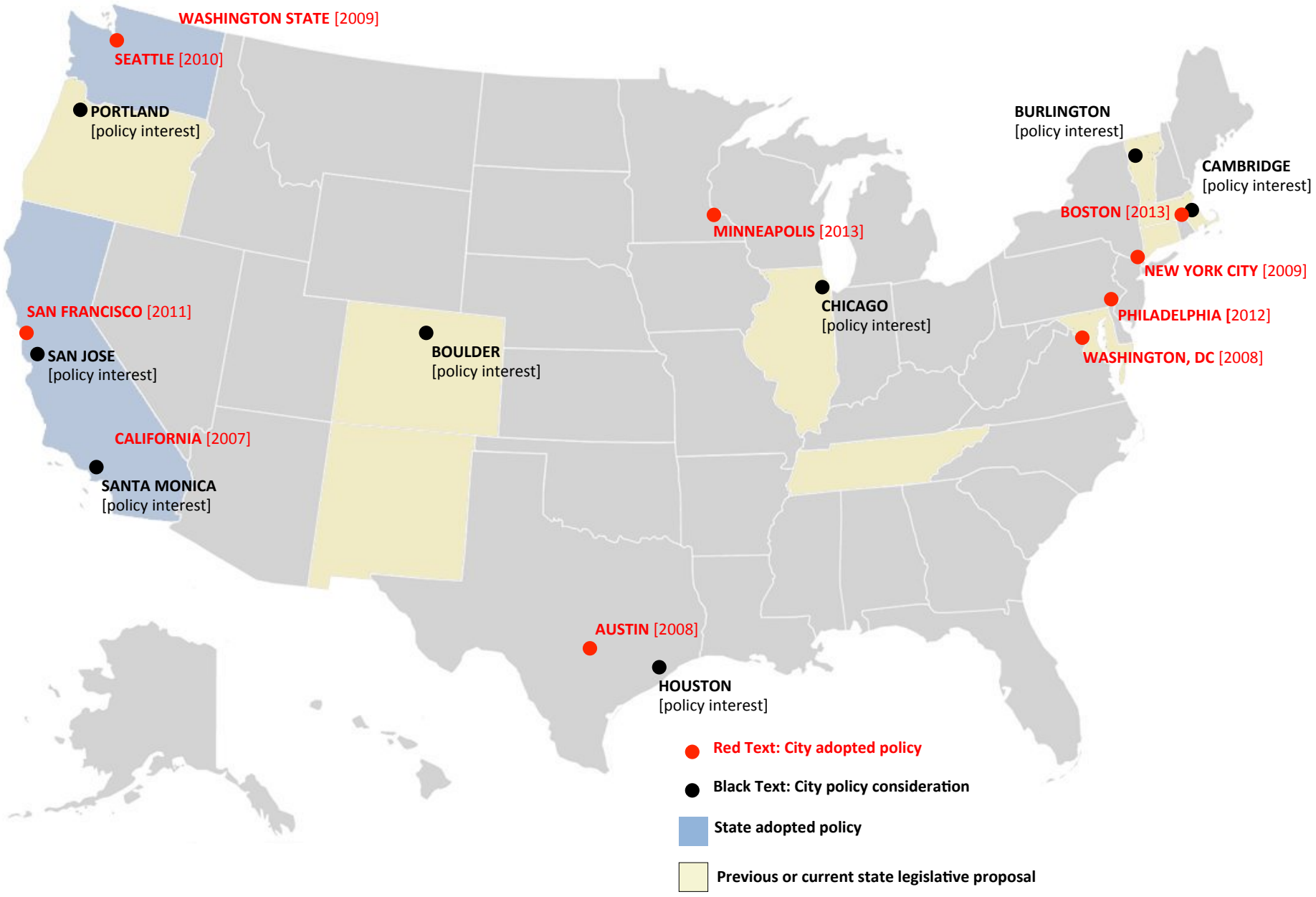
- The policy landscape is changing rapidly

  - Local governments moving beyond new buildings

Building Energy Performance Policy Fills the Gap



COMMERCIAL BUILDING POLICY LANDSCAPE



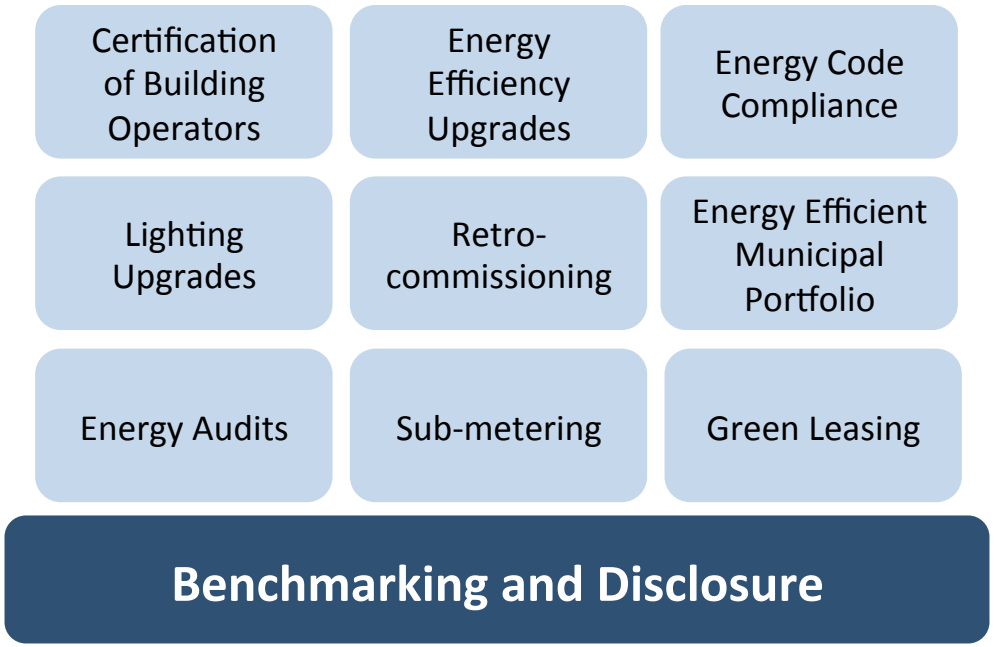
Commercial Building Policy Details

	Legislation			Building Type & Size Threshold		Disclosure				Additional Elements
	Jurisdiction	Short Name	First Compliance Deadline	Commercial	Multi family	To Gov't	On Public Website	Time of Transaction	To Current Tenants	Audit/Improvement Requirement
Cities	Austin	Energy Conservation Audit & Disclosure (ECAD) Ordinance	June 2011	10K SF+	Audits	✓		Buyers		Audits & mandatory upgrades for multifamily buildings
Cities	Boston	Building Energy Reporting and Disclosure Ordinance	May 2014	35K SF+	35 Units or 35K SF+	✓	✓			Audits every 5 years
Cities	District of Columbia	Clean and Affordable Energy Act of 2008	April 2013	50K SF+	50K SF+	✓	✓			
Cities	Minneapolis	TBD	May 2014	50K SF+		✓	✓			
Cities	New York City	Local Law 84 (additional requirements in LL 87, LL 88)	August 2011	50K SF+	50K SF+	✓	✓			ASHRAE level II audits and RCx (LL 87), lighting upgrades and submetering (LL 88)
Cities	Philadelphia	Bill NO. 120428-A	October 2013	50K SF+		✓	✓	Buyers Lessees		
Cities	San Francisco	Existing Commercial Buildings Energy Performance Ord.	October 2011	10K SF+		✓	✓	Buyers Lessees Lenders	✓	ASHRAE level I or II audits or RCx every 5 years
Cities	Seattle	CB 116731	October 2011	20K SF+	20K SF+	✓		Buyers Lessees Lenders	✓	
States	California	AB 1103	July 2013	5K SF+		✓		Buyers Lessees Lenders		Mandatory upgrades to be developed under AB 758
States	Washington State	Efficiency First SB 5854	January 2011	10K SF+				Buyers Lessees Lenders		Audits for public buildings with low ratings

Building Energy Performance Policy Toolkit

Complementary policies can help engage the private sector and ensure that EE goals are met:

- Long term market opportunities for service providers
- Reduced impact on city resources
- Faster uptake of energy efficiency measures
- Enhanced job creation



General Principles of Benchmarking and Disclosure Policies

Benchmarking and Disclosure

Property Size and Sectors

Minimum property size threshold varies from 5,000 to 50,000 square feet. Sectors always include office and retail, many policies include multifamily. Many policies *exclude* industrial.

Disclosure Type

Typically either annual public or during transaction.

Public disclosure typically on website, transactional disclosure during sale or lease.

Compliance Schedule

Municipal buildings disclose first.

Stagger deadlines for private buildings based on size, type, or both.

General Principles of Audit and Retro-commissioning Policies

Energy Audit Policies

ASHRAE Level I / Prescriptive
Small or simple buildings

Includes brief walk through, review of utility bills, and identification of general areas to look for energy efficiency opportunities.

Cost: < 8 cents / sq. ft.

ASHRAE Level II
Large or complex buildings

Includes comprehensive walk-through and analysis of conditions to identify and prioritize energy efficiency opportunities.

Cost: ~ 10 cents / sq. ft.

Future Compliance Path

Touch-free audits, based on utility bill information, or continuous energy consumption monitoring, or device "energy signature" disaggregation.

Cost: 7-8.5 cents / sq. ft.

Retro-commissioning Policies

No reference standard
All buildings

Requires review and correction of HVAC calibration, sensors, controls, load distribution, ventilation rates, common area lighting and light controls, motors fans and pumps, steam traps, weather stripping, etc.

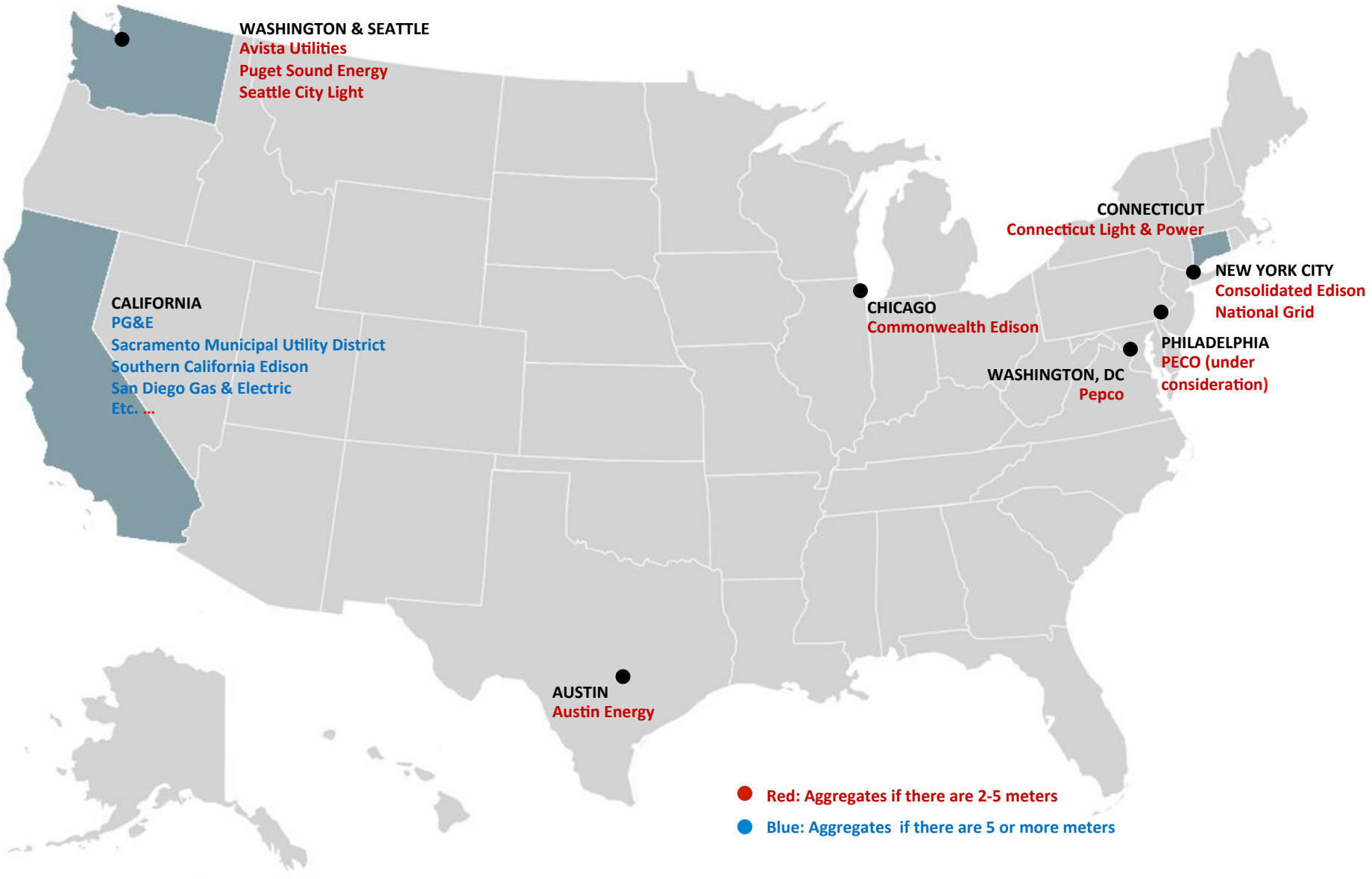
Cost: 15 – 30 cents / sq. ft. (depends on building complexity)

Future Compliance Path

Retro-commissioning informed by analytics-based audits, or continuous commissioning.

Cost: < 15 cents / sq. ft. (?)

