DOE Technical Assistance Program

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

SEE Action Series: Energy Performance Benchmarking and Disclosure Policies for Public and Commercial Buildings

July 26, 2012

What is TAP?

DOE's Technical Assistance Program (TAP) supports state, local, and tribal officials, by providing them with tools and resources needed to implement successful and sustainable clean energy programs

TAP Transition

- Last fall, DOE announced that TAP would be transitioning to a new, post-ARRA framework
- Over last several months, TAP has conducted an assessment of the services we offer and needs of our constituencies
- DOE has continued to facilitate peer exchange, and we encourage you to get involved now: http://www1.eere.energy.gov/wip/solutioncenter/peerexchangehub.html

Stay Tuned!

- Stay tuned for announcements over the next several weeks regarding:
  - Additional upcoming webcasts
  - Availability of direct technical assistance
  - Other new and exciting resources
- Today's webcast will be available online: http://www1.eere.energy.gov/wip/solutioncenter/webcasts/default.html
- Don't hesitate to contact us at: TechnicalAssistanceProgram@ee.doe.gov

SEE Action

STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

SEE Action Existing Commercial Buildings Working Group

Energy Performance Benchmarking and Disclosure Policies for Public and Commercial Buildings

Cliff Majersik, Institute for Market Transformation
Marshall Duer-Balkind, Washington, DC District Department of the Environment
Barry Hooper, San Francisco Department of the Environment

July 26, 2012

Agenda

- SEE Action Overview
- Introduction to Benchmarking & Disclosure Policies
- Local Government Example: Washington, DC
- Local Government Example: San Francisco, CA
- Related DOE Initiatives
- Discussion

SEE Action

STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

SEE Action Overview

What is SEE Action?

A state and local effort facilitated by the federal government that helps states, utilities, and other local stakeholders take energy efficiency to scale and achieve all cost-effective energy efficiency by 2020.

For more information, visit:
www.seeaction.energy.gov

SEE Action
STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

SEE Action Leadership

- **Executive Group** of more than 30 stakeholders including state and local governments, associations, business leaders, non-governmental organizations, and others.
- **Eight Working Groups** help SEE Action achieve its goal of capturing all cost-effective energy efficiency by 2020.

SEE Action
STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

Commercial Working Group: Motivation

- The majority of office space that will be used in next decade has been built.
- Commercial buildings use:
  - ~50% of U.S. building energy use.
  - ~20% of total U.S. energy use and GHG emissions.
- Public buildings are ~25% more energy-intensive than private buildings.
- Commercial building owners/managers spend more than $2 per sq. ft. on energy.
- ~5 to 15 jobs created per $1M invested in energy efficiency.
- Energy-efficient buildings have higher occupancy levels, lease rates, and sales prices.

Commercial Energy Efficiency Policies and Programs

- Drive Demand for Energy Efficiency
  - **Benchmarking, Rating, and Disclosure**
  - **Retro-commissioning**
  - Ratepayer-funded Programs
  - Public-Private Partnerships (Energy Challenges)
- Enable Efficiency Operations and Investment
  - **Strategic Energy Management**
  - **High-Performance Leasing**
  - Financing Innovation
- Build the Workforce
  - Education & Training
  - Materials
  - Certification
- Move the Market
  - High-Performance Procurement
  - Emerging Technology Demonstration

SEE Action
STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

www.seeaction.energy.gov

Commercial Working Group: Resources

- Fact sheets: benchmarking, rating, and disclosure; retro-commissioning; high-performance leasing; strategic energy management programs
- Model policy design guides: benchmarking, rating, and disclosure; retro-commissioning (under development)
- Expert / peer support: guidance on adopting and enhancing policy and program solutions

Have other ideas?
Please let us know.

How Local Governments Can Get Involved

- Download and share SEE Action resources.
  - Visit http://www1.eere.energy.gov/seeaction/existing_commercial.html .
- Tell us your story.
  - E-mail cody.taylor@ee.doe.gov and let us know what you're doing to promote energy efficiency in existing commercial buildings.
- Share your data.
  - E-mail cody.taylor@ee.doe.gov to participate in the SEED platform or asset rating pilots.
- Request assistance.
  - E-mail cody.taylor@ee.doe.gov and let us know which policy/program you are interested in learning more about.

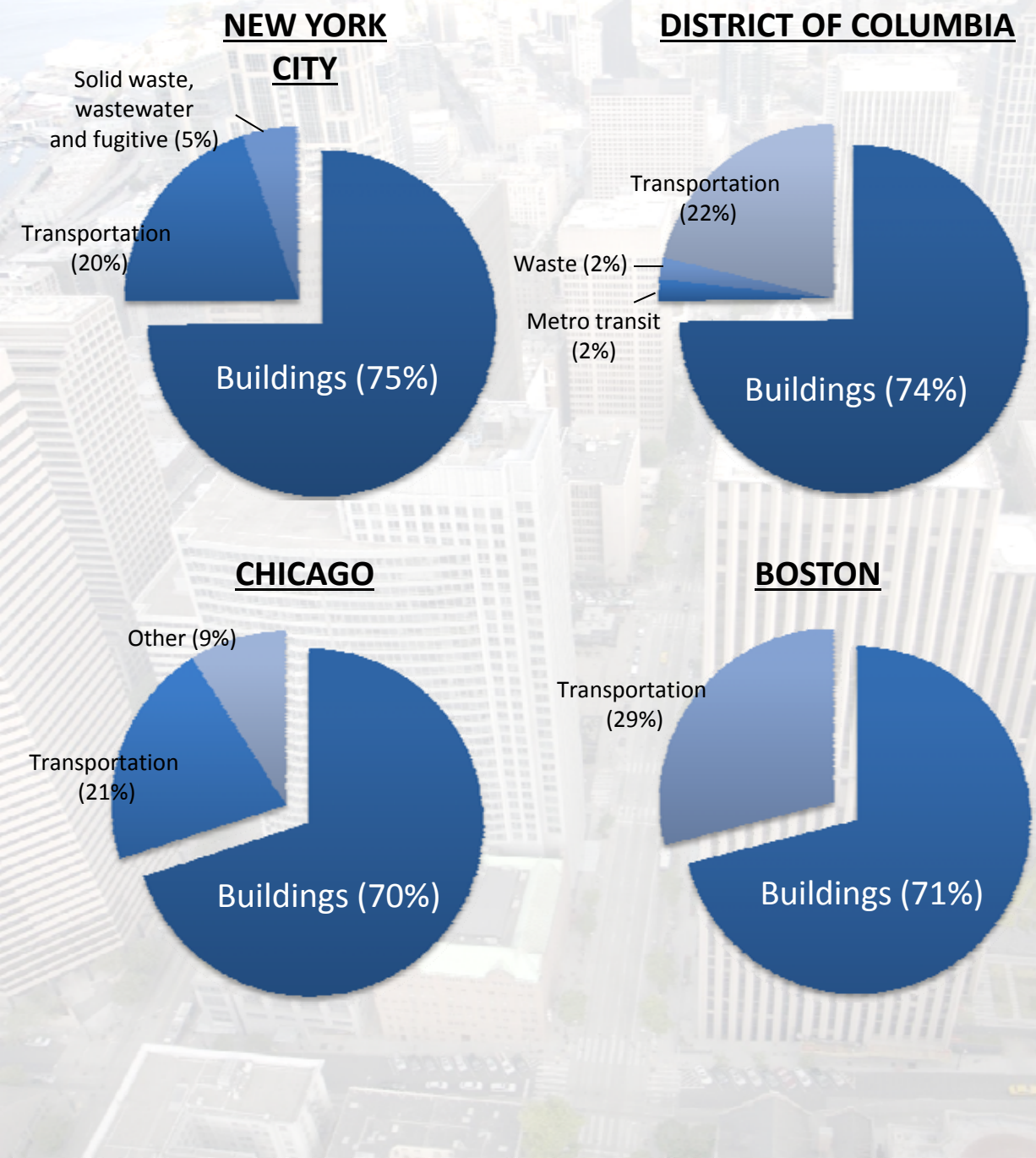
Energy Benchmarking and Reporting:

City and State Policy Overview

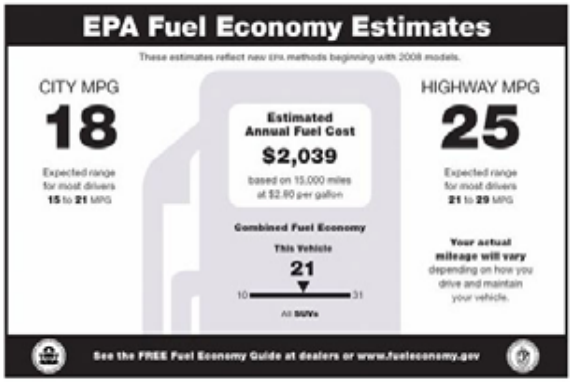
July 26, 2012 | State Energy Efficiency Action Network (SEE Action)

Cliff Majersik
Executive Director
Institute for Market Transformation
cliff@imt.org

Greenhouse Gas Emissions in Major Cities



In large cities with good public transportation, buildings typically account for 70% or more of CO_2 emissions and energy usage.



No information = no action

Cities are looking at what drives demand and competition in other industries

- How can markets work more effectively?
- How can demand increase without public subsidies?
- How can policy help reduce energy costs for businesses and consumers and create jobs?

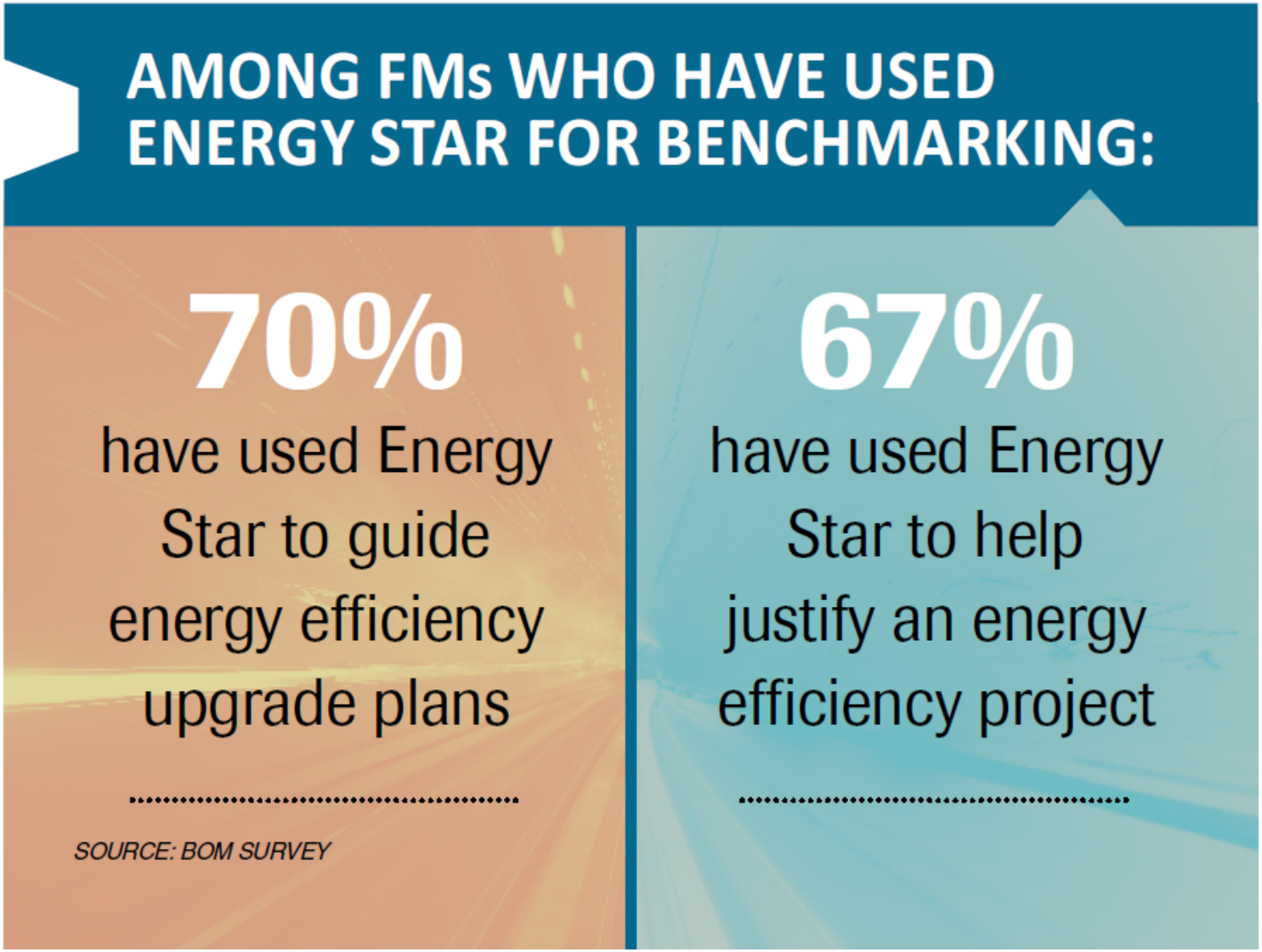
Building Energy Rating and Disclosure

"When performance is measured, performance improves. When performance is measured and reported back, the rate of improvement accelerates."