Utility Data Access Programs (comm. and multifamily)



BENEFITS TO BETTER ACCESS

- Ability to measure performance is critical to efficient building operations and EE evaluation for owners
- Enables owners/operators to work with tenants to increase efficiency
- Helps owners achieve LEED and ENERGY STAR certifications
- Can enable utilities to increase demand for EE incentives and rebates, and target programs
  - 2012 CPUC study found benchmarking increased enrollment in utility EE programs
- Good utility customer service

CHALLENGES FOR UTILITIES

- Utilities not credited for data access programs (no value?)
- Some IT/CIS adjustments necessary
  - Many utilities don't map meters to buildings
- Customer confidentiality
  - Utilities operating under confidentiality provisions from PUCs, state laws
  - No national standards/guidelines for data access

DATA ALLIANCE

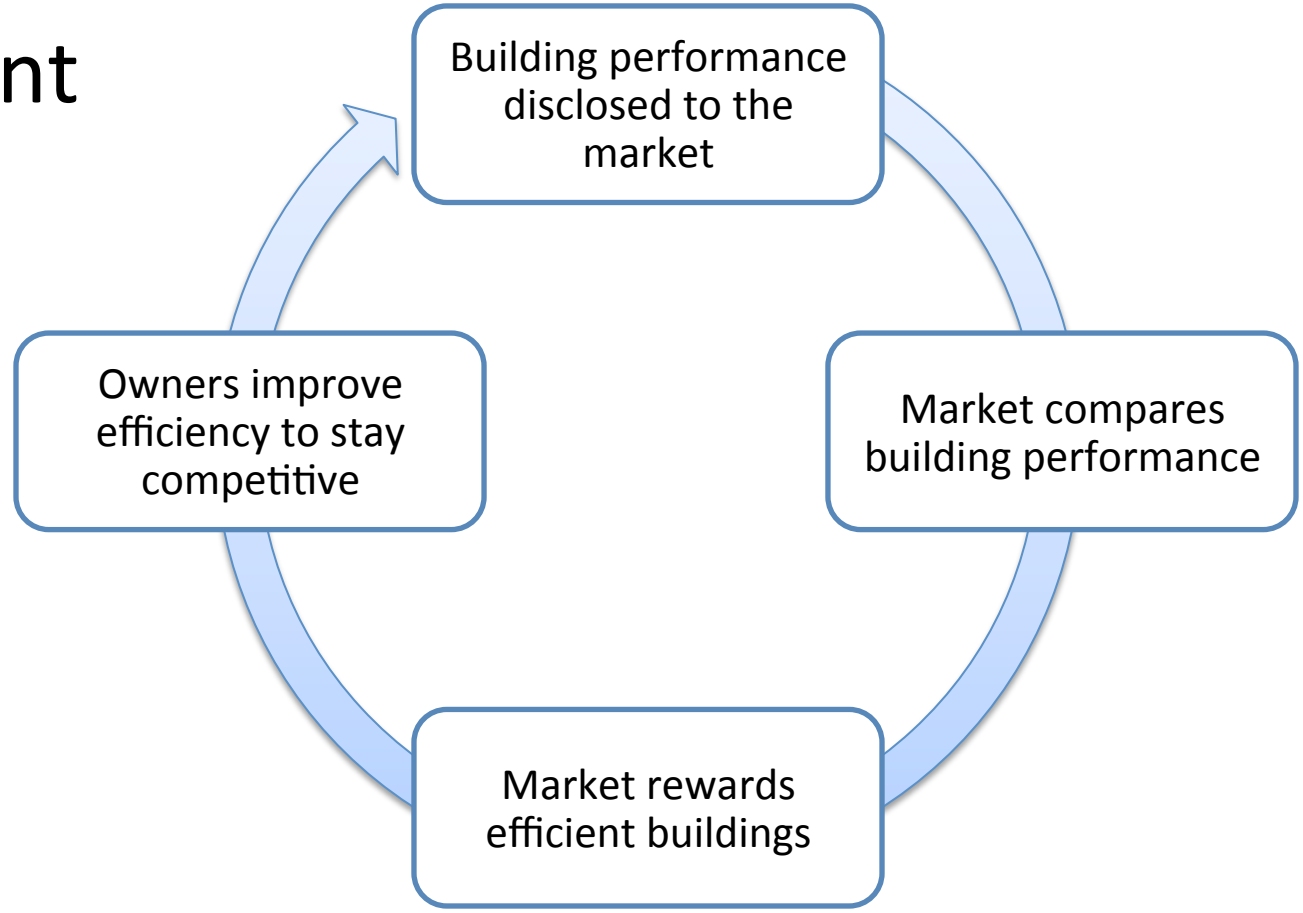
- **BOMA International, Real Estate Roundtable, IMT, USGBC** form DATA Alliance in 2011 to educate utilities and regulators to secure better access to energy consumption data for building owners

- July 2011: NARUC approves resolution calling on regulators to provide better data access to commercial owners

- DATA is working collaboratively with federal agencies, Congress and the administration, as well as local BOMA/USGBC chapters

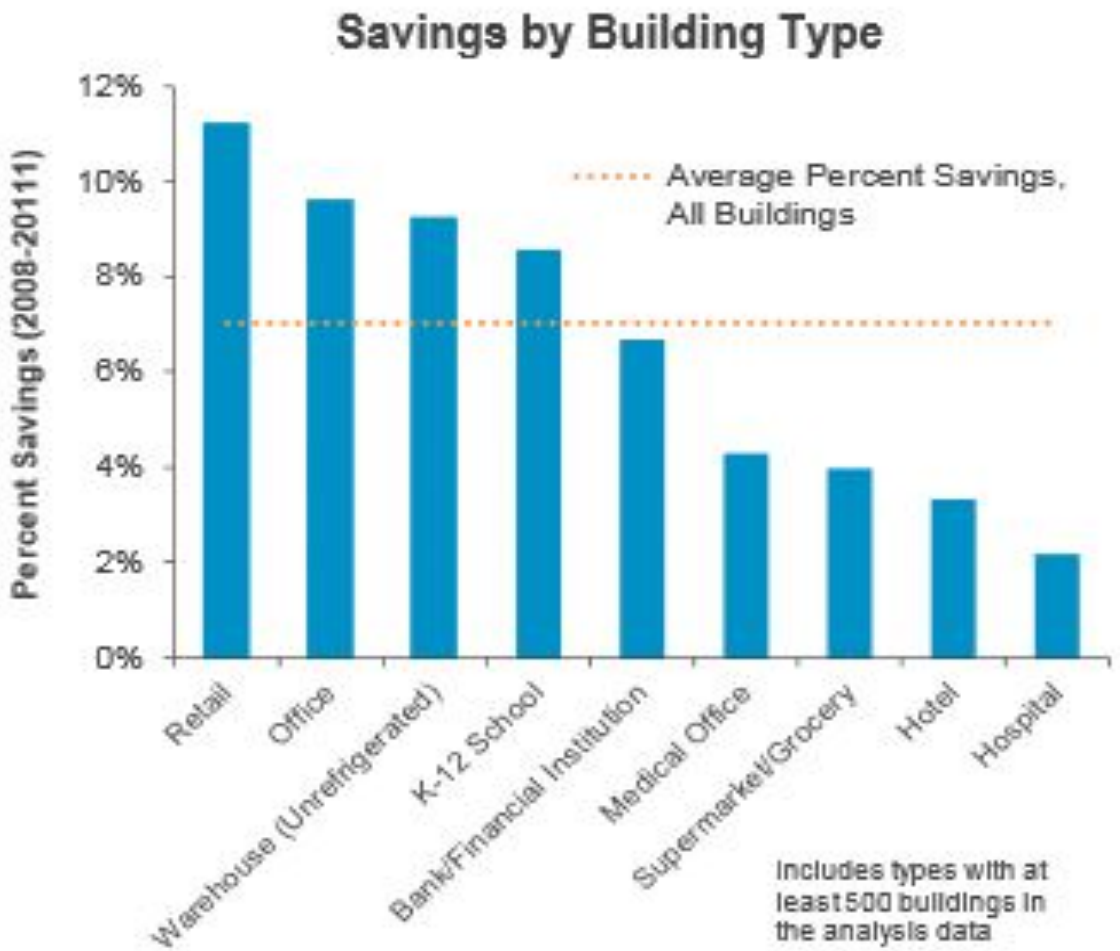
    - USGBC Existing Authorities Memo
    - RER congressional testimony
    - Green Button, federal utility code of conduct development
    - DOE energy innovation hub in Philadelphia

Competition drives improvement



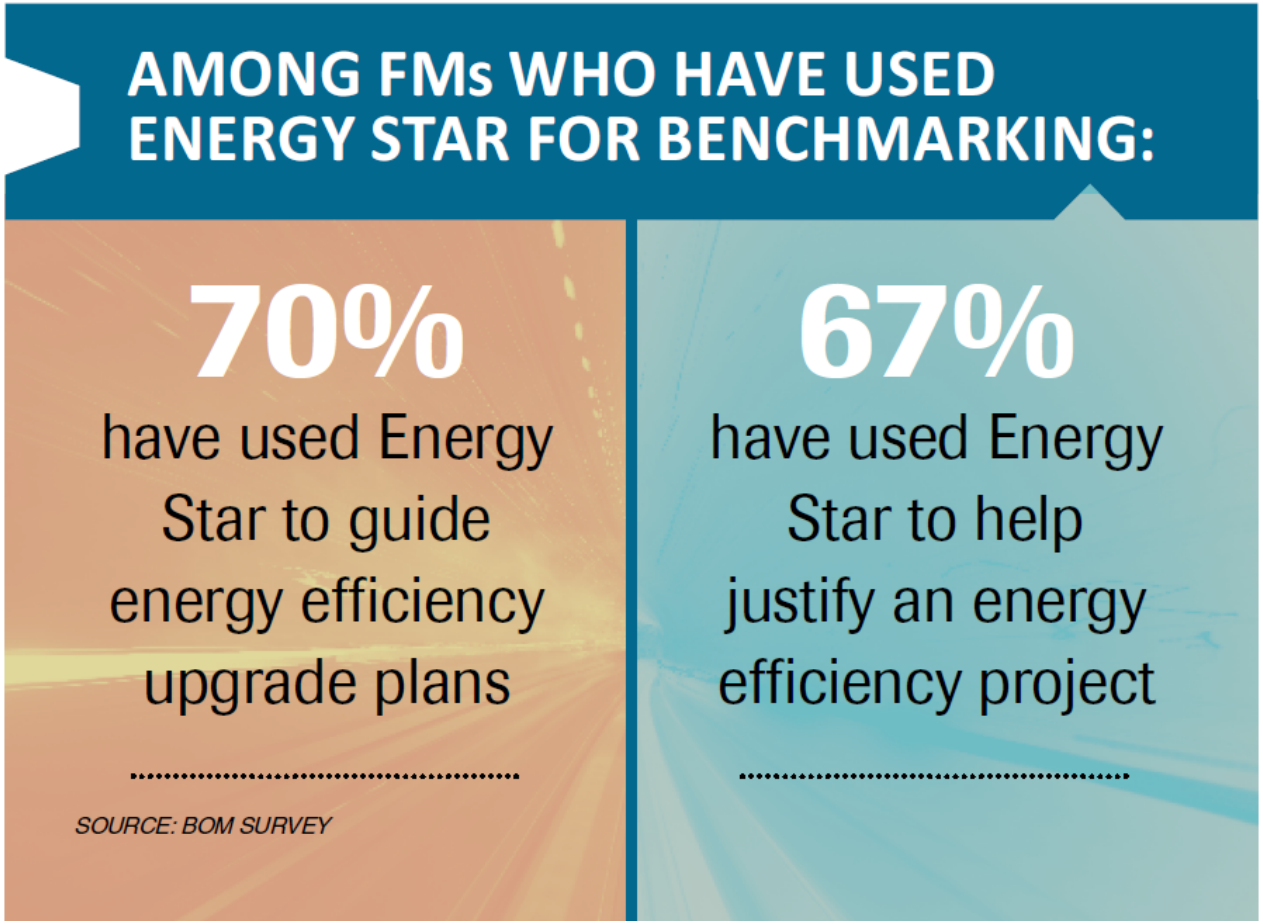
Is Benchmarking Effective? The Evidence

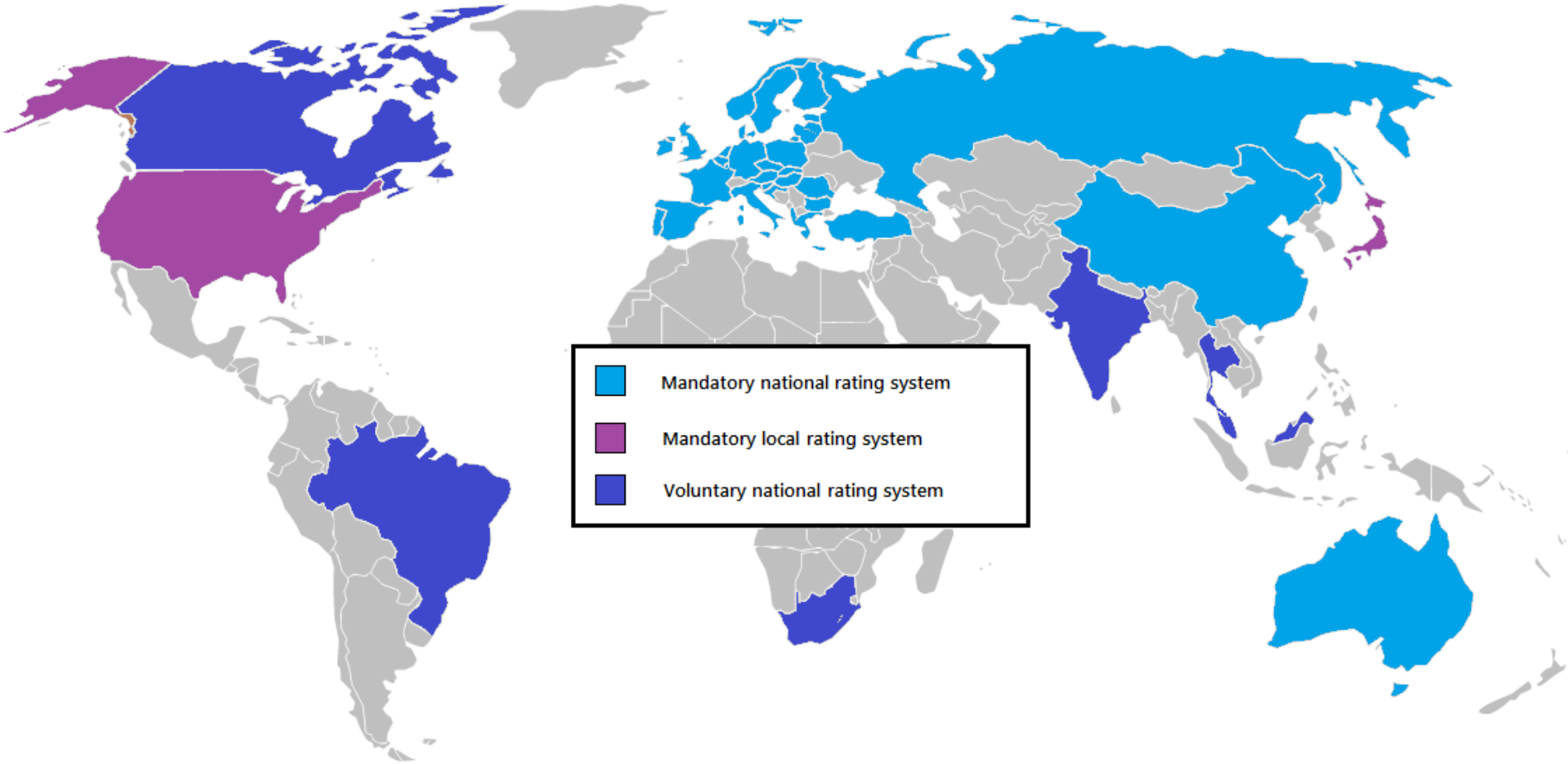
The Environmental Protection Agency studied 35,000 benchmarked buildings and found an average annual savings of **2.4 percent** over three years, for a total energy savings of **over 7 percent**.



Source: U.S. Environmental Protection Agency, *ENERGY STAR Portfolio Manager Benchmarking and Energy Savings DataTrends,* October 2012.

Is Benchmarking Effective? More Evidence





There are more than 60 energy performance rating systems in 41 countries

PROFILE | NEW YORK CITY

Local Law 84

Benchmarking
50,000 SF+

Properties must be annually benchmarked, with energy and water consumption data reported via EPA ENERGY STAR Portfolio Manager. Data is made public beginning with the second reporting year.

Local Law 87

Energy Audits
50,000 SF+

Audits of base building systems every 10 years. Required to implement upgrades with a 7-year or better payback within 1 year.

Retro-commissioning
50,000 SF+

Required once every 10 years. Covers base building systems. Required to use a third-party.

NYC Energy Conservation Code (NYCECC)

Local Law 85
2009

Requires a building system to be brought up to code even if less than 50% is disturbed.

Local Law 48
2010

Extends requirements for occupancy sensors to offices, classrooms, and some other spaces less than 200 sq. ft.

Local Law 88

Lighting Upgrades
50,000 SF+

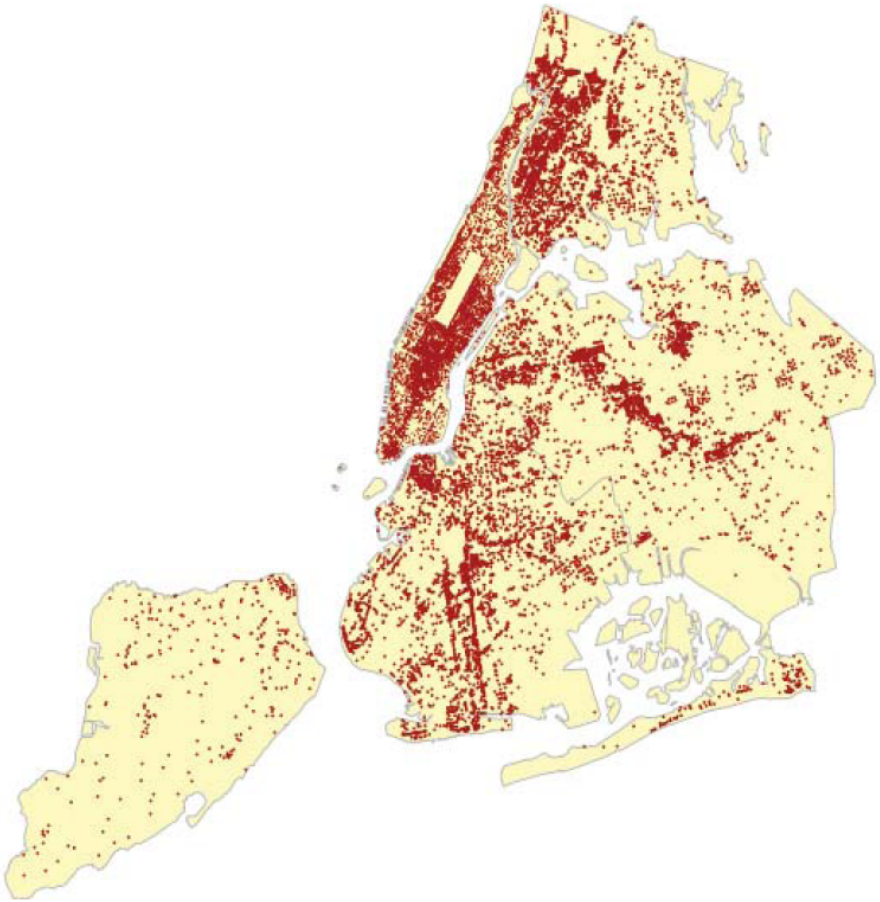
By 2025, lighting must be upgraded to meet the current NYCECC reqs for power density, controls, exterior lighting, etc.

Sub-metering
50,000 SF+

By 2025, sub-meters must be installed for non-residential tenant spaces 10k sq. ft. or more.

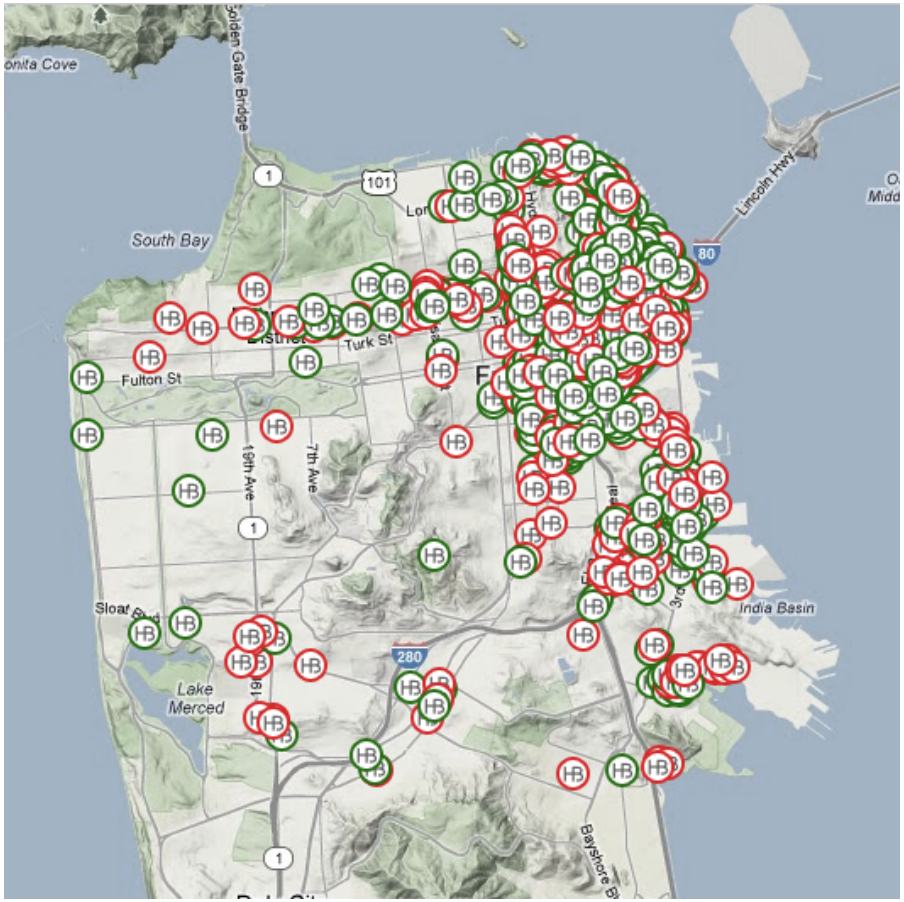
Deep Dive: Policy Data Outputs

New York City



Buildings 50k SF+
~16,000 buildings, 2.5 billion SF

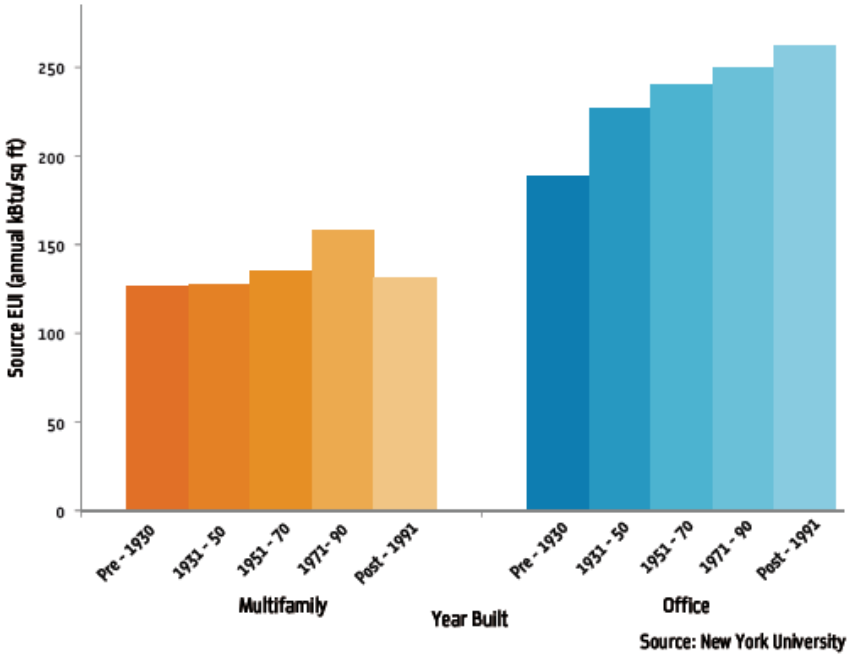
San Francisco

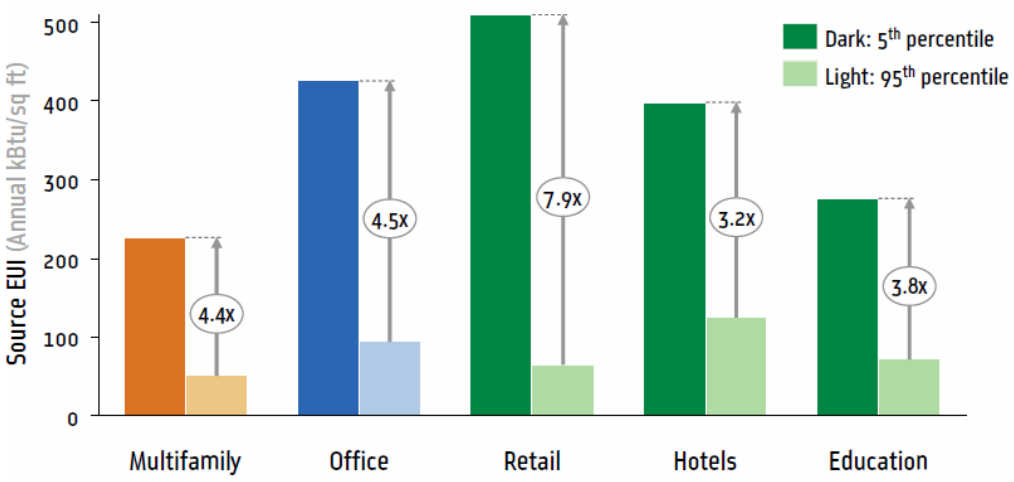


Buildings 10k SF+
~2,700 buildings, 205 million SF

NYC's 2010 Benchmarking Results: Variations in Energy use

Figure 24: Median Energy Use Per Sq Ft by Building Type and Age Group

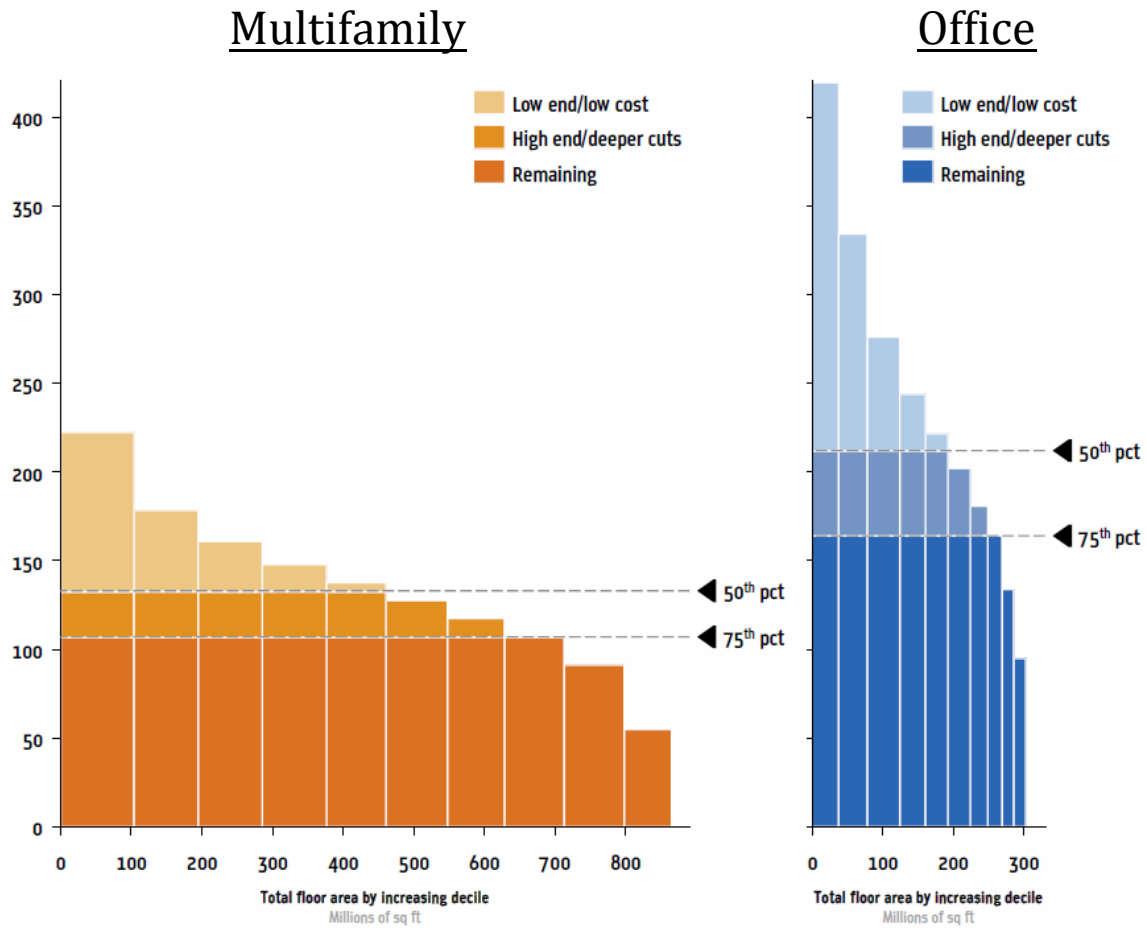




- Older buildings tend to have lower Energy Use Intensities (EUI) and higher ENERGY STAR scores than newer buildings.
- Energy use varies greatly between property types, uses, and locations.
- Some properties using 3-7x more energy than other buildings with similar uses.

Source: New York City Local Law 84 Benchmarking Report (August 2012)

NYC's 2010 Benchmarking Results



...if all buildings operated at the...

50th percentile - **18%** reduction in energy use, **20%** reduction in GHG emissions

75th percentile - **31%** reduction in energy use, **33%** reduction in GHG emissions

Source: New York City Local Law 84 Benchmarking Report (August 2012)

Typical Policy Adoption Cycle

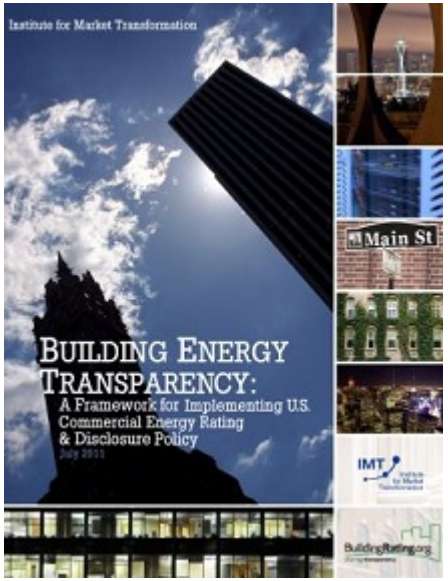
PRE-ADOPTION	ADOPTION	OPERATIONS
18 months	**18 Months**	**On-going**
▪ Determine legislative authority ▪ Data gathering - understand your building stock ▪ Initial outreach and stakeholder engagement ▪ Policy Design ▪ Utility engagement - data access, attribution ▪ Drafting of legislation	▪ Technical development - list of buildings that have to comply, how-to documents, develop business processes ▪ Increased outreach - building owners, trade groups, utilities, and vendors ▪ Education and training - on tools and benchmarking process, sector specific ▪ Detailed rulemaking	▪ Staggered reporting deadlines ▪ Technical support - help center to answer questions, flag common errors, and work with people to get their buildings benchmarked ▪ Compliance and enforcement - notification and tracking methods ▪ Reporting and analysis - profile energy use for the building stock, identify best/worst performance, etc. ▪ Develop plans to assist poor performers