A Virtuous Cycle

One result:
Exceptionally cost-effective peak load reductions

IMT Institute for Market Transformation



Benchmarks Guide Investment

IMT Institute for Market Transformation

Survey of hundreds of facility managers .
Audin, Lindsay. "Finding Your Best Energy Opportunity."
Building Operating Management. December, 2011.

ENERGY STAR
Portfolio Manager

www.energystar.gov/benchmark

- Free, Online Tool
- Track Record since 1999
- Management Tool
  - Assess whole building energy and water consumption
  - Track change in energy, water, carbon emissions, & cost over time
  - Track green power purchases
  - Share/report data with others
  - Create custom reports
  - Apply for ENERGY STAR certification
  - Apples-to-Apples comparison with similar buildings

ENERGY STAR
Portfolio Manager

www.energystar.gov/benchmark

- Metrics Calculator
  - Energy consumption (source, site, weather normalized)
  - Water consumption
  - Greenhouse gas emissions (indirect, direct, total, avoided)
  - ENERGY STAR 1-to-100 score
    - For 15 building types
    - 75+ for Energy Star label
- Required data
  - Square feet by space type
  - Space Use Attributes
  - Zip Code
  - 12 months of Utility Data

Industry Standard

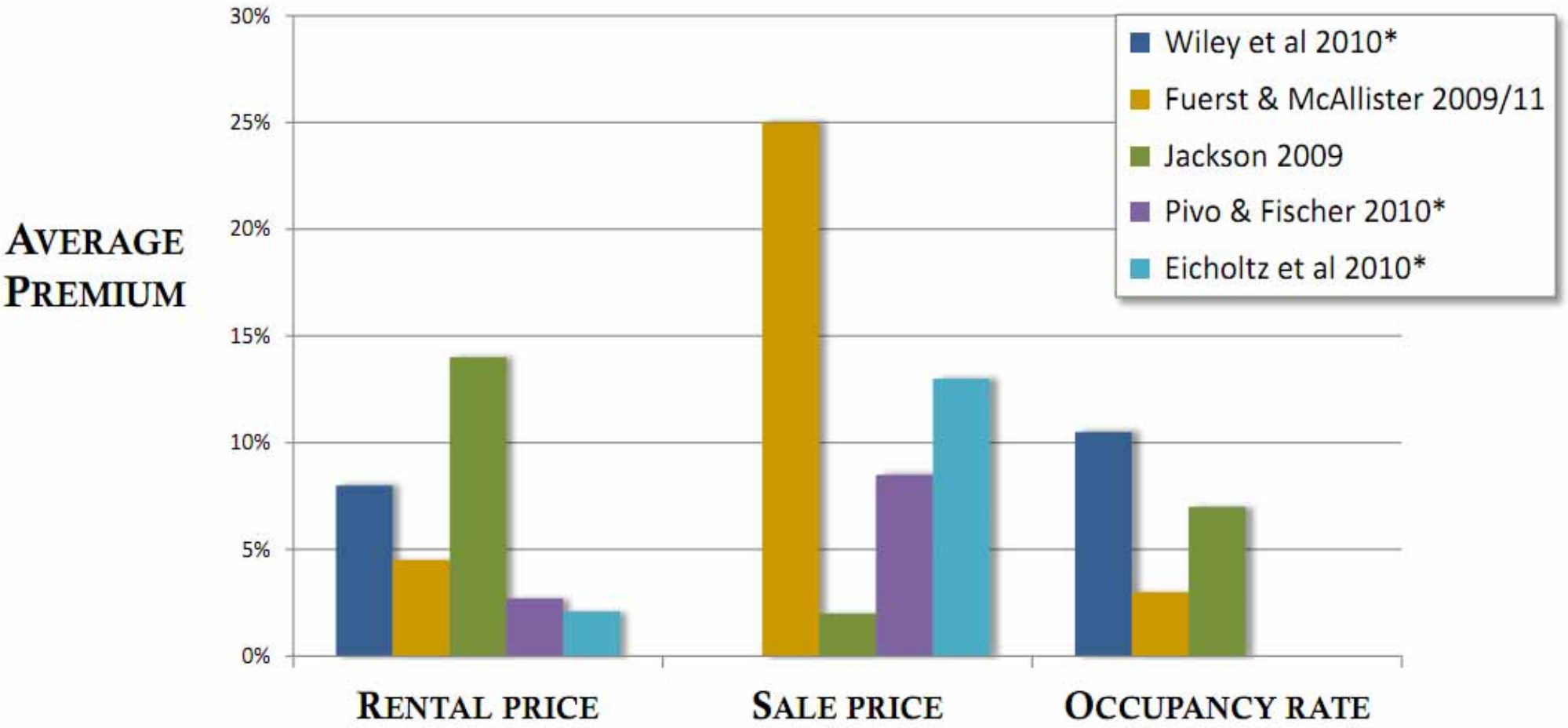
>250,000
commercial buildings

>40,000
individual accounts

27 billion sq. ft.
of commercial & institutional office space

Nearly **40%**
of commercial market

Added Value of ENERGY STAR-Labeled Commercial Buildings in the U.S. Market



ENERGY STAR-Labeled Buildings Command Market Premiums

IMT Institute for Market Transformation

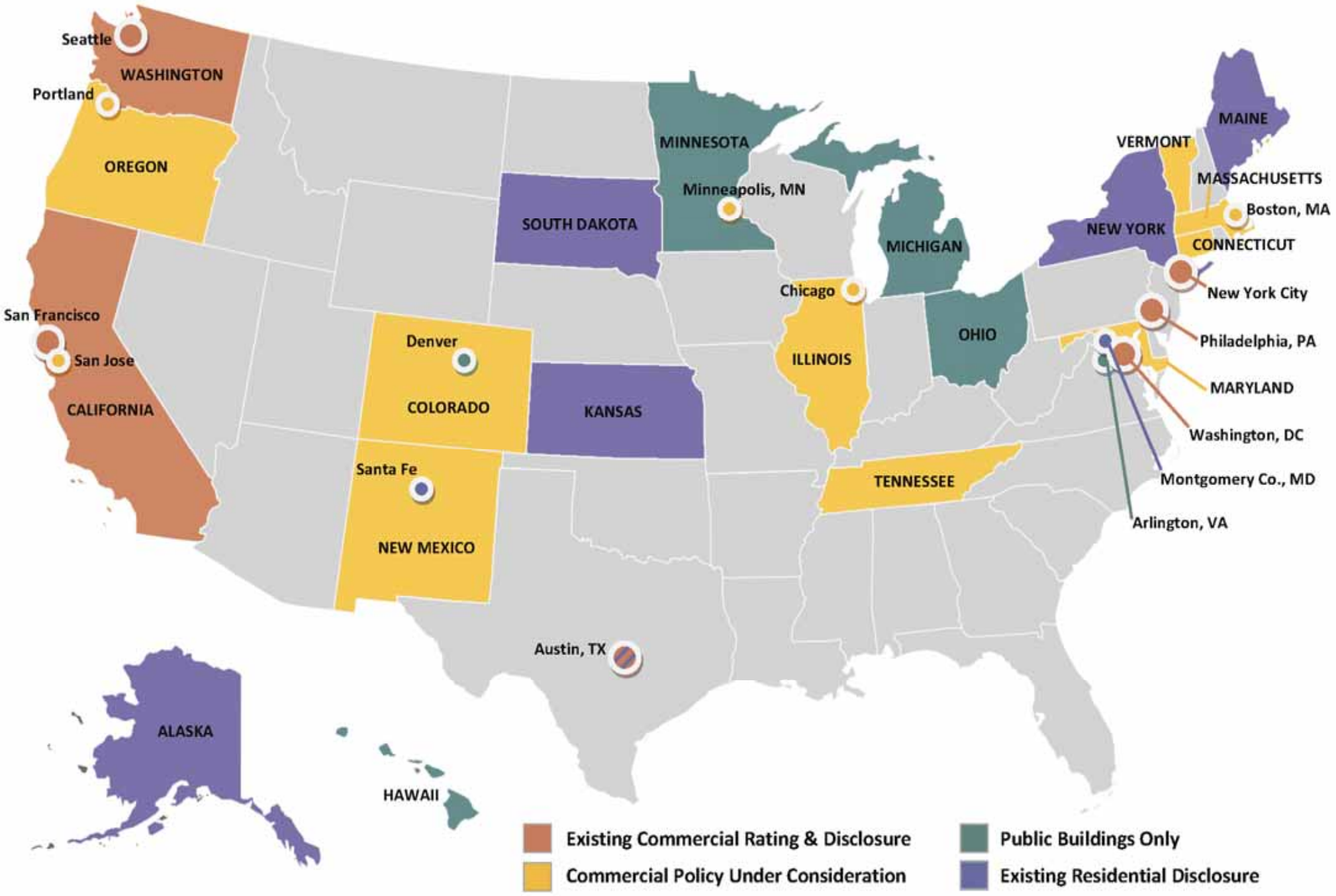
Saving $ and the Environment

Through 2011, nearly

16,500 ENERGY STAR Certified buildings

- Saved nearly $2.3 billion in energy costs annually
- Reduced the equivalent of 12 Million Metric Tons of CO_2 a year
  - Equivalent to the emissions from electric use of over 1.5 million homes

BENCHMARKING AND DISCLOSURE POLICIES, 2007 - PRESENT



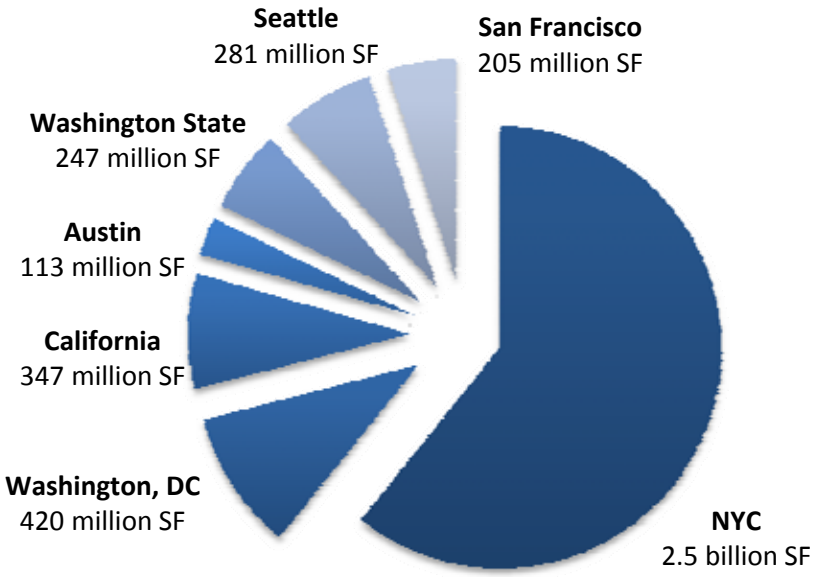
LOCAL REQUIREMENTS AND POLICY STATUS

Jurisdiction	Benchmarking (Building Type and Size)		Reporting	Disclosure					Audits	RCx
	Non-residential	Multi-family	To local gov't	On public web site	To tenants	To transactional counterparties				
						Sale	Lease	Financing		
Austin	10k SF+	5+ units	✓	-	-	✓	-	-	✓	-
California	10k SF+	-	✓	-	-	✓	✓	✓	-	-
Washington, DC	50k SF+	50k SF+	✓	✓	-	-	-	-	-	-
New York City	50k SF+	50k SF+	✓	✓	-	-	-	-	✓	✓
San Francisco	10k SF+	-	✓	✓	✓	-	-	-	✓	-
Philadelphia	50k SF+	-	✓	✓	-	✓	✓	-	-	-
Seattle	10k SF+	5+ units	✓	-	✓	✓	✓	✓	-	-
Washington state	10k SF+	-	-	-	-	✓	✓	✓	-	-