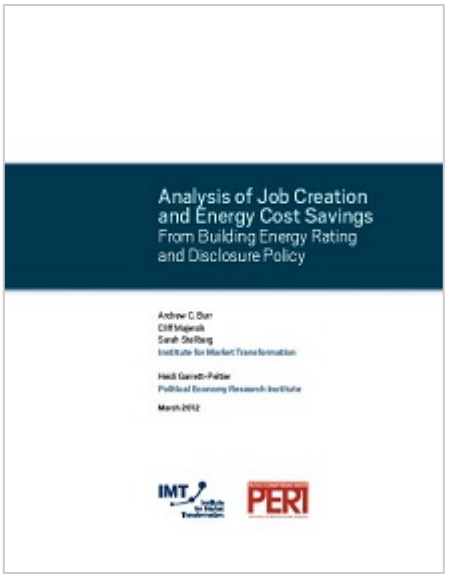
Staffing requirements:

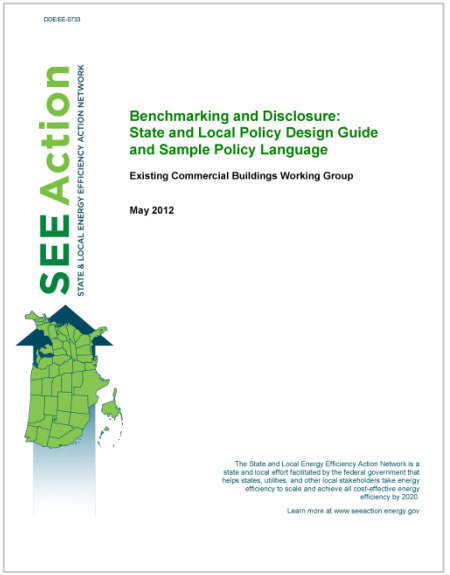
- 2 FTEs for pre-adoption, adoption, and *initial* operations
- 1 or 2 FTEs for ongoing operations

How We Help Expedite the Process

- Technical assistance - bill language, drafting of policy
- Political strategy - typical arguments for and against benchmarking
- Stakeholder engagement - identification and engagement with key industry groups
- Inter-city facilitation - sharing best practices, convening cities
- Advice on media - what, when and how to message
- Implementation strategy - what needs to be done, and how to do it







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Director of Programs
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Urban Green Council
U.S. Green Building Council
New York
UrbanGreenCouncil.org

OUTREACH STRATEGIES FOR ENERGY DISCLOSURE LEGISLATION

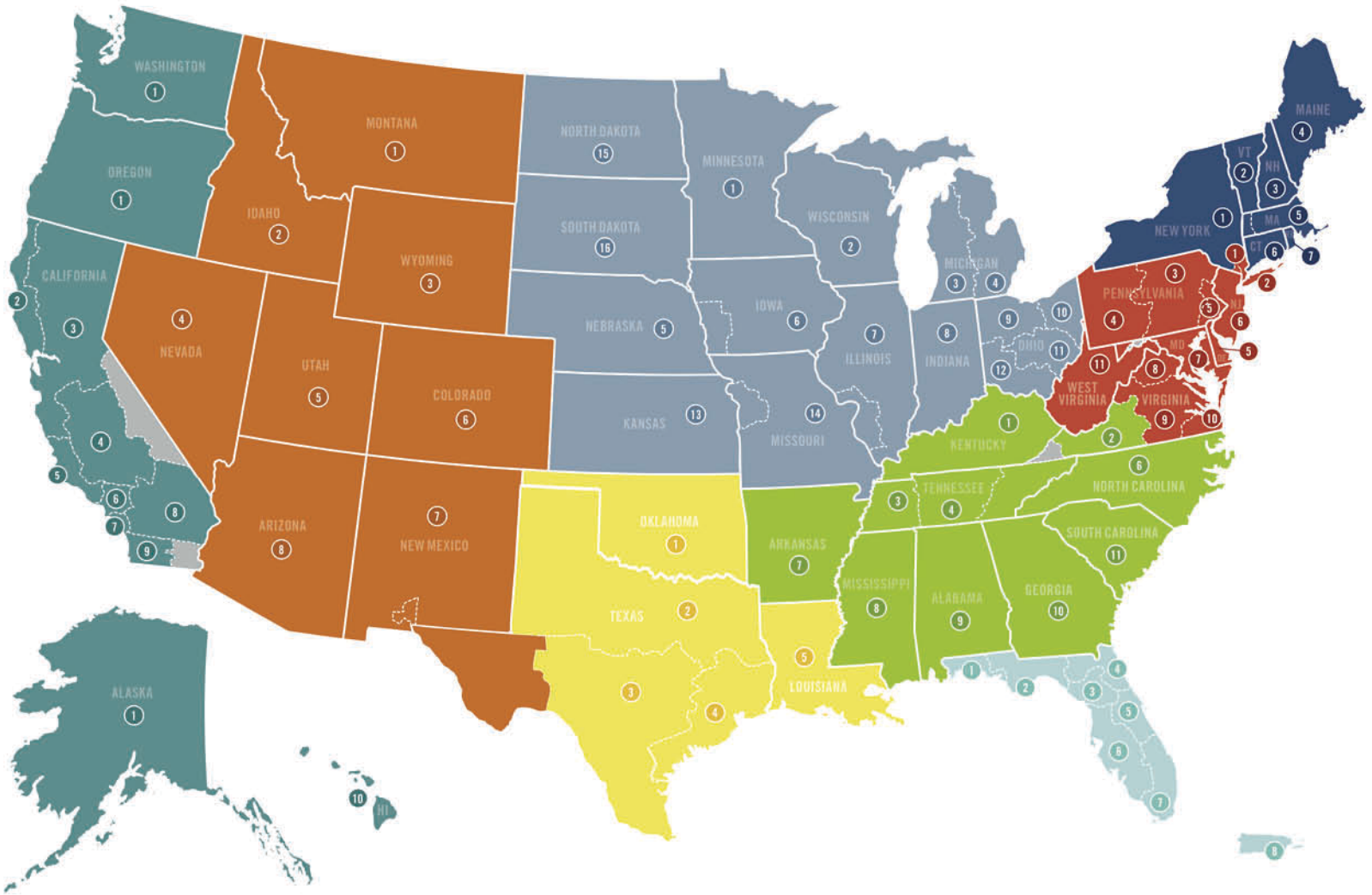

URBAN
GREEN
U.S. GREEN BUILDING COUNCIL
CHAPTER
SM

USGBC CHAPTERS

One community of individuals taking LOCAL action to deliver GLOBAL results through education, advocacy and outreach.

NETWORK

77 Chapters
30,000
Individual Members



As of March 2013

OUR CURRENT INITIATIVES

- Improve Building Envelopes
- Make Buildings Resilient
- Create Low-Carbon Cities
- Reach All Industry Sectors
- Revise Codes, Remove Barriers

REVISING CODES, REMOVING BARRIERS

NYC GREEN CODES LEGISLATIVE TRACKER

Search

FILTER BY

Proposal Category: OC: Overarching Coc

Status: --None--

Task Force Committee: Steering

Reset

LEGEND

Enacted: The recommendation has been incorporated into law, rule, or practice.

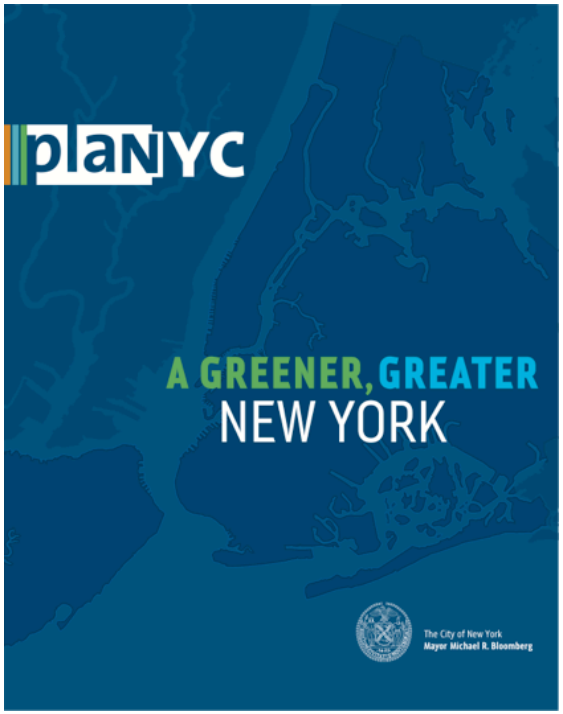
In Progress: Some portion of the recommendation has been addressed by law, rule, or practice, but the recommendation has not been fully enacted.

Proposed: The recommendation has not yet been incorporated into law, rule, or practice.

TASK FORCE PROPOSAL	RESOURCES	STATUS
OC2 Fully Enforce NYC's Construction Codes	Legislation at a Glance American Recovery and Reinvestment Act Task Force Proposal	IN PROGRESS
OC3 Don't Exempt Existing Buildings from Green Codes	Legislation at a Glance Local Law 85/2009 Task Force Proposal	IN PROGRESS
OC4 Reconvene the Green Codes Task Force	Task Force Proposal	PROPOSED
OC6 Streamline Approvals for Green Technologies & Projects	Legislation at a Glance Local Law 5/2010 Task Force Proposal	ENACTED
OC7 Enhance Code Training for Architects & Engineers	Legislation at a Glance Task Force Proposal	IN PROGRESS

Showing **1 through 5** of **5** 10 per page

zone green



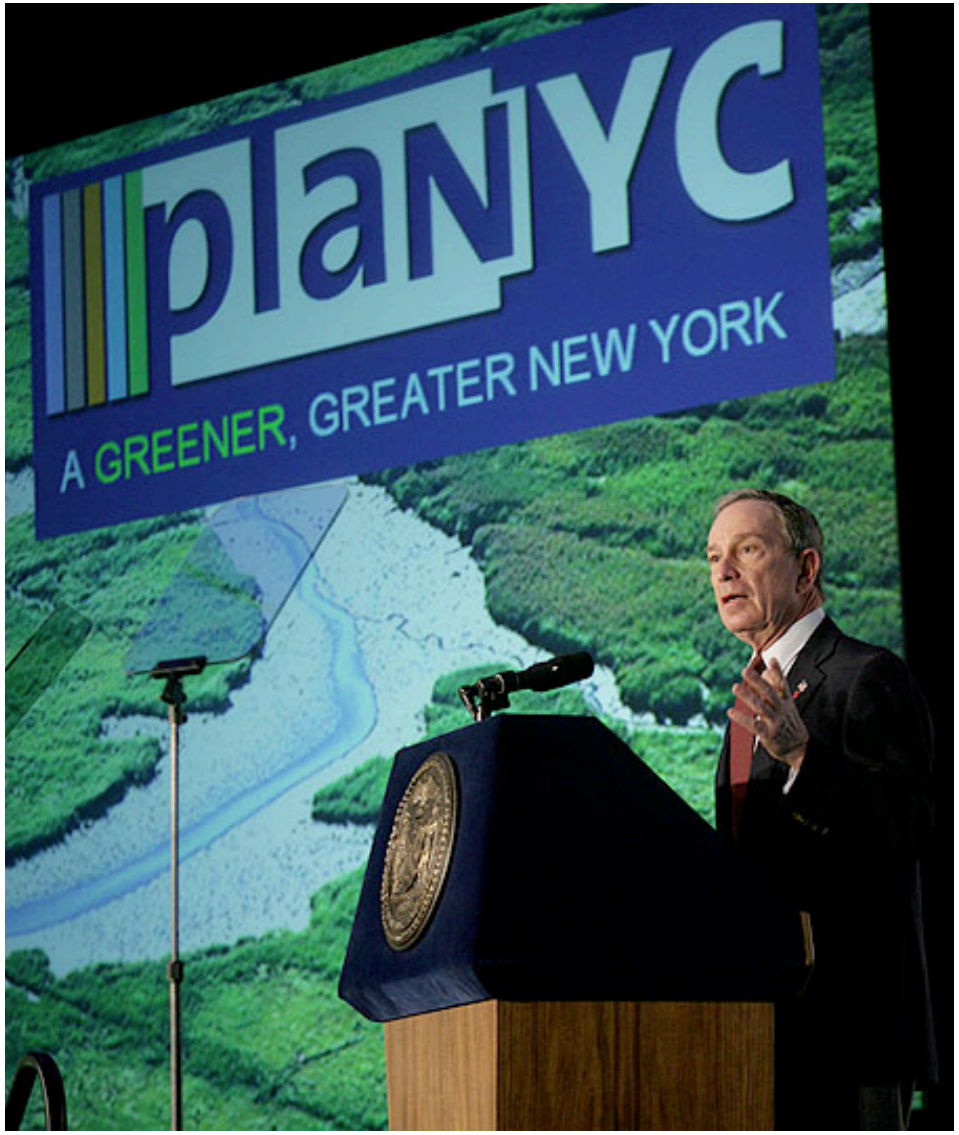
CIVIC LEADERSHIP

PlaNYC

- Prepare for 1 million more residents
- Strengthen economy
- Combat climate change
- Enhance quality of life

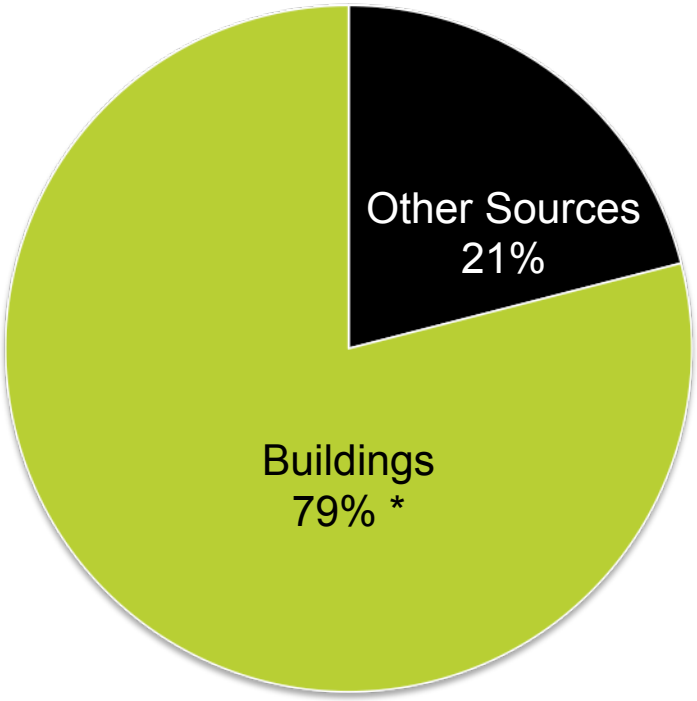
Greener, Greater Buildings Plan

- Package of 4 laws
- Goal to reduce carbon pollution
- Aimed to decrease water and energy use in NYC's largest buildings



WHY EXISTING BUILDINGS?

NYC Greenhouse Gases



* Down to 74% since 2005

NYC Greenhouse Gases

GREENER, GREATER BUILDINGS PLAN

Applies to all buildings:

- NYC Energy Conservation Code – Local Law 85

Applies to large buildings (over 50,000 SF):

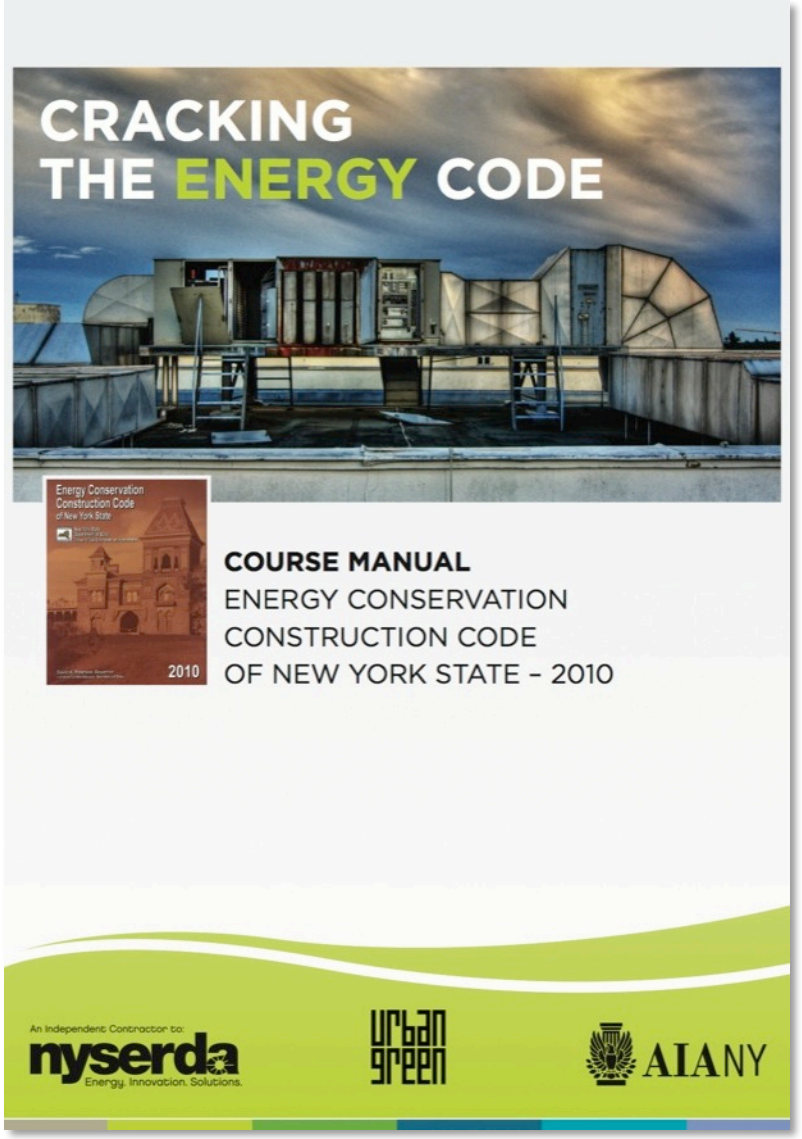
- Energy and Water Benchmarking – Local Law 84
- Energy Audits and Retro-commissioning – Local Law 87
- Lighting Upgrades and Sub-metering – Local Law 88

GREENER, GREATER BUILDINGS PLAN

December 2009	Four bills signed into law
May 2010	**BENCHMARKING – LL 84**
	City-owned buildings due
July 2010	**NYC ENERGY CODE – LL 85**
	Effective Date for all construction
May 2011	**BENCHMARKING – LL 84**
	Private buildings due
January 2013	**AUDITS & RETRO-COMMISSIONING – LL 87**
	First year of compliance
January 2025	**LIGHTING & SUBMETERING – LL 88**
	Compliance reports due

NEW YORK ENERGY CONSERVATION CODE - LL 85

- Created a 4-hour course with AIA NY and industry experts explaining new code and compliance methods
- Wrote detailed course manual
- Selected and trained instructors to teach the course
- Led outreach effort and partnered with local USGBC and AIA chapters to deliver sessions
- Received NYSERDA funding



NEW YORK ENERGY CONSERVATION CODE - LL 85

- Delivered 80 sessions in New York City and state.
- Taught more than 1500 students
- Provided over 6,000 continuing education hours
- Approximately 2 years for development and delivery.

Session Locations by Frequency

ENERGY & WATER BENCHMARKING – LL 84

ENERGY & WATER USE BENCHMARKING
Local Law 84

COMPLIANCE CHECKLIST & USER'S GUIDE

Version 2.0, April 1, 2012

This document is intended to help real estate owners and property managers satisfy the requirements of Local Law 84.

What is Local Law 84?

Local Law 84 is part of a package of laws known as the "Greener Greater Buildings Plan," which were enacted in December 2009 to improve the energy and water efficiency of New York City's largest existing buildings. Local Law 84 requires property owners to report on ("benchmark") the energy and water use of their buildings through an online tool called Portfolio Manager, which is maintained by the US Environmental Protection Agency (EPA).

For more information on the Greener, Greater Buildings Plan, go to www.nyc.gov/ggbp or www.urbangreencouncil.org/BuildingsPlan.

Who's responsible for complying with Local Law 84?

Property owners and co-op and condo associations are ultimately responsible for complying with the law. However, many of these parties will delegate the reporting to their property manager or a consultant. This may be an additional service under some existing contracts.

Who developed this checklist and user's guide, and for what purpose?

Urban Green Council, an environmental nonprofit based in New York City, developed this checklist and user's guide with assistance from the real estate industry and Mayor's Office to provide property owners with step-by-step instructions on how to comply with Local Law 84 and guidance for directing staff or consultants. This checklist and user's guide does not provide detailed compliance instructions. For detailed compliance instructions and a list of benchmarking resources, go to www.nyc.gov/ggbp, call the Benchmarking Help Center via 3-1-1, or e-mail sustainability@buildings.nyc.gov.

nyserda planYC conEdison RELATED

ENERGY & WATER USE BENCHMARKING
Local Law 84

COMPLIANCE CHECKLIST

GETTING STARTED

- [ ] **1.** Determine if your property is **subject to** the benchmarking law.
- [ ] **2.** Decide who will be your **benchmarking administrator**, the person responsible for gathering building data and entering it into Portfolio Manager.

DATA COLLECTION

- [ ] **3.** Provide the benchmarking administrator with the building **gross square area** and a breakdown of the **square footage by space use type** or means to find this information.
- [ ] **4.** Authorize the benchmarking administrator to collect and compile the property's **whole building energy** use for the last calendar year.
- [ ] **5.** Authorize the benchmarking administrator to gather information on the **space use attributes** of the property.
- [ ] **6.** Send the Benchmarking Non-Residential **Tenant Information Collection Form** to tenants with their own utility meters, other than residential tenants.

DATA ENTRY & PROOF OF COMPLIANCE

- [ ] **7.** Confirm that the benchmarking administrator has entered the benchmarking data into **Portfolio Manger** following specific steps.
- [ ] **8. Maintain records** of relevant documents for three years.

FOLLOW UP

- [ ] **9.** If you have benchmarked in previous years, **compare** your property's Current Rating or Current Source Energy Intensity against last year's rating.
- [ ] **10.** Send staff to **energy efficiency** training.

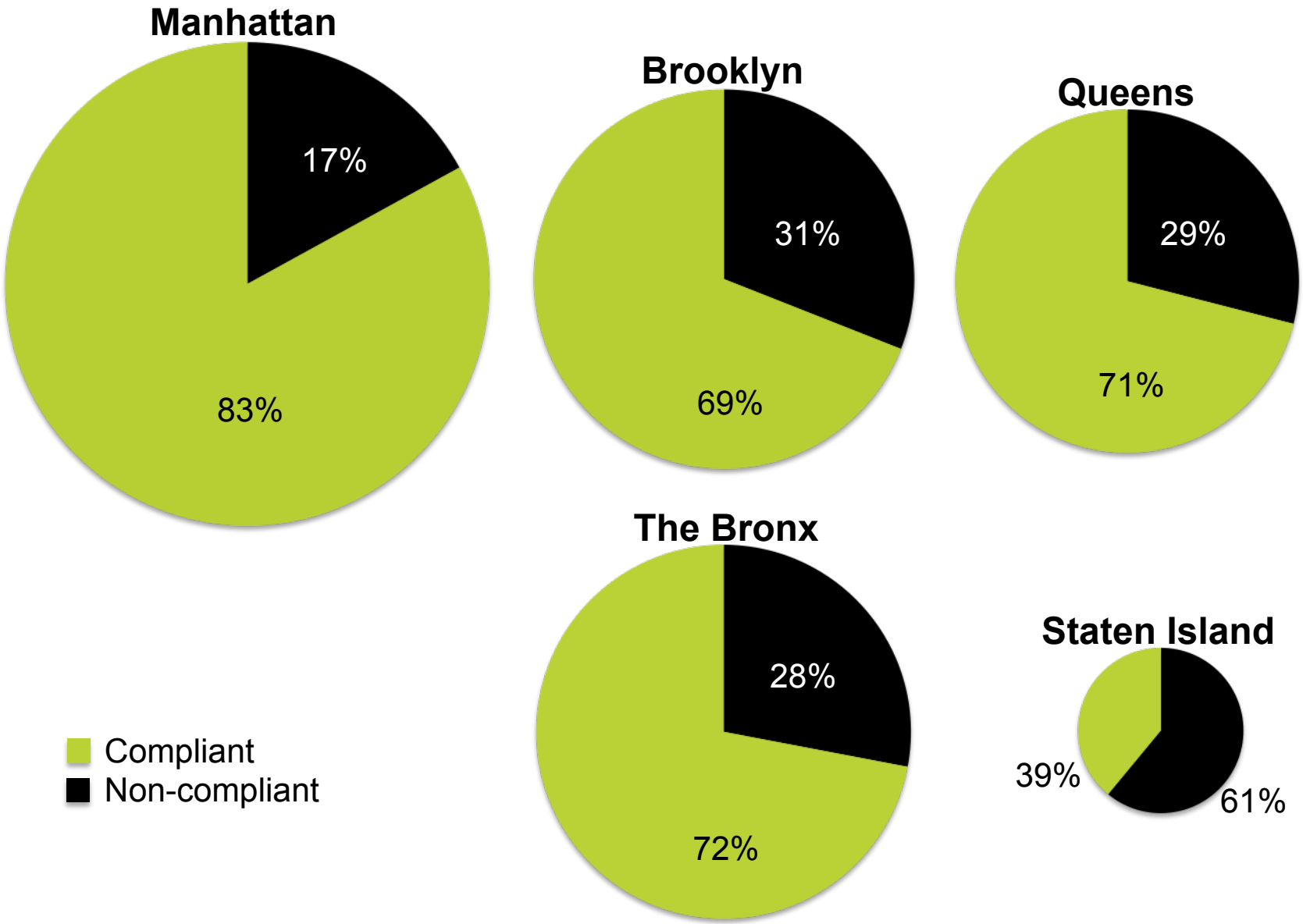
ENERGY & WATER BENCHMARKING – LL 84

DEVELOPMENT	DELIVERY
Urban Green Council Staff *Course Development*	Urban Green Council Staff *Management & Outreach*
Real Estate Industry Professionals *Content Advisor*	Real Estate Industry Consultant *Outreach Advisor*
Mayor's Office of Long-Term Planning & Sustainability *Advisor*	Professional & Industry Associations *Outreach*
NYC Department of Buildings *Advisor*	Volunteer Speakers Bureau *Delivery & Outreach*
Kresge Foundation, NYSERDA, & ConEdison *Funder*	Kresge Foundation, NYSERDA & ConEdison *Funder*

ENERGY & WATER BENCHMARKING - DELIVERY

- Perform a real estate market analysis to identify high-leverage audience
- Quantify type and use of applicable buildings.
- Develop a marketing and implementation strategy

ENERGY & BENCHMARKING – RESULTS



AUDITS & RETRO-COMMISSIONING – LL 87

ENERGY AUDITS & RETRO-COMMISSIONING LOCAL LAW 87 OF 2009

Compliance Checklist & User's Guide

planYC

February 20, 2013 Version 5.0

This document is intended to help real estate owners and property managers comply with Local Law 87.

What is Local Law 87?

Local Law 87 is part of a package of four laws known as the "Greener, Greater Buildings Plan," which were enacted in December 2009 to improve the energy and water efficiency of New York City's largest buildings. Local Law 87 requires property owners to audit energy use and retro-commission their buildings every 10 years, as well as submit an "Energy Efficiency Report" to the NYC Department of Buildings (DOB) documenting the results. For more information on the Greener, Greater Buildings Plan, go to **www.nyc.gov/ggbp** or **www.urbangreencouncil.org/ggbpeducation**.

What is an energy audit? What is retro-commissioning?

An energy audit is a systematic analysis of a building's energy equipment and systems to identify cost-effective capital improvements that will save energy. An energy audit report provides a list of recommended strategies to save energy, along with an estimate of their cost and payback. Local Law 87 requires property owners to receive an energy audit but does NOT require them to follow the recommendations described therein.

Retro-commissioning is the testing and tune-up of existing building systems to confirm they are operating as designed and as efficiently as possible. Retro-commissioning commonly identifies maintenance, calibration and operations errors that are easily corrected and, when implemented, typically amount to significant energy savings and improvment in equipment reliability. Sometimes the testing will make apparent mistakes that originate from the building's construction or a subsequent renovation. Any operations measures revealed through retro-commissioning as not in compliance with the Law must be rectified.

Local Law 87 only requires energy audits and retro-commissioning of "base building systems" which includes, but is not limited to, the building envelope, HVAC systems, elevators and escalators, domestic hot water supply, and electrical and lighting systems. Neither the energy audit nor retro-commissioning include equipment owned by tenants or used for industrial processes within the building.

Who is responsible for complying with Local Law 87?

Property owners, including co-ops and condo boards, are ultimately responsible for complying with the Law. However, many of these parties have property managers to whom they can delegate administration of the compliance work. This work includes hiring and supervising consultants to conduct the energy audit and retro-commission, as well as submiting the "Energy Efficiency Report" to DOB. The property manager may also be tasked with reviewing the consultant's reports and recommending follow up action to the owner or co-op/condo board. This work may be considered an additional service under property manager's contract.

How will Local Law 87 be enforced?

DOB is responsible for enforcement. Failure to comply with Local Law 87 will be deemed a Class 2 violation, subjecting property owners to fines of $3,000 for the first year and $5,000 for each additional year of non-compliance. DOB intends to conduct random reviews of documents submitted under the Law.

Who developed this checklist and user's guide and for what purpose?

Urban Green Council, an environmental nonprofit based in New York City, developed this checklist and user's guide with assistance from the NYC's Mayor's Office, DOB, and the real estate industry. The goal is to provide property owners with step-by-step instructions on how to comply with Local Law 87 and guidance for directing staff or consultants. This checklist and user's guide is not intended to provide detailed compliance instructions. For detailed instructions and official responses, go to **www.nyc.gov/ggbp** to read the Law as well as the Rule adopted by DOB, or e-mail **sustainability@buildings.nyc.gov**.

ENERGY AUDITS & RETRO-COMMISSIONING LOCAL LAW 87 OF 2009

Compliance Checklist

GETTING STARTED

- ☐ **1.** Determine whether your property is subject to Local Law 87.
- ☐ **2.** Determine your property's reporting year.
- ☐ **3.** Decide whether to pursue early compliance under the Law.
- ☐ **4.** Determine whether your property is exempt from all or part of the Law.
- ☐ **5.** Select your Greener, Greater, Buildings Plan administrator ("GGBP project manager").
- ☐ **6.** Decide whether to do your energy audit at the same time as retro-commissioning.

ENERGY AUDITS

- ☐ **7.** Search for and select a qualified energy auditor.
- ☐ **8.** Begin your energy audit at least one year before it is due.

RETRO-COMMISSIONING

- ☐ **9.** Search for and select a qualified energy auditor.
- ☐ **10.** Begin your retro-commissioning 12 - 18 months before it is due.

SUBMIT ENERGY EFFICIENCY REPORT

- ☐ **11.** Submit your Energy Efficiency Report (EER) by the end of the reporting year.
- ☐ **12.** Maintain records for a minimum of 11 years.