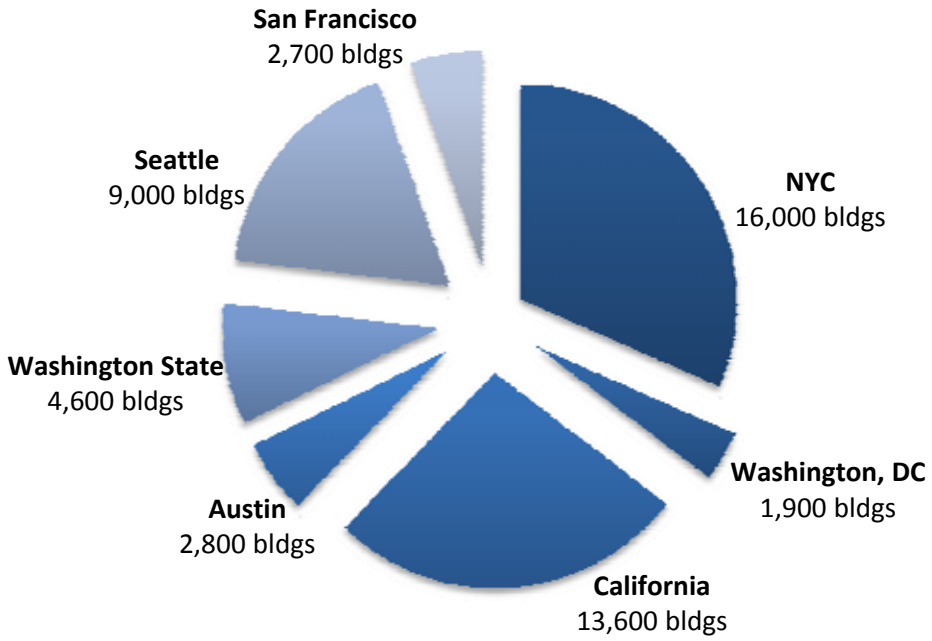
Boston	Under Consideration
Boulder	Under Consideration
Cambridge	Under Consideration
Chicago	Under Consideration
Minneapolis	Under Consideration
Portland	Under Consideration
San Jose	Under Consideration

Existing policies will impact more than 60,000 buildings totaling more than 4 billion SF 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

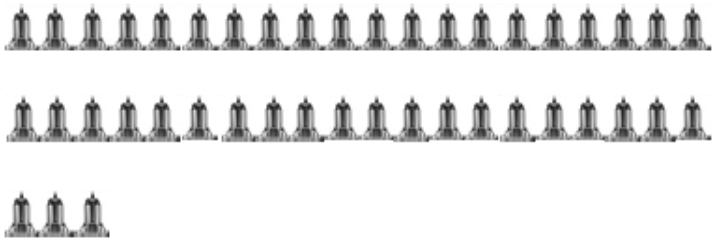


New York City Greener, Greater Buildings Plan

- Energy benchmarking and public disclosure for large buildings, + mandatory audits, RCx, lighting upgrades and tenant sub metering
- NYC buildings account for $15 billion annually in energy costs, 94% of NYC electricity usage
- Properties over 50,000 SF account for ~2% of building stock by number, but 50% of floor area
- Stock will exist for many, many years

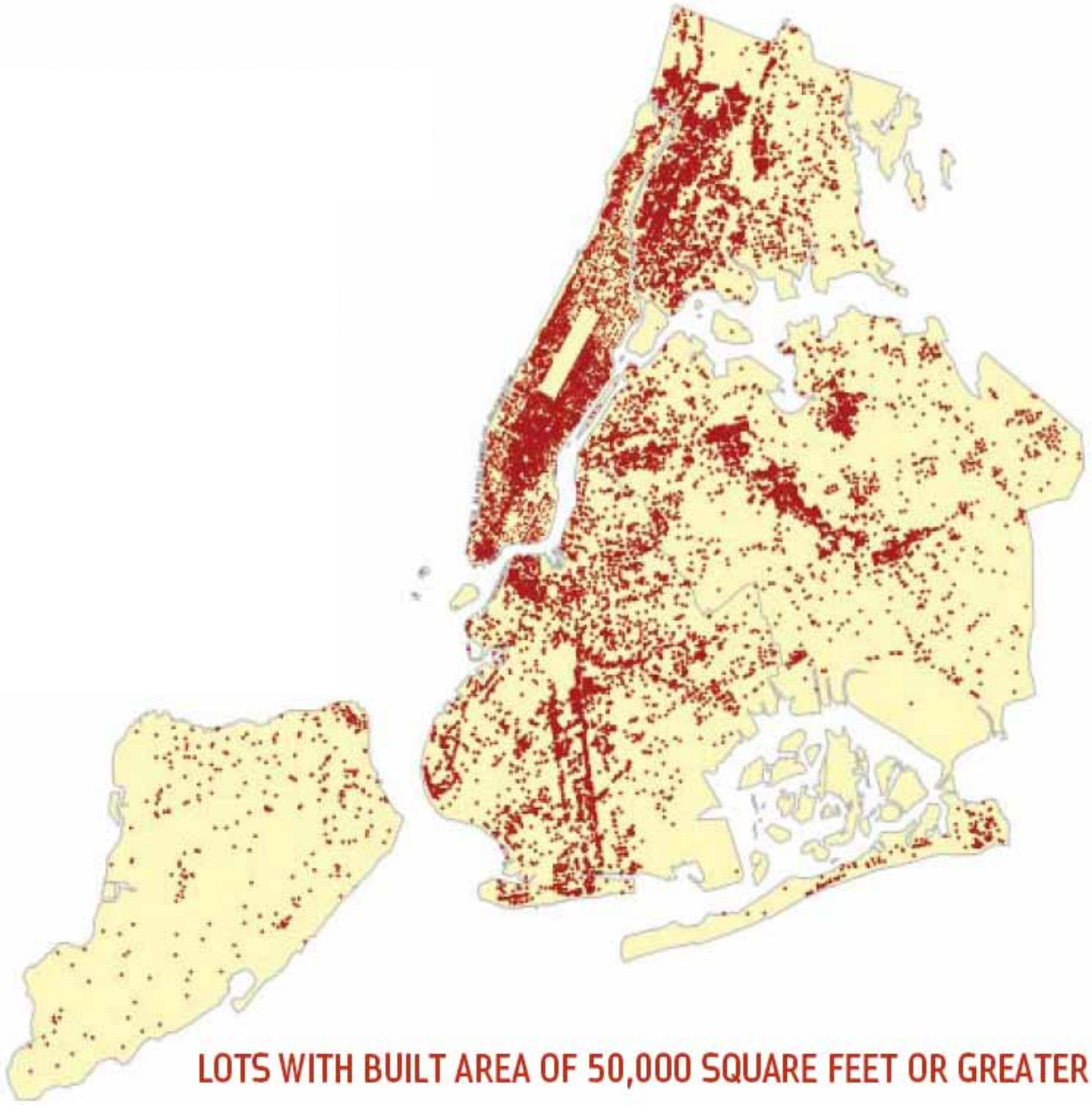
Existing Building Stock in NYC

= 1 million buildings existing today



= 85% will still exist in 2030

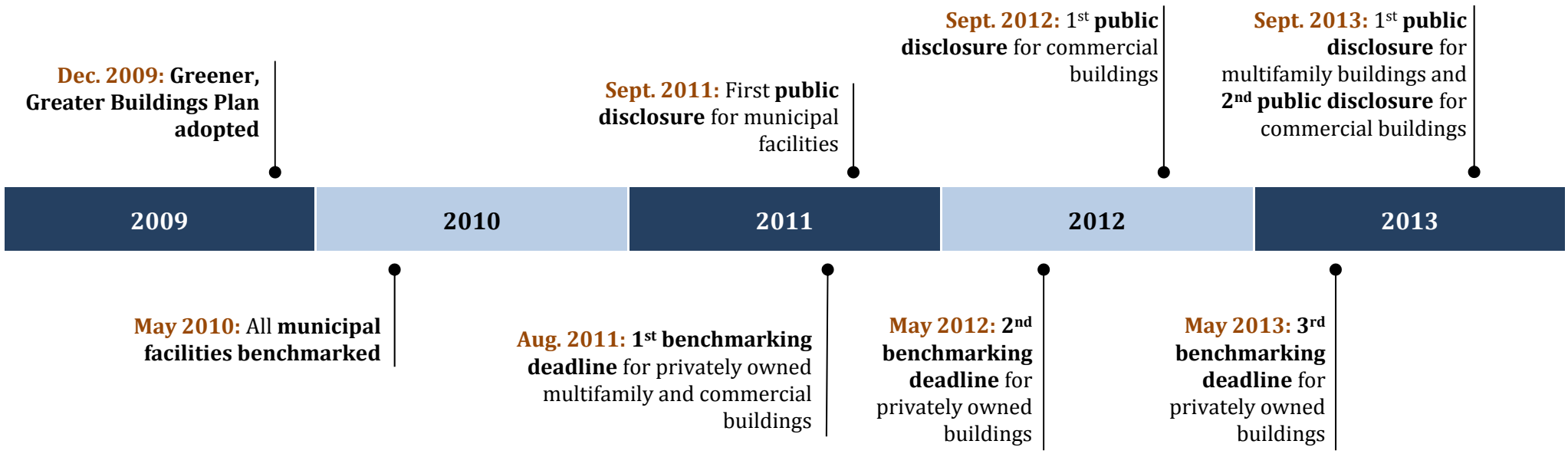
= 20,000 buildings



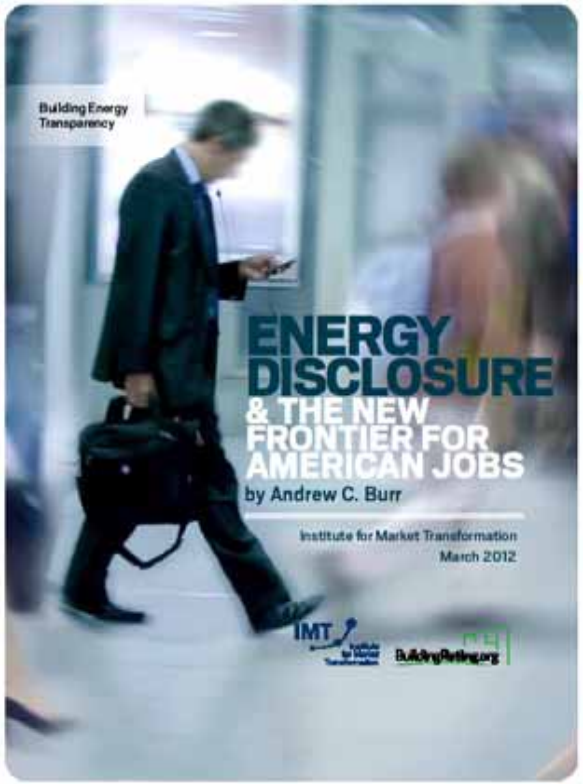
Rendering courtesy NYC Mayor's Office of Long-Term Planning and Sustainability