GETTING VALUE

- ☐ **13.** Take advantage of NYSERDA and Con Edison incentives.
- ☐ **14.** Get the most out of the energy audit.
- ☐ **15.** Make the best of retro-commissioning.
- ☐ **16.** Invest in staff training.

AUDITS & RETRO-COMMISSIONING – LL 87

Identify Target Audience

- Real Estate Market Analysis
- Benchmarking Results

Communicate

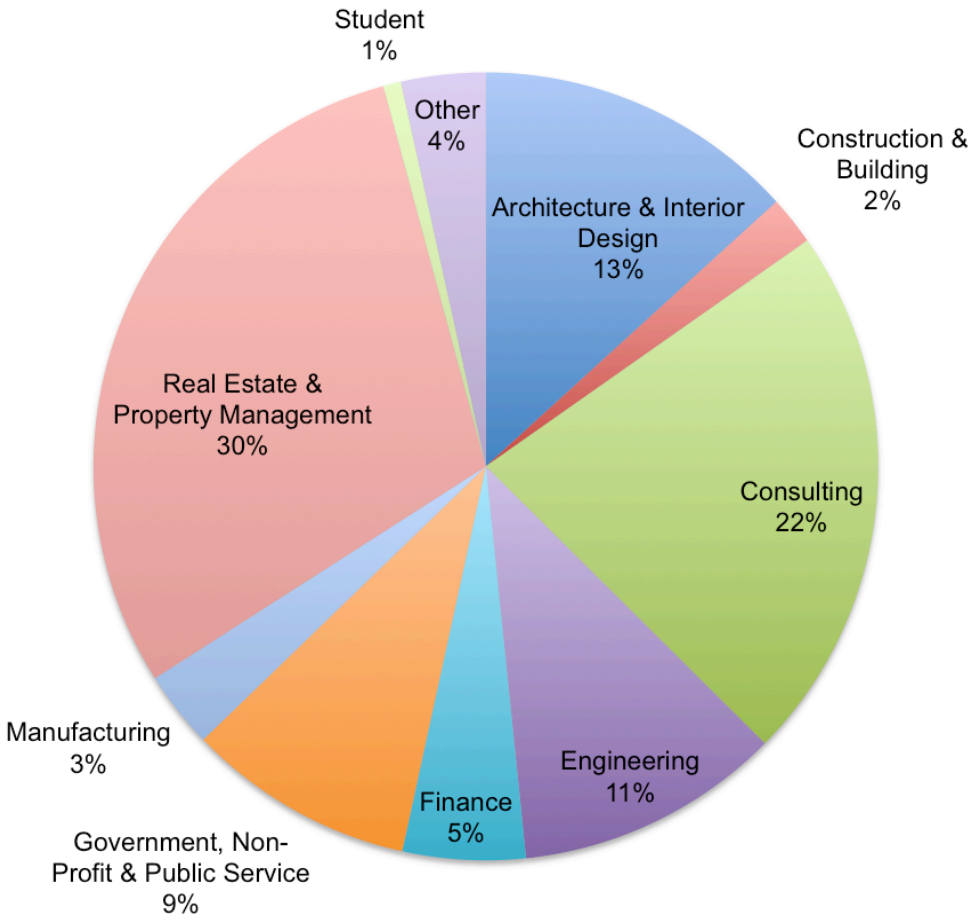
- Key Owners & Property Managers
- Industry & Professional Associations

Implement

- Public Presentations
- Private Sessions
- Web Access

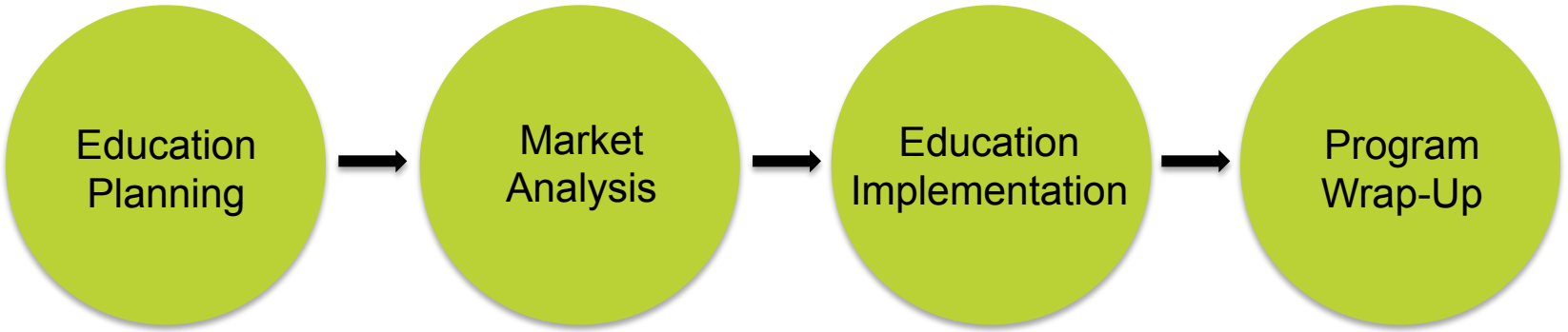
AUDITS & RETRO-COMMISSIONING – RESULTS

- 70 presentations since September 2012
- Over 1,230 attendees
- Checklist viewed over 1,800 times



KEY OUTREACH LESSONS

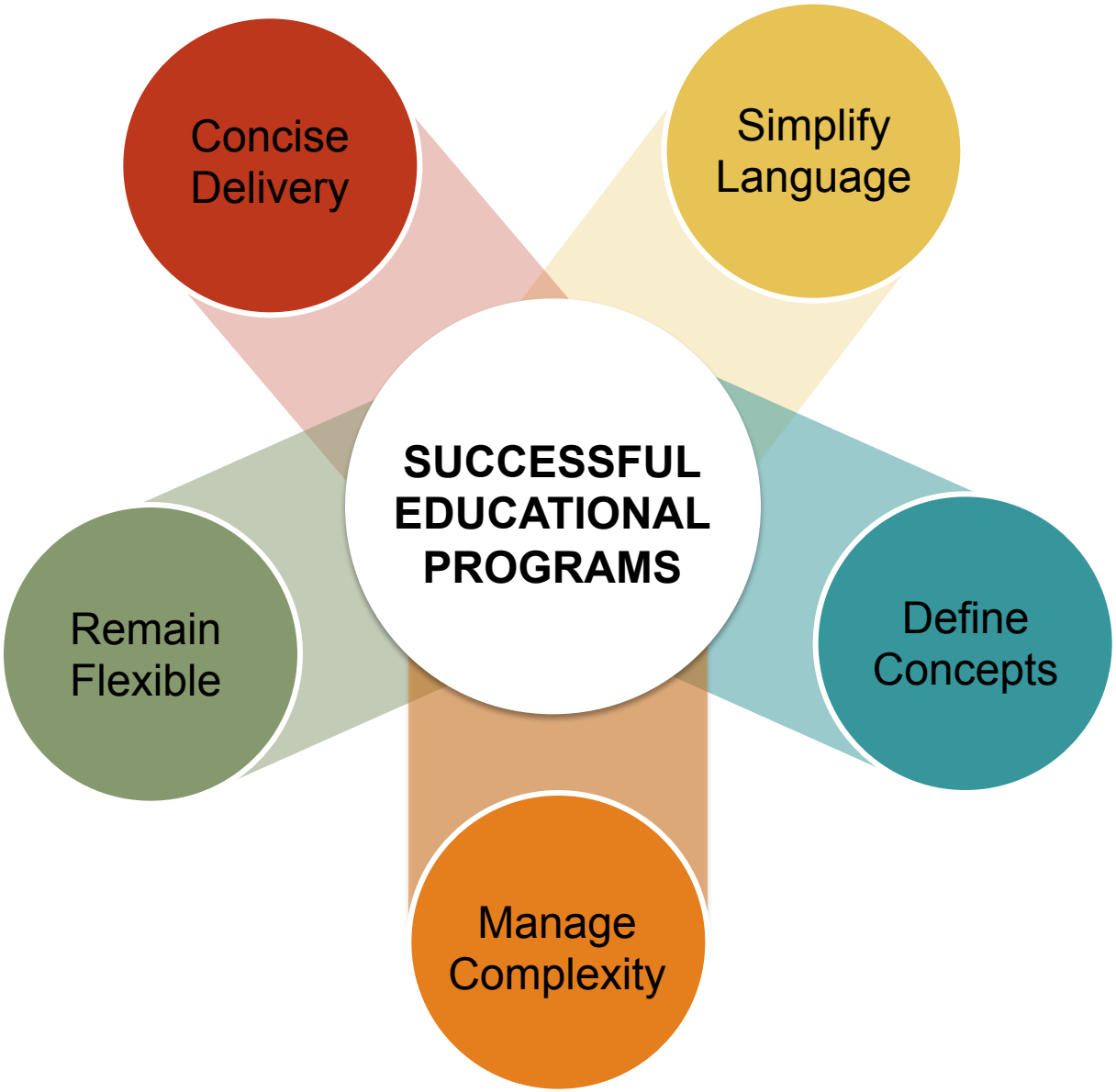
- Collaborate with local government
- Look for funding
- Capitalize on industry expertise
- Work with professional and industry associations
- Be strategic about your audience



GOVERNMENT COLLABORATIONS & SUPPORT

NETWORKS & CONTACTS

GGBP EDUCATION: CHALLENGES



GGBP EDUCATION: Scalability

MANAGEMENT	OUTREACH PARTNERS	FUNDING
Professional & Industry Associations		
Non-profits		
Local USGBC Chapter!		
	Large Organizations	
	Key Industry Stakeholders	
		National Foundations
		Local Utilities
		Government Grants

CONTACT US

Tiffany Broyles Yost
LEED AP BD+C
Director of Programs

Urban Green Council
U.S. Green Building Council
New York
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New York, NY 10005
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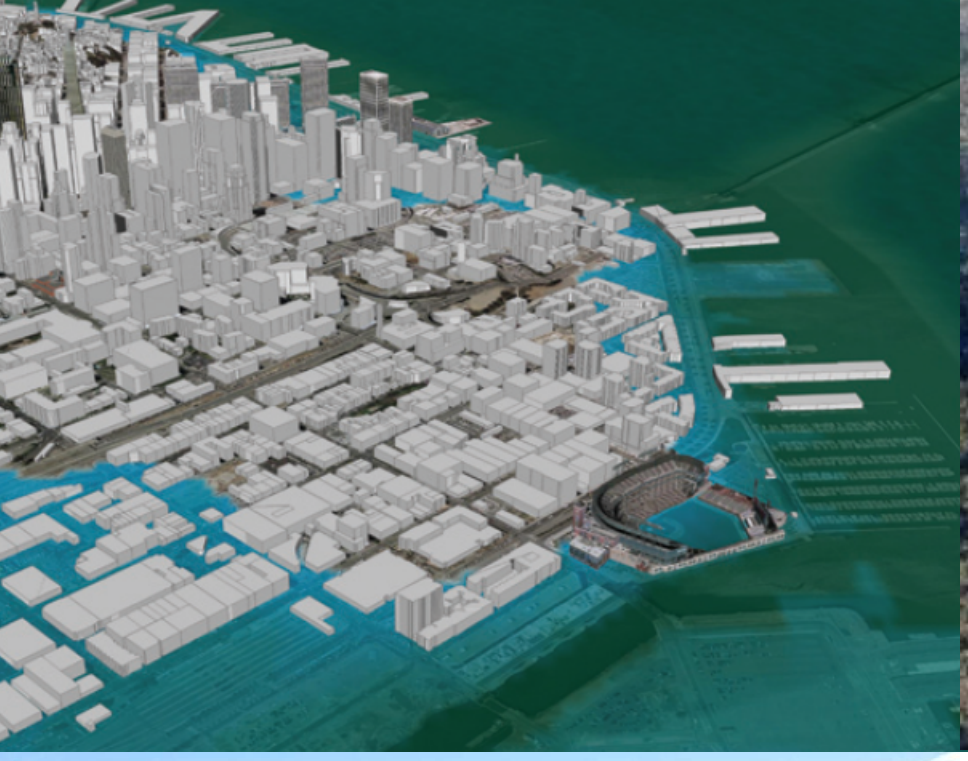
urbangreencouncil.org
@UrbanGreenNY
@BroylesYost

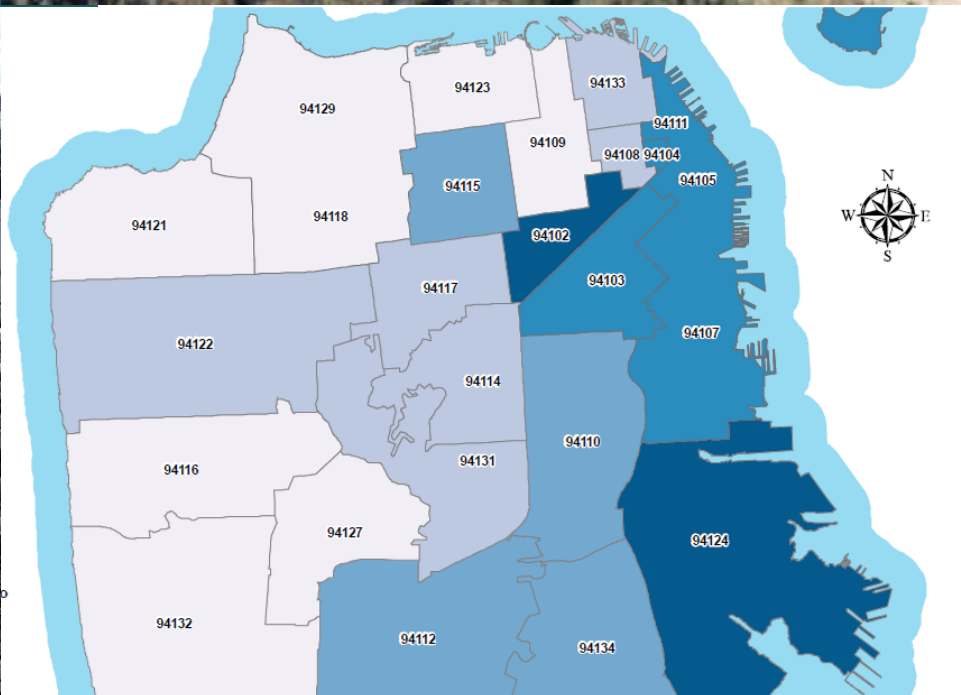
SF Environment
Our home. Our city. Our planet.
A Department of the City and County of San Francisco