Year 1 results: New York City

- Approximately 75% overall compliance
  - Major outreach and training effort
  - Benchmarking help center by CUNY/NYSERDA
  - Data supplied by ConEd
- Significant participation by energy efficiency services vendors and consultants
- More than 2,300 city buildings benchmarked and disclosed
- City-wide aggregate analysis of building energy data to be published
- Year 2 compliance deadline was May
- Benchmarking data for commercial buildings published in Sept. 2012



- Economic analysis of benchmarking and disclosure policy advised by leaders from USGBC, TIAA-CREF, Jones Lang LaSalle, CB Richard Ellis NYU, Bentall Kennedy
  - Create more than 59,000 net new jobs in 2020
  - Reduce energy costs for building owners and businesses by $18 billion in 2020



- Job creation study in New York City found service providers hiring as a result of Greener, Greater Buildings Plan
  - Primary issue is demand, not financing
  - Lots of competition among vendors to engage owners on benchmarking with other requirements pending

DATA | Data Access and Transparency Alliance

- BOMA, RER, IMT, USGBC form DATA Alliance to work with utilities and regulators to secure better access to utility data
- July 2011: NARUC approves resolution calling on regulators to provide better data access to commercial owners
- USGBC Existing Authorities memo identifies data access as key EE barrier and calls for increased federal involvement
- Collaboration with administration on expanding Green Button initiative to include commercial data access

IMT Institute for Market Transformation · BOMA International · The Real Estate Roundtable · Enterprise · U.S. Green Building Council · NRDC

Cliff Majersik

Executive Director
Institute for Market Transformation
cliff@imt.org

www.imt.org
www.buildingrating.org
www.energydataalliance.org

DISTRICT DEPARTMENT OF THE ENVIRONMENT

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Energy Benchmarking in the District of Columbia

Marshall Duer-Balkind

Program Analyst, Office of Policy and Sustainability

District Department of the Environment

Government of the District of Columbia

State Energy Efficiency Action Network (SEE Action)

Webinar on Energy Performance Benchmarking & Disclosure Policies

July 26, 2012

Why Benchmark?
For Building Owners

- Rate and compare performance
- Manage energy and water consumption
- Calculate carbon footprint
- Set investment priorities
- Verify and track progress of improvement projects
- Option to gain ENERGY STAR certification
- Attract Tenants

- Utilities are the largest single expense for building owners:

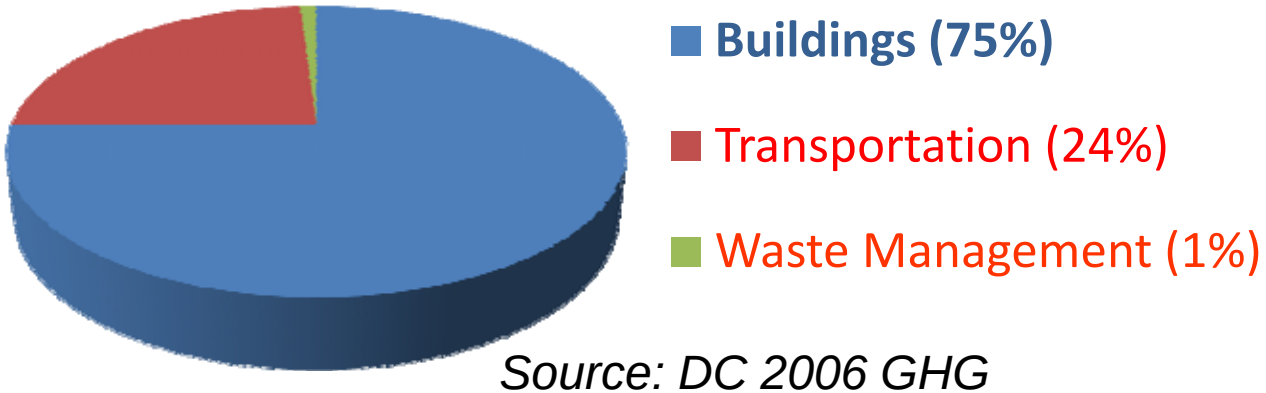
32% - Utilities

22% - Repairs/Maintenance
21% - Admin
5% - Security
1% - Grounds

Source: BOMA

Why Benchmarking? For Communities

Buildings are largest source of DC's Greenhouse Gas Emissions:



Source: DC 2006 GHG Inventory

- Low-cost approach to overhaul of building stock
- Granular energy data
- Market transformation
- National Leadership

DC Requirements: Existing Buildings

Clean and Affordable Energy Act of 2008:

- ENERGY STAR Portfolio Manager benchmarking & public reporting
  - Public Buildings >10,000 sq. ft. (~250)
  - Private Buildings >50,000 sq. ft. (~1,800), phased in by building size
- First law of its kind in the country
- Implementing regulations still being finalized; expect data later in 2012

DC Requirements: New Buildings

- CAEA also requires projects that submit 1st building permit after January 1, 2012 to model their energy performance using the ENERGY STAR Target Finder Tool and report results to District for publication
- Unique nationwide

DESIGNED TO EARN THE ENERGY STAR

The estimated energy performance for this design meets US EPA criteria. The building will be eligible for ENERGY STAR after maintaining superior performance for one year.

Stumbling blocks in implementation in DC

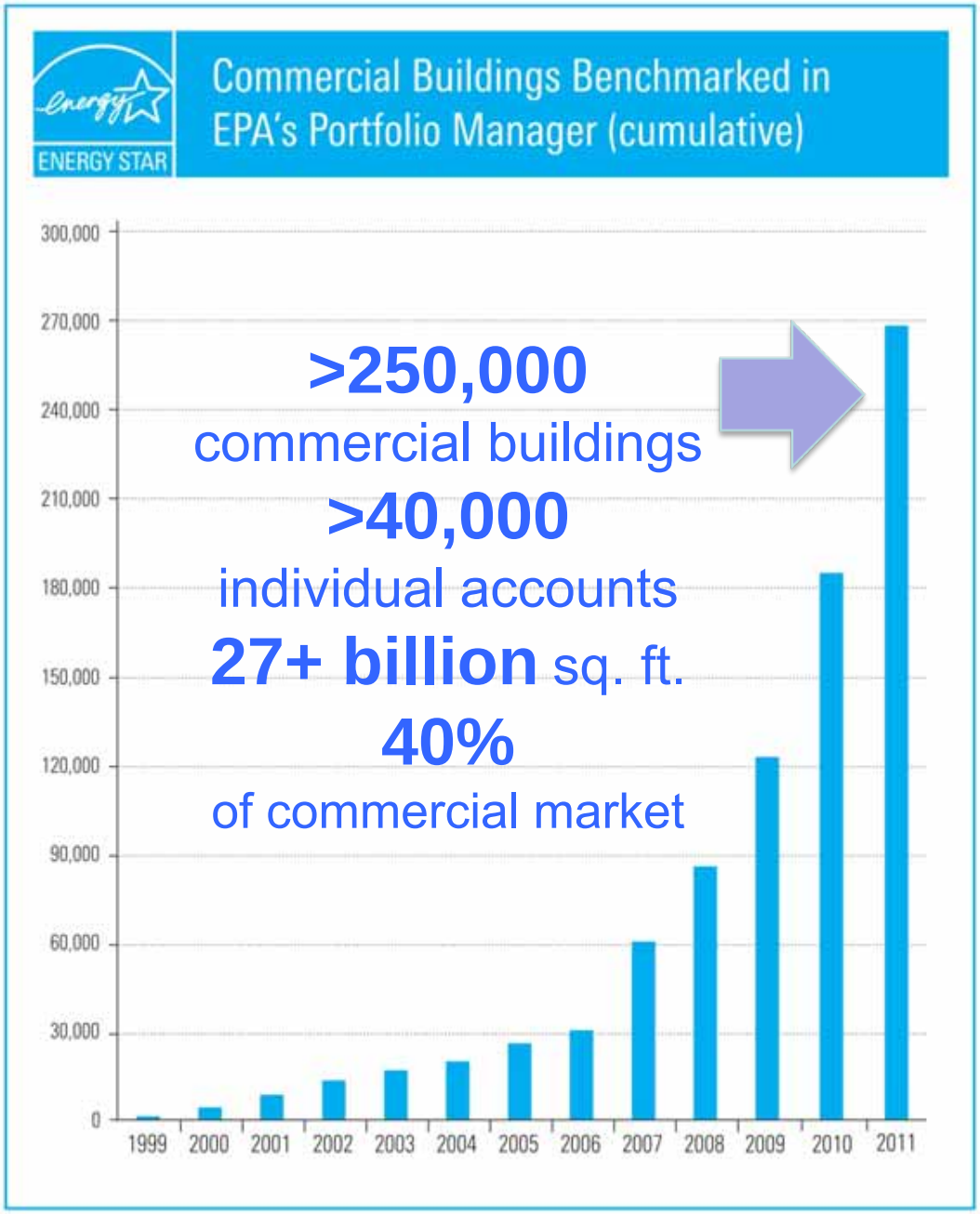
- Lack of dedicated funding source for implementation
- Shift to include residential sector
- More complex than initially anticipated
- Data access challenges
- Need for trainings and outreach

Key Decision Points

1. The Tool
2. Building Classes and Sizes
3. Data Access
4. Disclosure
5. Engagement

#1: The Tool
ENERGY STAR Portfolio Manager

- Operational Rating
  - Delivers energy performance metrics based on utility & space use info
- Free, online, relatively easy to use (about to get easier)
- 1-100 score for many building types
- Strong support from EPA
- Strong brand recognition
- 12-year track record
- Industry-standard
- GSA Requirements



#2: Building Classes

Start with public buildings—lead by example

Large commercial buildings

- Higher adoption rate — especially so in DC

Multifamily buildings

- Makes most sense in places with large stocks of multifamily buildings
- EPA working to create score for multifamily

#2: Building Sizes

Economies of scale > 50,000 square feet:
9% of comm. buildings, 73% of comm. building area
Relatively Sophisticated Class of Owners

Building Size (g.s.f.)	1st Utility Year Data	Original 1st Reporting Deadline	Projected 1st Reporting Deadline	% of Covered Buildings	% of Covered Building Area
200,000+	2010	July 1, 2011*	Fall 2012*	36%	66%
150,000+	2011	April 1, 2012*	Fall 2012*	47%	76%
100,000+	2012	April 1, 2013	April 1, 2013	62%	86%
50,000+	2013	April 1, 2014	April 1, 2014	100%	100%

* Deadlines for 2010 and 2011 data are in flux based on the ongoing rulemaking process
Deadlines will be annually on April 1 following initial reporting

#3: Utility Data Access

sustainable.dc

Problem: Owners can't easily access all tenant data

Solution: Aggregate Whole-Building Utility Data

- Critical to success in other cities
- Privacy?
- Gold standard: direct one-click upload to ESPM
- National support: BOMA, RER, USGBC, NARUC
- Legislative and/or Public Utility Commission solution may be needed

Green Button

DATA | Data Access and Transparency Alliance

#3: Utility Data Access
Non-Residential Tenants

Solution for Non-Residential Buildings:

- Owner or agent must ask non-residential tenants for space use and energy and water consumption data
- Non-residential tenants are required to provide data (fines up to $100/day)
- If tenants still don't cooperate, owner/agent can submit a partial building report without this data and report the non-compliant tenant
- If tenant then provides data, updated benchmarking report must be submitted to DDOE within 30 days

#3: Utility Data Access
Residential Tenant Data

sustainable.dc

Interim Solution for Residential Buildings:

- No data collection from residential tenants.
- Master-metered buildings can be benchmarked as whole buildings
- For other buildings, submit partial building data:
  - Space use info as known by owner/manager
    - District is making mandatory most of the optional fields for this space type in Portfolio Manager
  - Any master meter data
  - Common area meter data
  - Energy and space use data from any non-residential tenants present

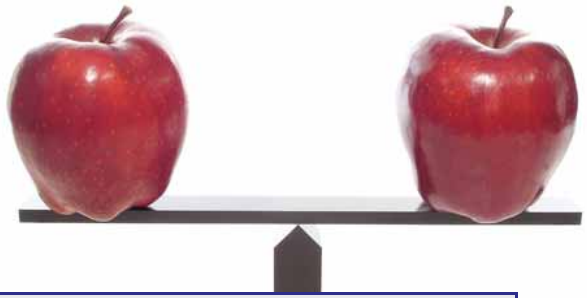
#4: Public Disclosure

Harness the power of the free market to drive efficiency!