Information as Energy Efficiency Accelerator

San Francisco Existing Commercial Buildings Energy Ordinance

Barry Hooper
Green Building Program
June 3, 2013

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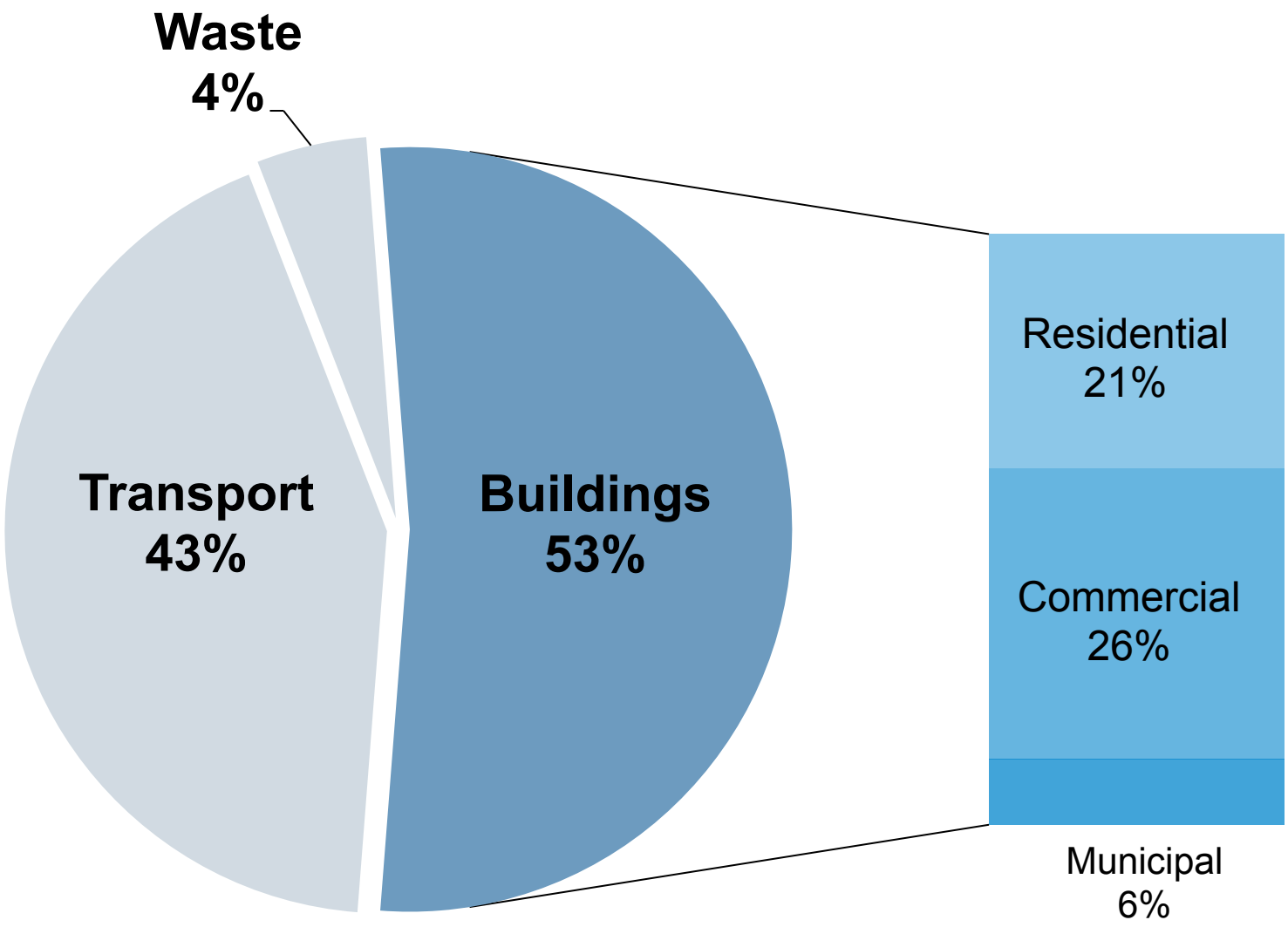
GHG Emissions from San Francisco



Sources: (2010) PG&E, Hetch Hetchy Water and Power, CA. Dept of Transportation, MTC, Muni, BART

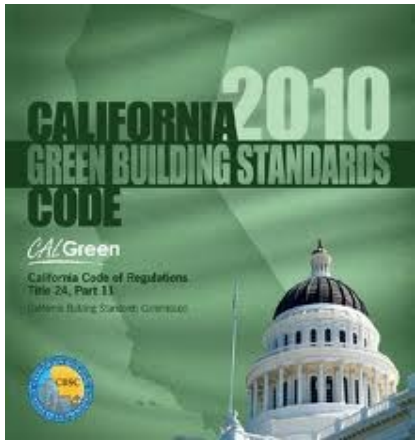
GreenFinanceSF

Saving You Money, Energy and Water

SAN FRANCISCO energy watch

ENERGY STAR

PG&E Pacific Gas and Electric Company®



Title 24

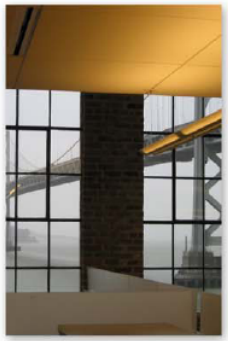
STATE OF CALIFORNIA ENERGY COMMISSION

Energy Compliance

U.S. GREEN BUILDING COUNCIL

LEED GOLD

2010

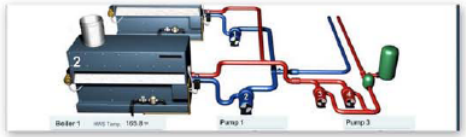


Mayor's Task Force
on

Existing Commercial Buildings

Final Report and Recommendations For The City and County of San Francisco

December 2009



Scope

- Existing Commercial

Composition

- Owners' Representatives
- Property Managers
- Contractors
- Operators
- Engineers
- Architects
- Finance
- Utilities

The Task

- Cost effective energy savings
- Minimum costs
- Measureable

Existing Commercial Buildings Ordinance

Commercial Stakeholders:
'We will manage what we measure.'

Benchmark

Action Plan

Transparenc

y

Existing Commercial Buildings Ordinance

3 year phase-in: 2011-2014

Mandatory:

- Benchmarking with limited public disclosure (every year)
- Energy audits or retrocommissioning (every 5 years)

Voluntary:

- Capital improvements
- Operations and calibration
- Tenant engagement
- Financing & incentives
- Policy as Customer Relationship Management

2011 ENERGY BENCHMARKING REPORT

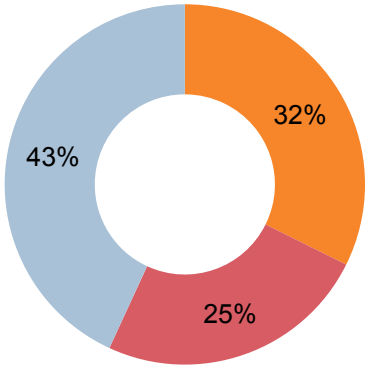
San Francisco Municipal Buildings

October 2012

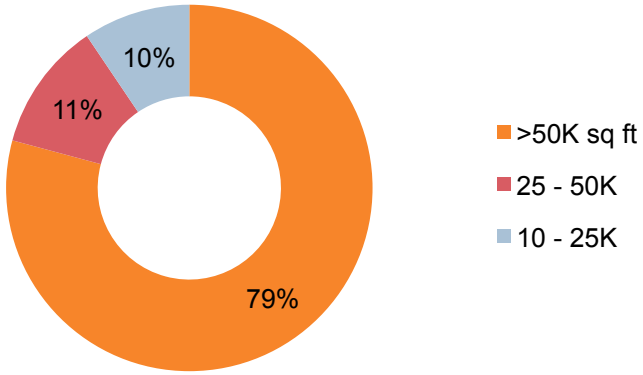
San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

Stock Affected

Private Sector Buildings



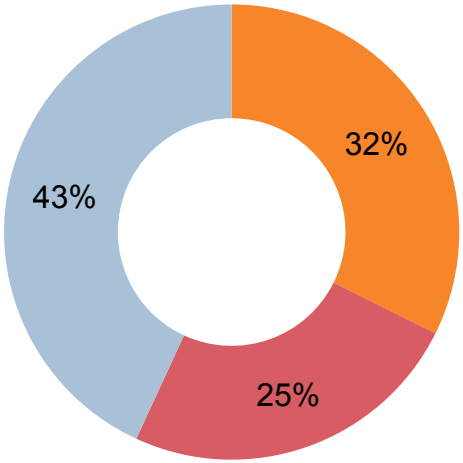
Private Sector Floor Space



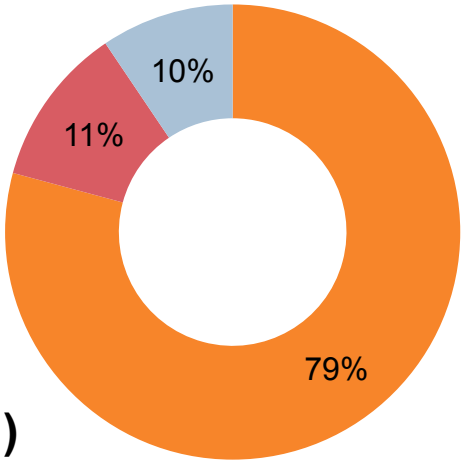
	Number of Buildings			Floor area (sq ft)		
Building Size	**Private Sector**	**Municipal**	**Total**	**Private Sector**	**Municipal**	**Total**
50K+	705	74	779	123,737,250	39,789,131	163,526,381
25K	535	22	557	17,772,305	732,512	18,504,817
10-25K	940	91	1,031	14,759,074	1,454,161	16,213,235
TOTAL	2,180	187	2,367	156,268,629	41,975,804	198,244,433

Stock Affected

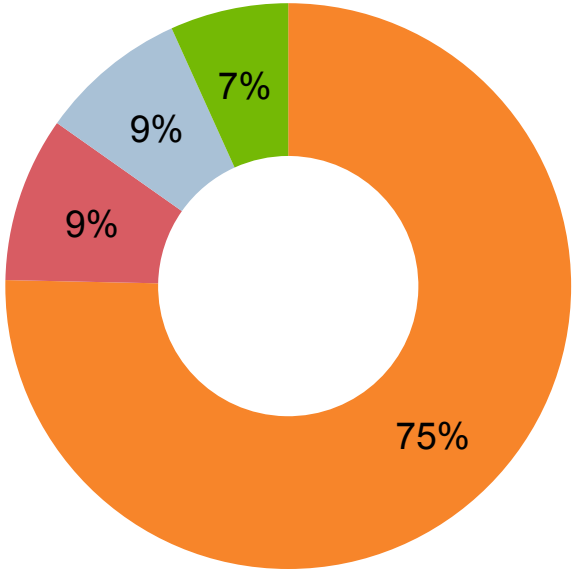
Private Sector Buildings



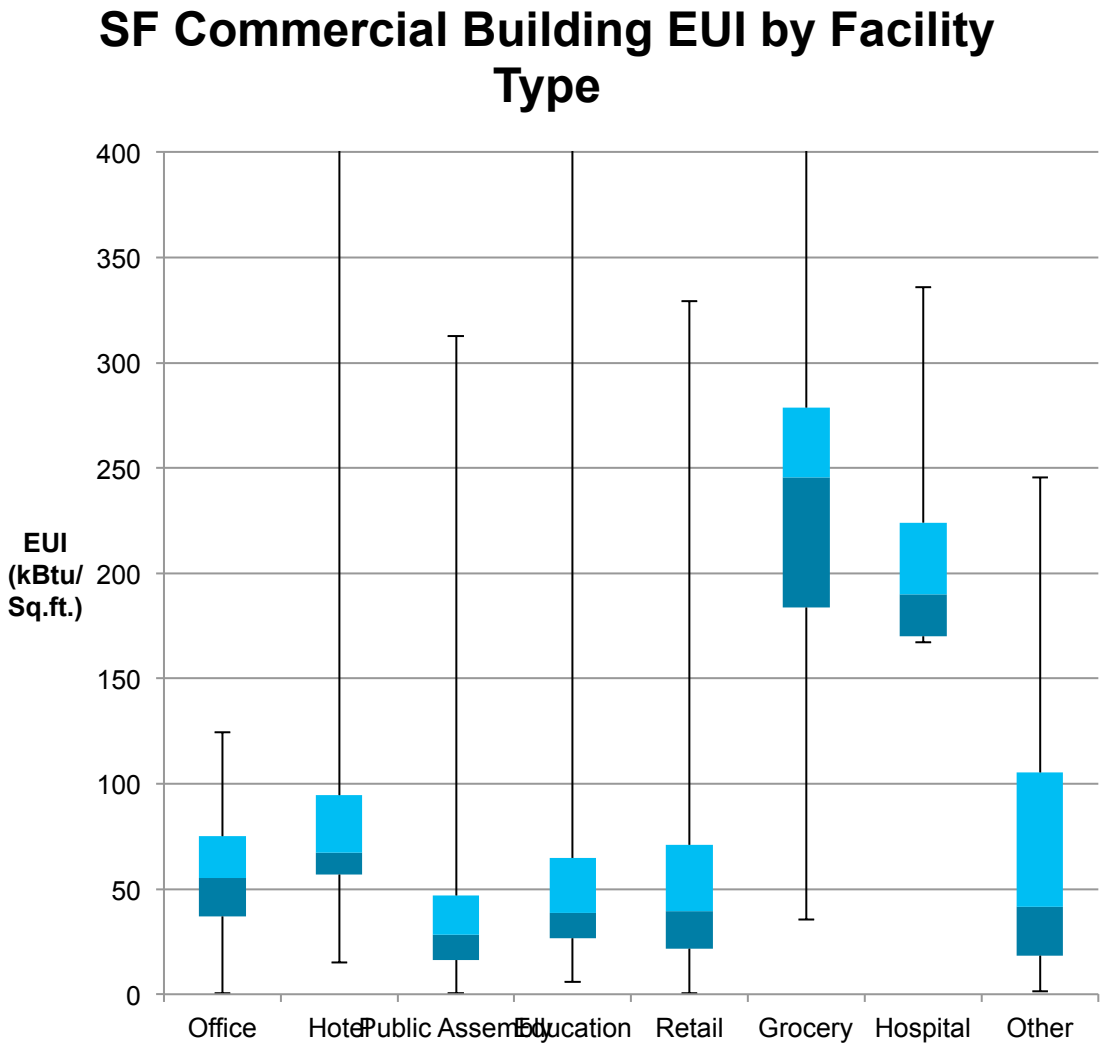
Private Sector Floor Area



Aggregate Energy Use (PG&E Proxy Benchmarking)

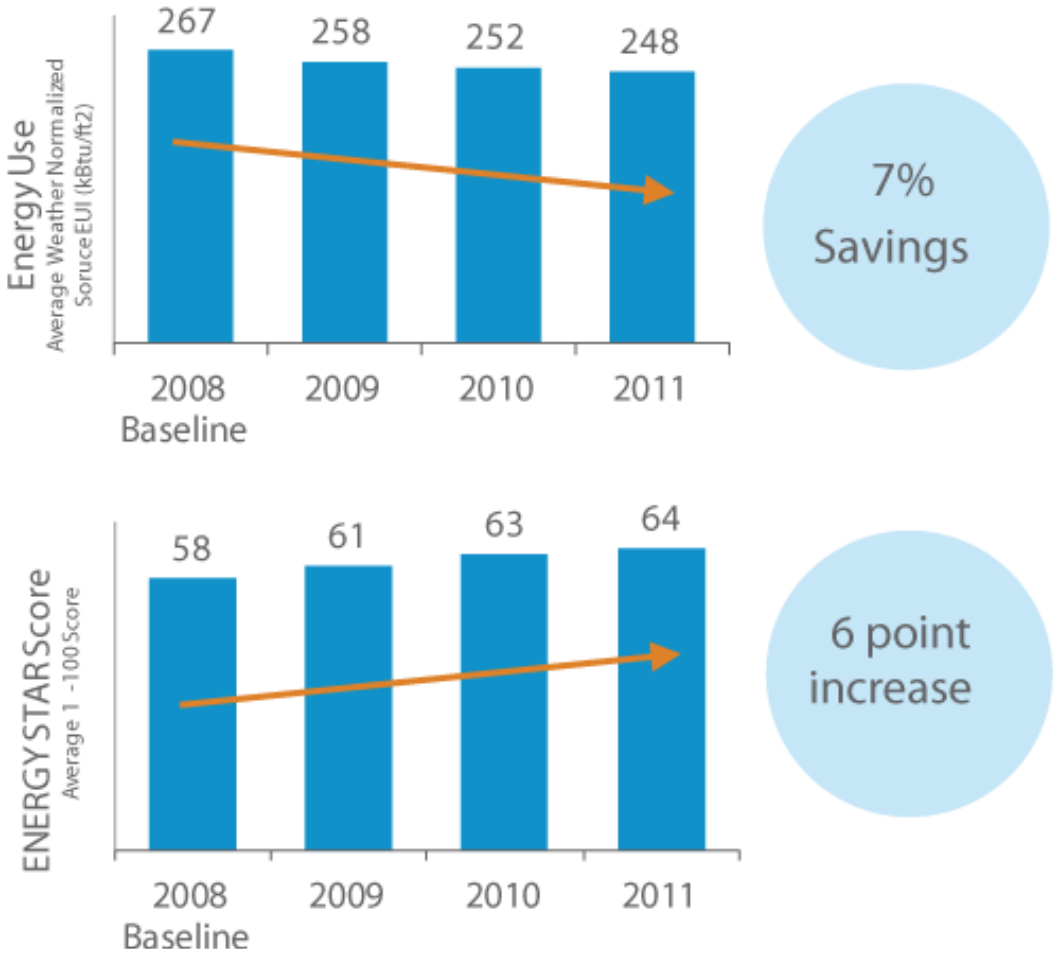


Preliminary Analysis



	Peak-median variation
Office	6.2
Hotel	2.6
Public Assembly	5.3
Education	4.0
Retail	6.7
Grocery	1.4
Hospital	1.2
Other	8.4

Measurement + Management = Real Savings



EPA Study:

35,000 buildings that benchmarked for 4 years.