Transactional disclosure provides less leverage and is harder to enforce

#4: Public Disclosure

- Benchmark results will be made public in 2nd reporting year
- Data stored in SEED Platform developed by DoE
- Results will be reported on the DDOE website (www.ddoe.dc.gov)
- Apples-to-Apples



Address	Year Built
Energy Performance Rating (1-100)	Energy Intensity
Electricity Use	Natural Gas Use
Water Use	CO_2 Emissions
Space Type	Gross Building Area

#4: Public Disclosure

sustainable.dc

San Francisco Existing Commercial Buildings Energy Performance Ordinance: Compliance Map

Is your building compliant?

Enter an address to find out...

329 Compliant **859** **Not Compliant**

The Existing Commercial Buildings ordinance, adopted in 2011, is ensuring property owners, managers, and tenants have unprecedented insight into the energy-efficiency strategies that will most effectively reduce their utility costs. This map shows the properties that have benchmarked energy use and met the first reporting deadline (October 1, 2011), and those that haven't. Has your property complied?

Click here for more info

Note: Compliance information was last updated on **June 5th, 2012**. Please check back soon for more current data.

Show/Hide: Confirmed Not Compliant

555 FULTON ST
SF Not Compliant
555 FULTON ST San Francisco, CA
TYPE: Industrial, Industrial
SQ FT:19,620 ft²

555 California
SF Not Compliant
555 CALIFORNIA ST San Francisco, CA
TYPE: Office, Office - "Trophy" Class A
TAGS: Energystar
SQ FT:2,030,838 ft²

California Art Institue San Francisco
SF Not Compliant
870 MARKET ST San Francisco, CA
TYPE: Office, Office
TAGS: Energystar
SQ FT:285,570 ft²

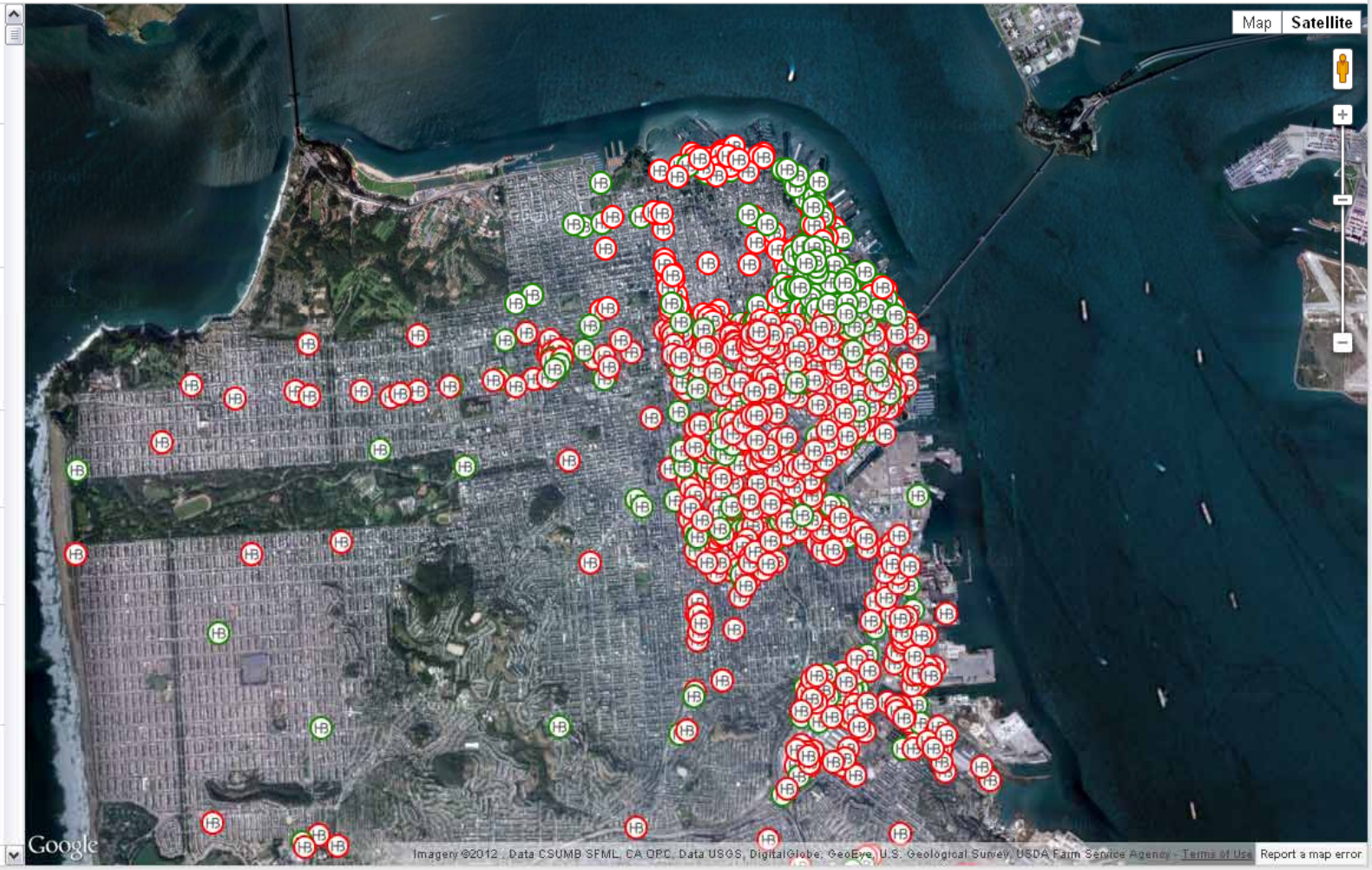
540 9TH ST
SF Not Compliant
540 9TH ST San Francisco, CA
TYPE: Retail, Commercial Stores

121 2ND ST
SF Not Compliant
121 2ND ST San Francisco, CA
TYPE: Industrial, Industrial

295 BAY ST
SF Not Compliant
295 BAY ST San Francisco, CA
TYPE: Office, Office
SQ FT:26,069 ft²

781 BEACH ST
SF Not Compliant
781 BEACH ST San Francisco, CA
TYPE: Office, Office
SQ FT:38,247 ft²

1455 MARKET ST



#5: Engagement

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- Public meetings and workshops
- Portfolio Manager Trainings
- DC SEU Technical Support Hotline
- Sector-specific trainings and events
- **Partners!**

IMT Institute for Market Transformation

DCSEU
DISTRICT OF COLUMBIA SUSTAINABLE ENERGY UTILITY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DEPARTMENT OF STATE UNITED STATES OF AMERICA

DISTRICT OF COLUMBIA BUILDING INDUSTRY ASSOCIATION

UNIVERSITY OF THE DISTRICT OF COLUMBIA 1851

DOWN TOWN DC

AOBA
Apartment and Office Building Association of Metropolitan Washington

U.S. GREEN BUILDING COUNCIL

CNHED

greenspace NCR

dhcd
Department of Housing and Community Development
BUILDING ENDURING COMMUNITIES

ONE CITY

DGS

Opportunities

- Open up access to *granular* energy consumption data that no policy makers have had access to before
- Increase fiscal responsibility and impact of incentive programs by targeting areas of greater need
- Progress on energy efficiency is difficult when energy use is invisible and private—we need to change the game

Thank you.

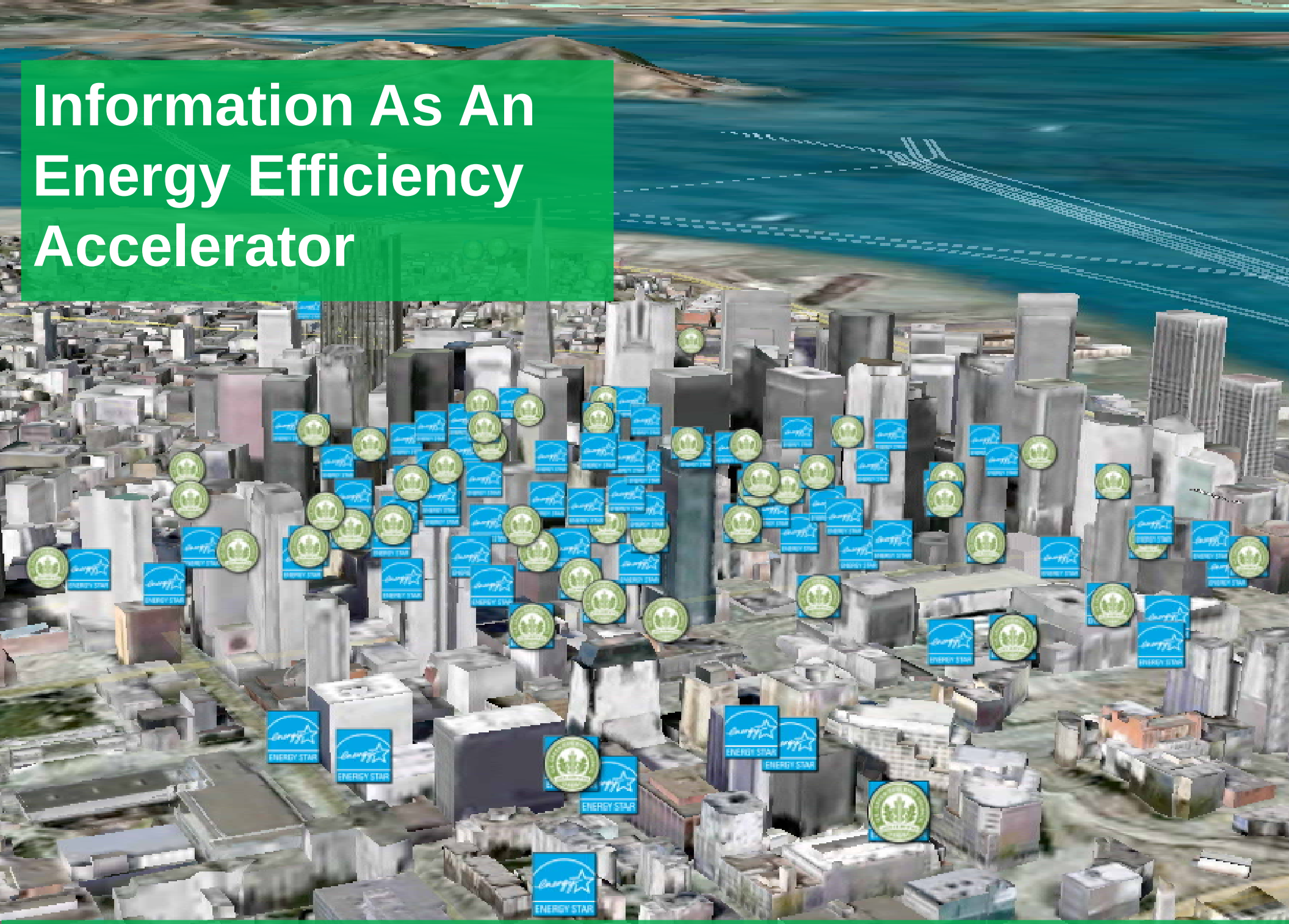
Questions? Comments?

Marshall Duer-Balkind
marshall.duer-balkind@dc.gov
http://ddoe.dc.gov/energybenchmarking
(202) 671-3042
Twitter: @BenchmarkDC

DISTRICT DEPARTMENT OF THE ENVIRONMENT

green forward

Information As An Energy Efficiency Accelerator



Barry Hooper ♦ San Francisco Dept of Environment ♦ July 26, 2012

SF Environment

Our home. Our city. Our planet.

A Department of the City and County of San Francisco

Mission:

- **Improve, enhance, and preserve the environment**
- **Promote San Francisco's long-term well being**

Energy Efficiency & Renewables

Recycling & Composting

Toxics Reduction

Transportation & Clean Air

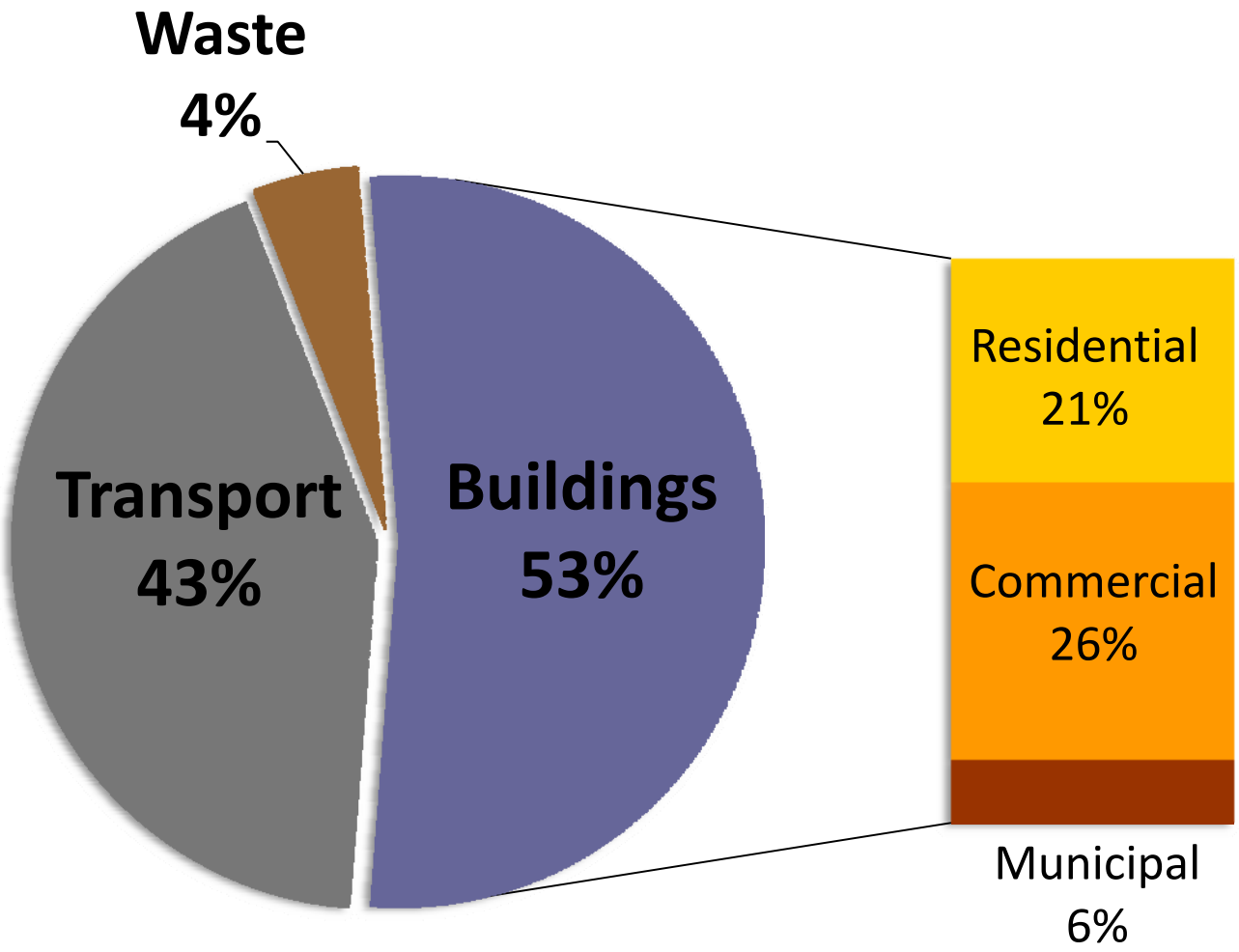
Environmental Justice

Outreach and School Education

Urban Forestry

Green Building

San Francisco Greenhouse Gas Emissions



Source	CO_2e (MT)
Cars & Trucks	2,118,863
Commerical Electricity	748,458
Residential Natural Gas	782,960
Commercial Natural Gas	609,521
Residential Electricity	310,558
Waste	244,625
Municipal Electricity	186,103
Municipal Natural Gas	119,860
Rail (BART & Caltrain)	78,635
Ferry	34,103
Muni	22,044
Total:	**5,255,730**

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

San Francisco Energy Policies

	New Buildings	Alterations to Existing Buildings	Existing Homes	Existing Commercial In Operation
Scale	<1% per year	<1% per year	360k homes	~220M sq ft of buildings larger than 10k sq ft
Rebates	$	$	$	$$$
Policy Tool	Building code leverages green labels	T24 Energy Code	Retrofit on resale, & green in County records	Area of Opportunity
Outcomes	Motivated the market. >25% of rentable office = LEED EB O&M	LEED CI is fairly common	1% units = green certified	

San Francisco Energy Policies

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Policy Tool	Building code leverages green labels	T24 Energy Code	Retrofit on resale, & green in County records	Area of Opportunity
Outcomes	Motivated the market. >25% of rentable office = LEED EB O&M	LEED CI is fairly common	1% units = green certified	

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

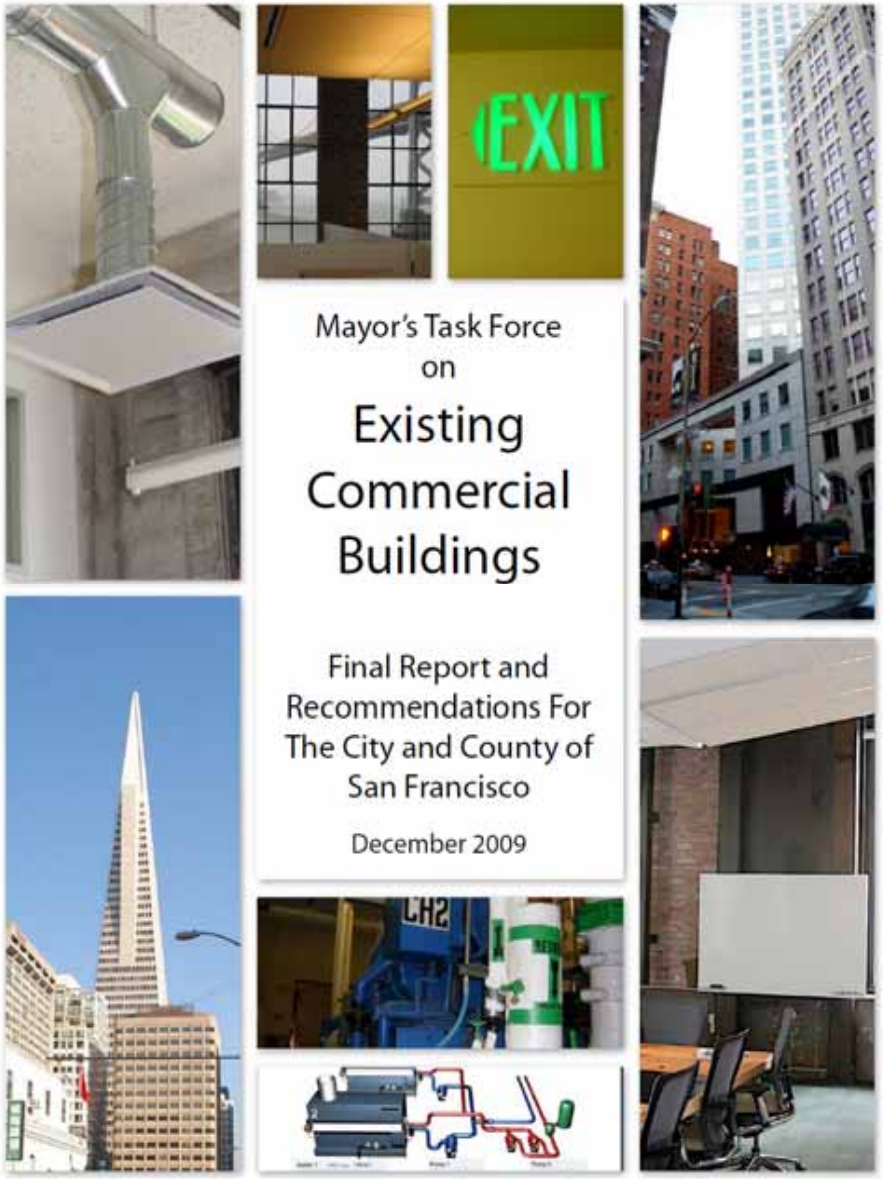
- Owners' Representatives
- Property Managers
- Contractors
- Operators
- Engineers
- Architects
- Finance
- Utilities

The Task

- Cost effective energy savings
- Minimum costs
- Measureable

Existing Commercial Buildings: Recommended Strategy

- Benchmark & report energy use annually
- Energy audit every 5 years
- Inform tenants about performance
- Lead by example in public facilities
- Provide capital
- Educate and mentor
- Submeter



Commercial Stakeholders:
'We will manage what we measure'

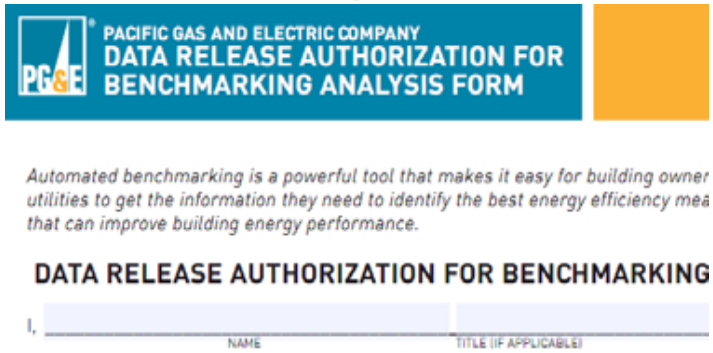
Benchmark

An Action Plan

Transparency

San Francisco Benchmarking Requirement

Benchmark with Portfolio Manager


PACIFIC GAS AND ELECTRIC COMPANY
DATA RELEASE AUTHORIZATION FOR BENCHMARKING ANALYSIS FORM

Automated benchmarking is a powerful tool that makes it easy for building owner utilities to get the information they need to identify the best energy efficiency mea that can improve building energy performance.