Average benefits:

- 2.4% annual energy use reduction
- 7% average savings over 4 years
- Buildings with the lowest scores improved the most.

Source: US EPA 2012 “Data Trends: Benchmarking and Energy Savings”

“Benchmarking is crucial. Energy management has become a passion.”
— Garry Cook, Chief Engineer, 500 Washington

“Keep in mind that your competition is benchmarking and auditing; not doing so puts you at a competitive disadvantage.”
– Blake Peterson, Senior Property Manager, Orrick Building

“Knowing current performance is my starting point to improving energy efficiency.”
— Doug Peterson, Chief Engineer, Transamerica Pyramid

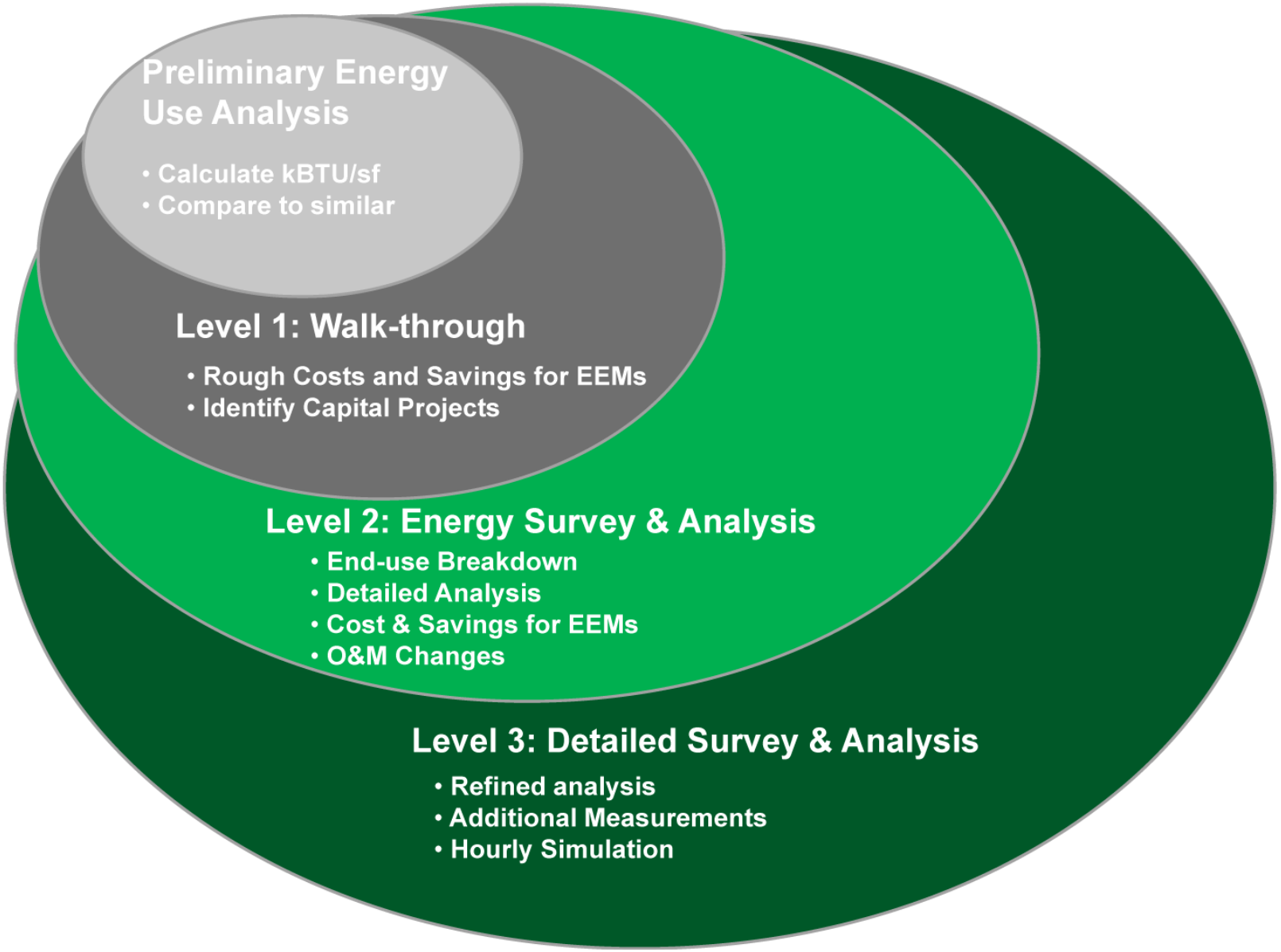
“PG&E’s auto benchmarking program takes the heavy lifting out of data entry, and frees you up to look for better ways to operate.”
— Danny Murtagh, Director of Engineering, Embarcadero Center

“We’re constantly finding new ways to save energy. We benchmark

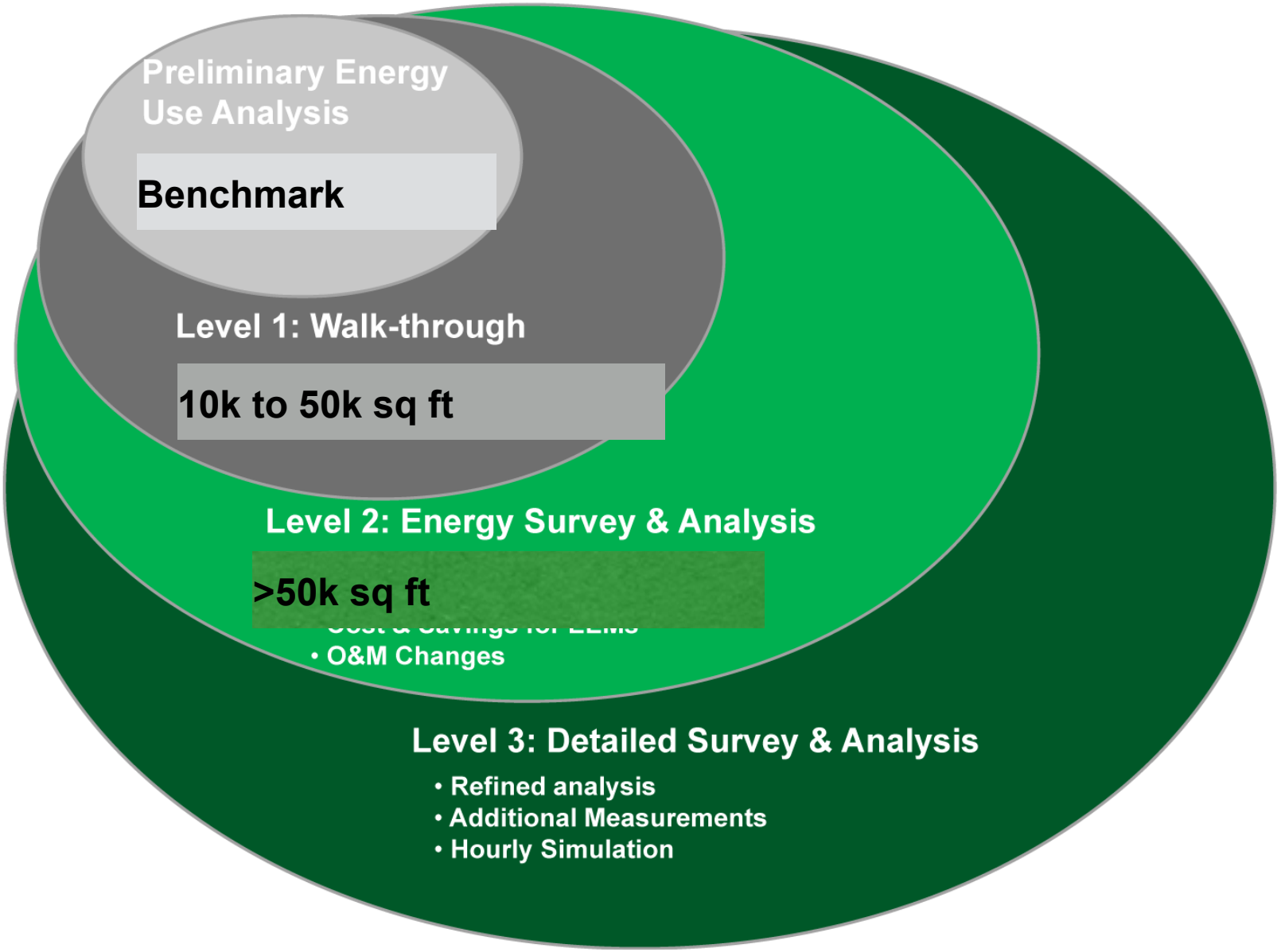
Relation to California Law

	SF ECB Ordinance	California AB1103
Requires	Benchmark and Audit	Benchmark only
Trigger	Annual	Transaction (sale, lease, refinance of entire building)
Tool	ENERGY STAR Portfolio Manager	
Inputs	Monthly energy consumption for the entire building and Basic characteristics (size, occupancy, use, hours of operation)	
Data Disclosed	Summary of annual energy performance: • 1to100 rating • Energy use per sq ft per year • GHG emissions from operations	All
Disclosure to	Public	Counterparty in transaction (available to CEC)

ASHRAE levels of effort

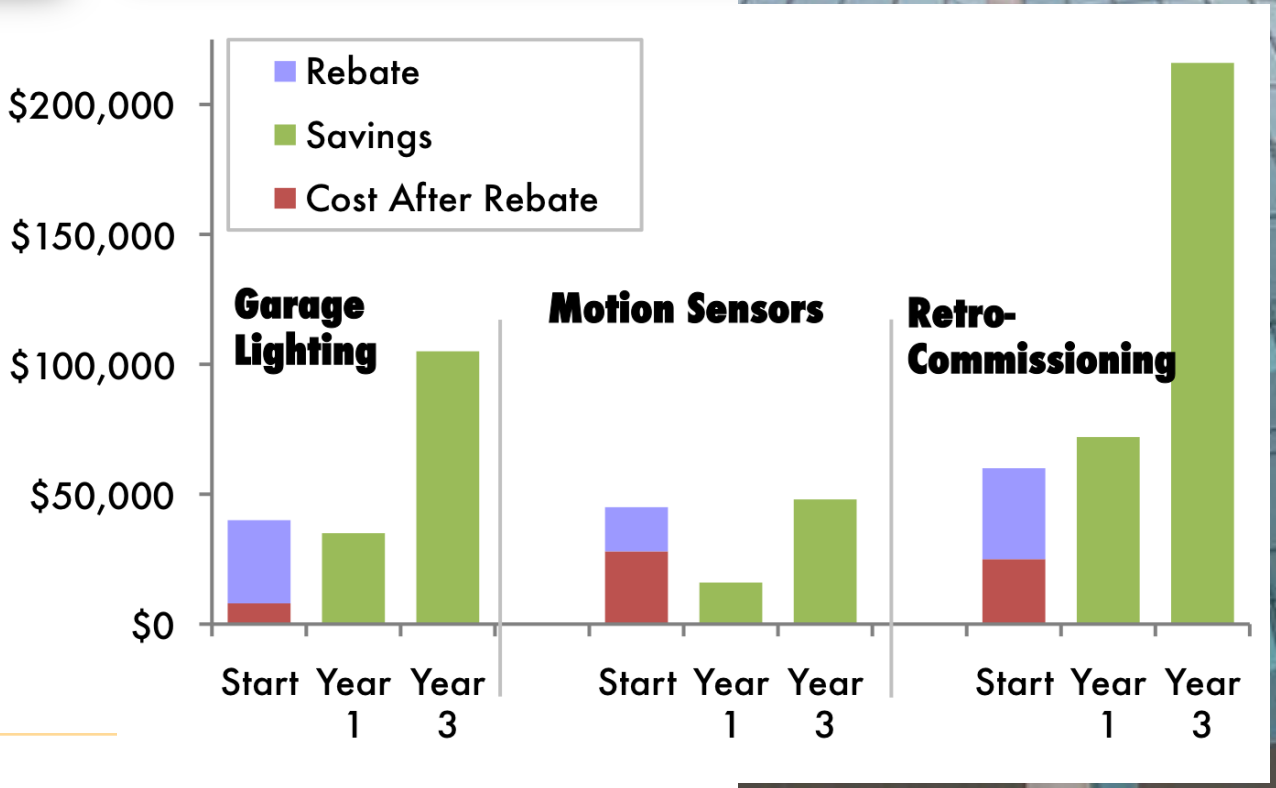


Audit requirements



"By benchmarking our hotel's energy use and identifying inefficiencies through an audit, we were able to maximize savings without sacrificing our customers' experience."

Peter Koehler,
General Manager
InterContinental Hotel



SAN FRANCISCO energy watch

Pacific Gas and Electric Company®

Case Study: Flood Building

- 290,000 sq ft historic landmark
- Level 2 in Q3 2012
- Updated lighting and HVAC controls
- $1.2M estimated lifetime savings

Image : Joe Mabel

Status (rough numbers)

Benchmarking Compliance

Year Due	Compliance Rate
2011	**78%**
2012	**75%**

Audits:

Summary of the first 130 Assessments (As of 5/20/2013)

	Electricity Savings (kWh)	Gas savings (therms)	Annual Energy Cost Savings	Cost	Utility Rebates	Net Cost	Simple Payback
Installed	5,991,275	74,535	$1,285,150	$10,649,917	$336,470	$10,313,447	5.1
Not (Yet) Installed	19,763,525	424,338	$3,766,294	$15,586,267	$2,059,100	$13,527,167	3.9

Learn more

www.sfenvironment.org/ecb
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415-992-6373

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Ph: (415) 355-3700
San Francisco Dept of Environment

SF Environment

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