DATA RELEASE AUTHORIZATION FOR BENCHMARKING

I, _____ _____
NAME TITLE (IF APPLICABLE)

Click link, get report template

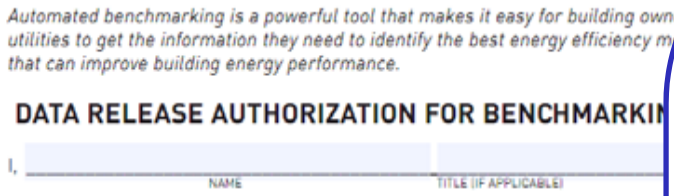
Review Annual Energy Benchmark Summary

Release

Receive Confirmation from SFE

San Francisco Benchmarking Requirement

Benchmark with Portfolio Manager



Click link, get report template

Review Annual Energy Benchmark Summary

Annual Energy Benchmark Summary

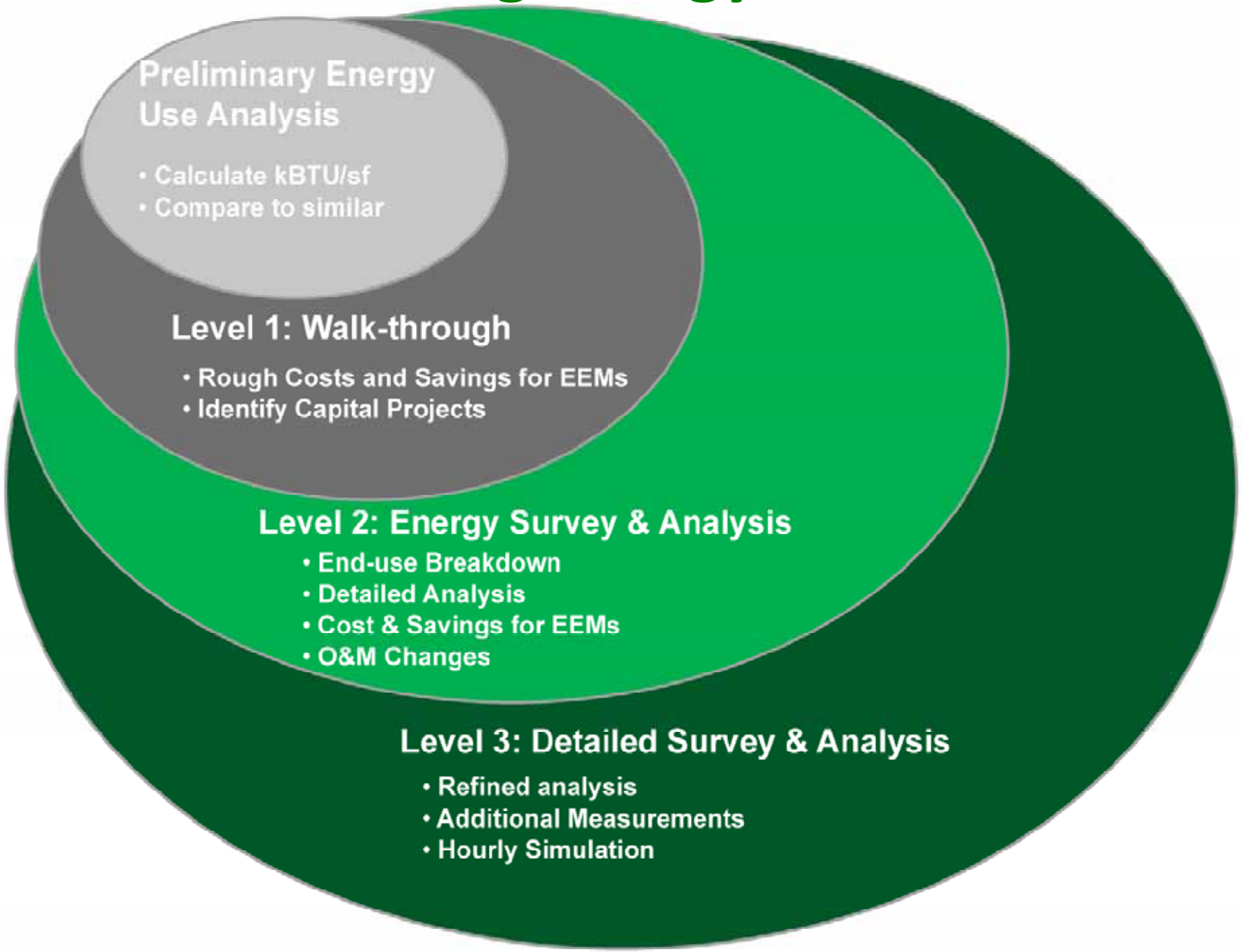
ENERGY STAR Rating

Energy Use/sq ft/year

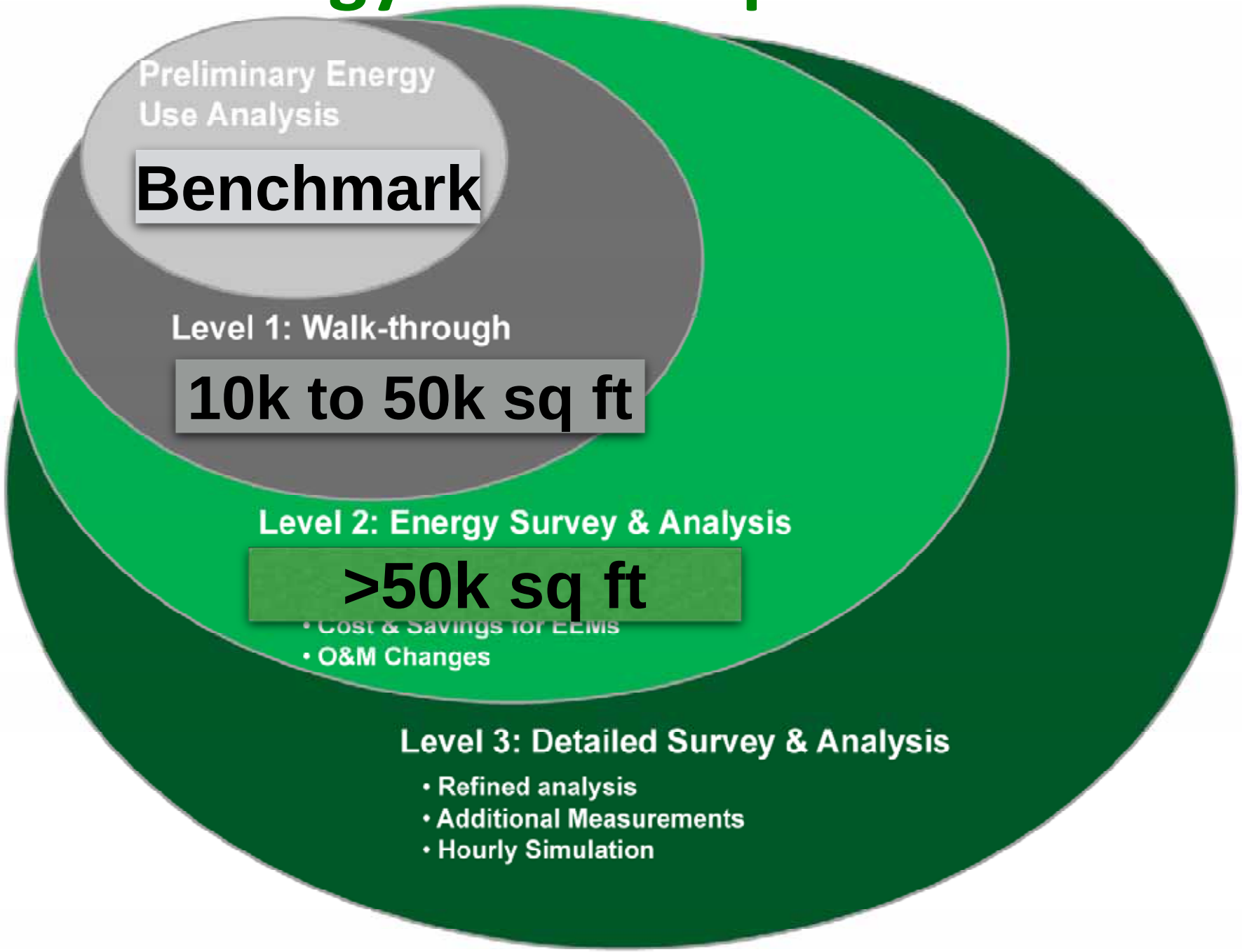
Annual CO_2e emissions

Basic descriptive data

ASHRAE Procedures For Commercial Building Energy Audits



San Francisco
Energy Audit Requirement



San Francisco
Energy Audit Requirement

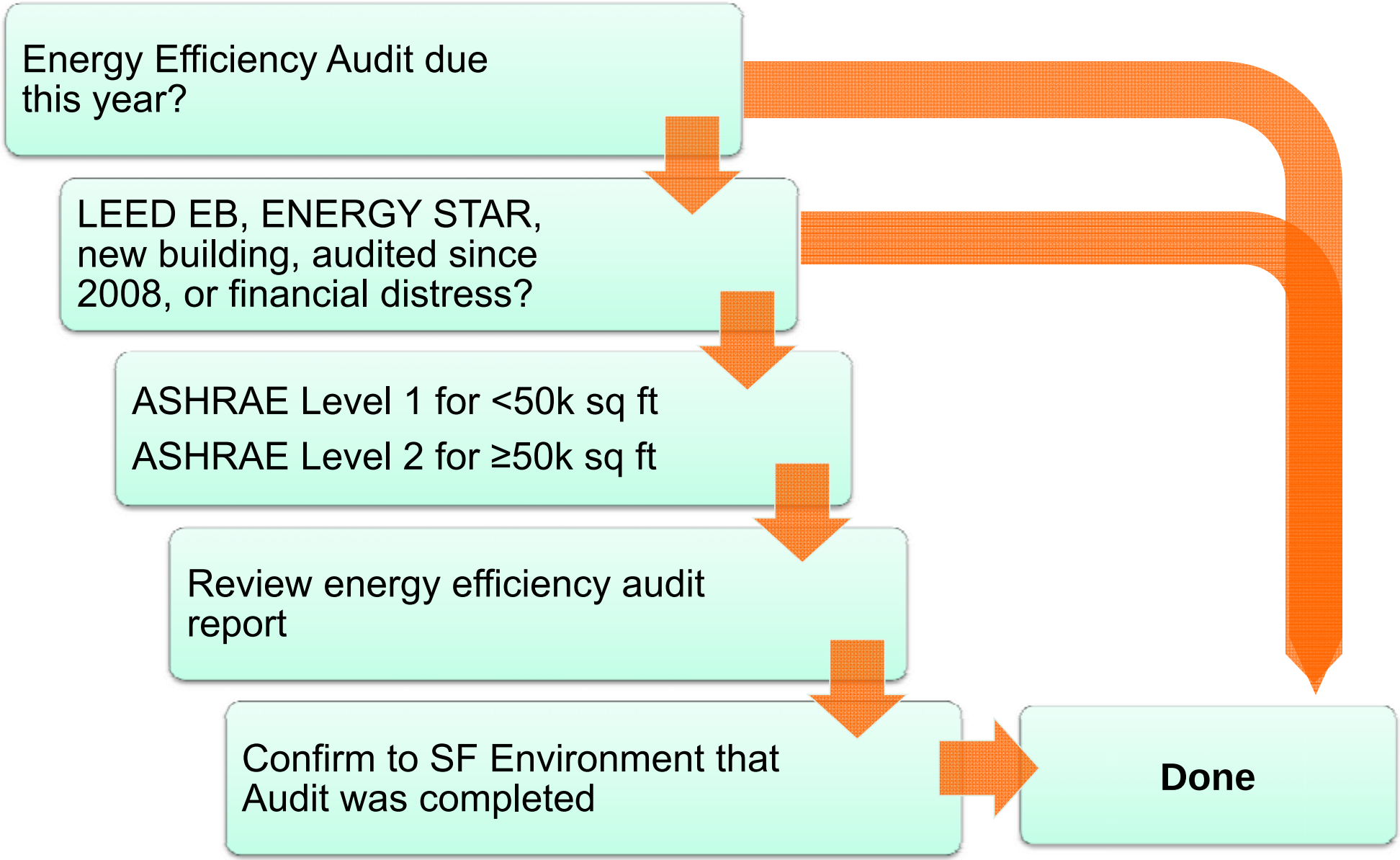


Image Courtesy: Adobe Systems

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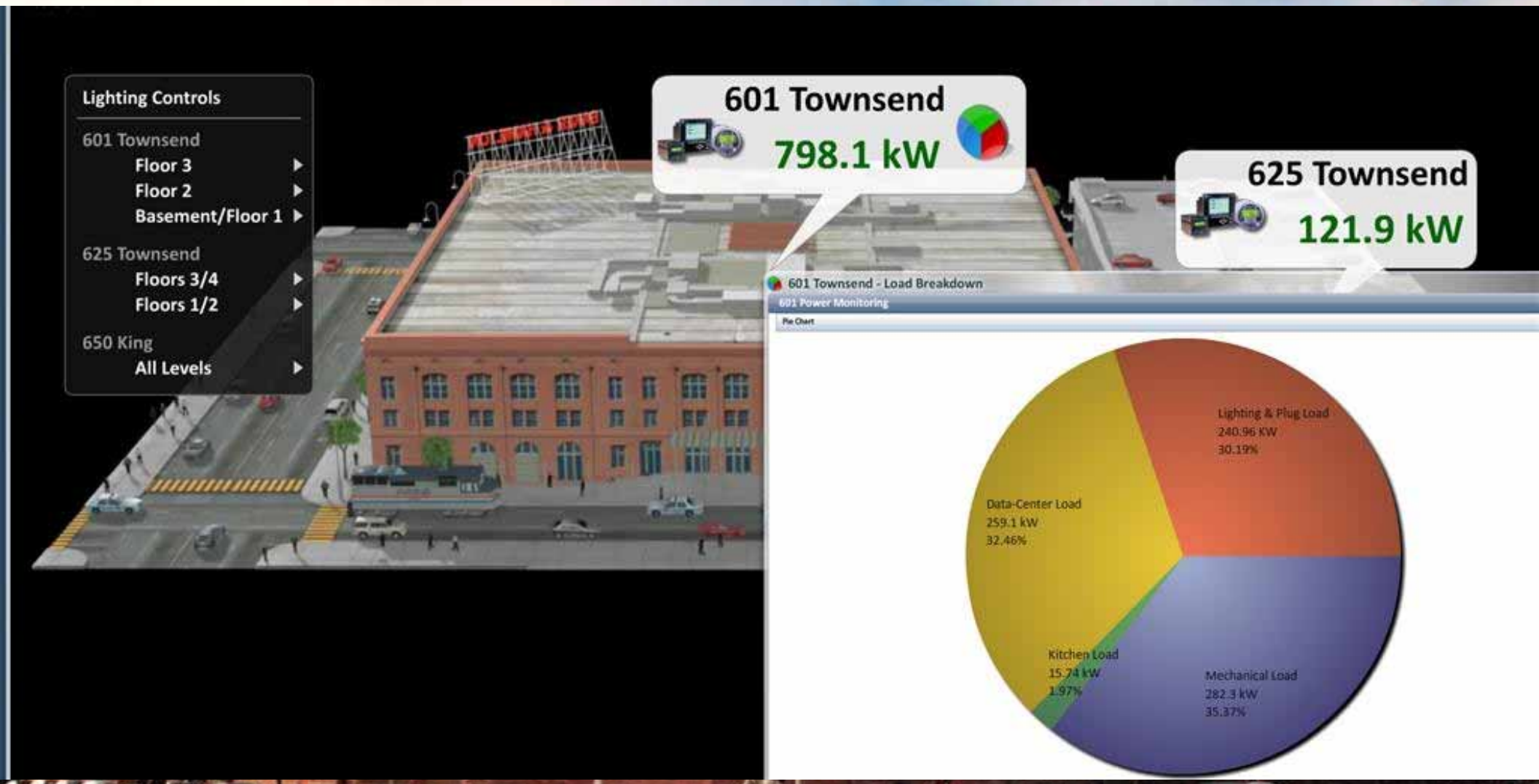
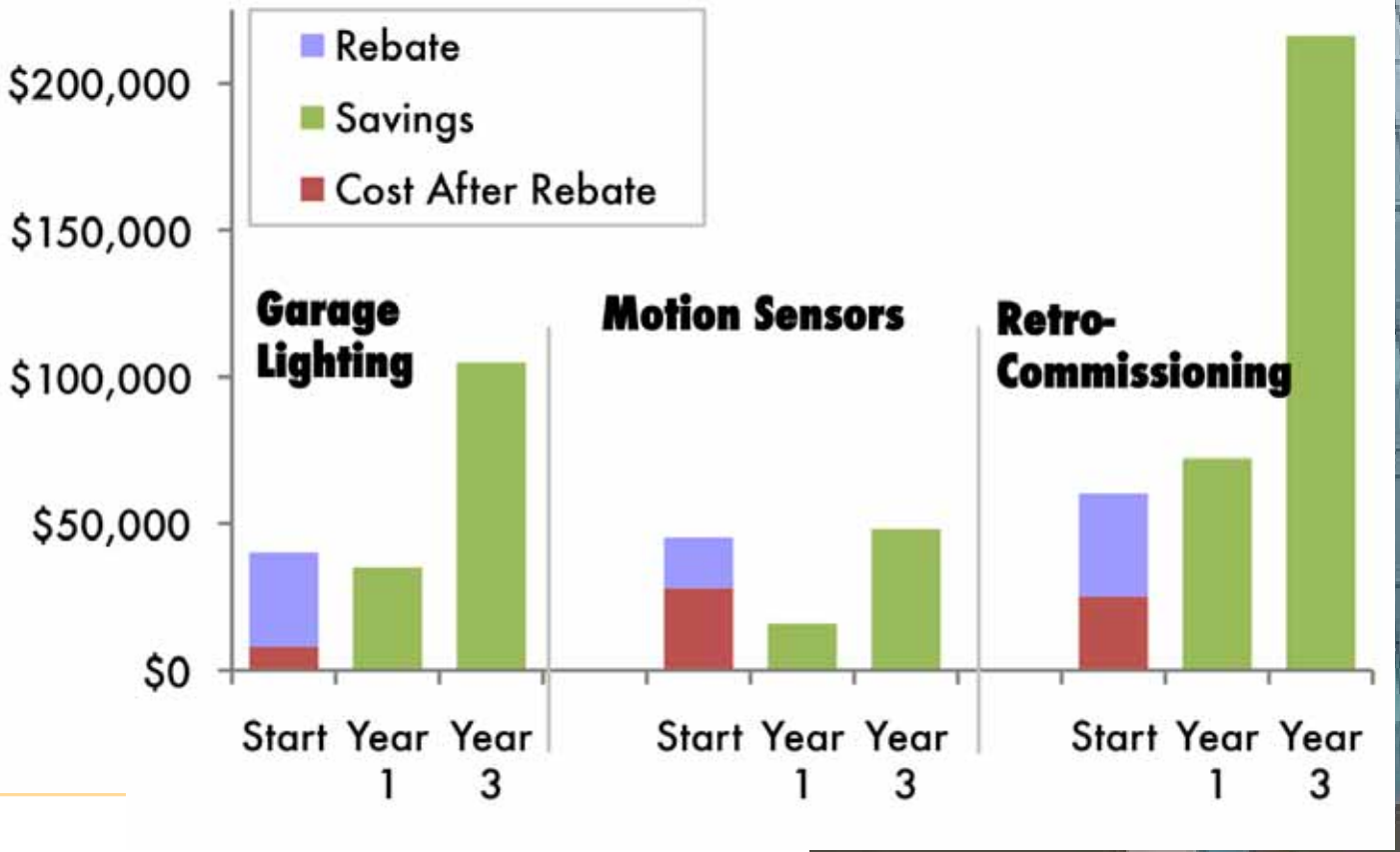


"By benchmarking our hotel's energy use and identifying inefficiencies through an audit, we were able to maximize savings without sacrificing our customers' experience."

Peter Koehler,
General Manager
InterContinental Hotel



SAN FRANCISCO energy watch

PG&E Pacific Gas and Electric Company®

“Benchmarking is crucial because it gives me a gauge of where we’re performing. Energy management has become a passion of mine.”
— Garry Cook, Chief Engineer, 500 Washington

“Reducing energy costs is likely the single most significant way to increase operating income and appeal to future tenants, investors and owners. Keep in mind that your competition is benchmarking and auditing, so not doing so puts you at a competitive disadvantage.”
– Blake Peterson, Senior Property Manager, Orrick Building

“Benchmarking serves two purposes: it forces you to look at all aspects of the building and to show current building performance. Knowing current performance is my starting point to find ways to improve the building's energy efficiency. To improve efficiency, you need to know where you're at.”
— Doug Peterson, Chief Engineer, Transamerica Pyramid

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

“The benefits of benchmarking are helps identify equipment that is drawing a lot of energy and equipment that isn’t working properly.”
— Jessie Orozco, Chief Engineer, Rincon Center

“Existing and even new buildings can always find opportunities to improve processes and conserve. If you do not measure where you are, you cannot reach your goals for conserving energy, water, and waste. The mindset at our property is to be open to research and to test new systems, processes and technology. We cannot become complacent until we reach zero waste and use of our resources.”
— Ed Perinoni, Chief Engineer, Post-Montgomery Center

“I can’t say enough good things about benchmarking.”
— James Smith, Chief Engineer, 455 Market

“In my 40 years as a building engineer I have found that the efficient operation of the complex systems in a modern high rise is as much an art as a science. Given the dynamics that effect energy use (outside air temperature, humidity, cloud cover and varying tenants loads) the only efficient way to determine if you’re effective is benchmarking. It is a report card.”
— Jerry Fergusen, Chief Engineer, 425 Market

“We’re interested in keeping as green as possible, and constantly finding new ways to save energy. We benchmark using ENERGY STAR Portfolio Manager, and have a lot of energy efficient systems in place such as our new energy efficient chiller, economizer, LEDs, and motion sensors.”
— Dana Boyd, Tenant Coordinator, 343 Sansome

Utility Support

City policy leverages California ratepayer investments in:

- Rebates
- Free efficiency classes
- Outreach & marketing
- Customers have easy access to their energy usage data

Pacific Gas and Electric Company®

GreenFinanceSF

Saving You Money, Energy and Water

Financing For:

Energy Efficiency • Renewables • Water Efficiency

City and county creates land-secured financing district

Property owners voluntarily sign-up for financing and install energy projects

Proceeds from financing provided to property owner to pay for project

Property owner repays bond through property tax bill (up to 20 years)

Estimated Impact

Scenario	Stock Audited Annually	Net Annual Energy Reduction	Maximum Annual Incentive Budget	10-Year Net Present Value to Private Sector
San Francisco Baseline	~10% (50% after 5 years)	1.3%	$24 Million	$382 Million
Baseline + Energy Audits and Benchmarking	20% (100% after 3 Years)	4.2%	$39 Million	$612 Million

Questions

Barry Hooper
barry.hooper@sfgov.org
Phone: (415) 355-3753
San Francisco Dept of Environment

SF Environment
Our home. Our city. Our planet.
SFEnvironment.org • (415) 355-3700
A Department of the City and County of San Francisco

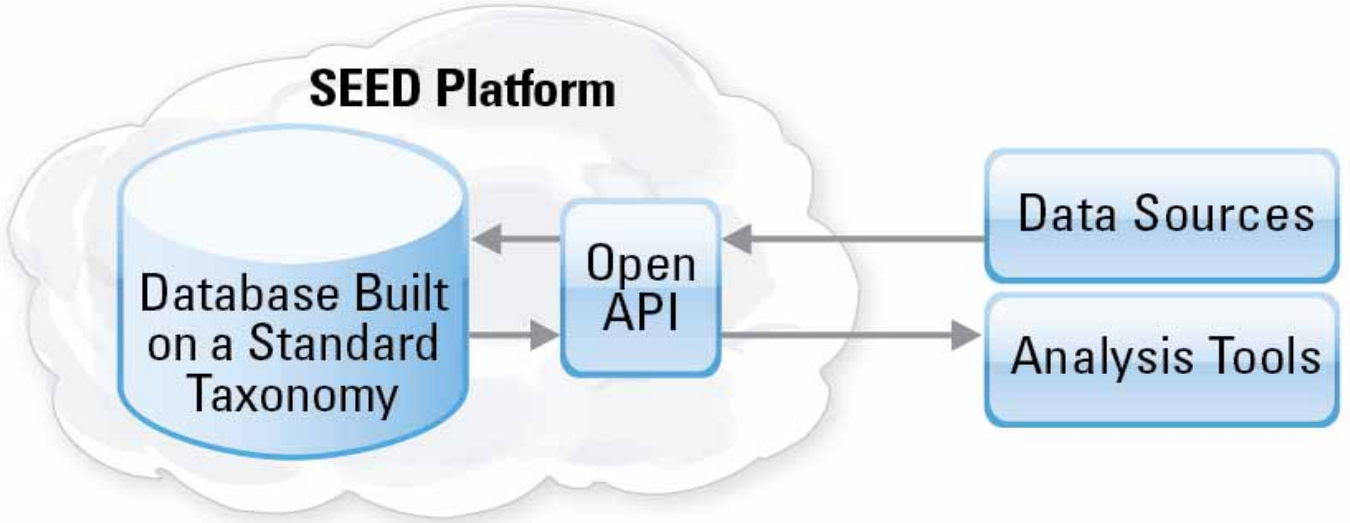
SEE Action

STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

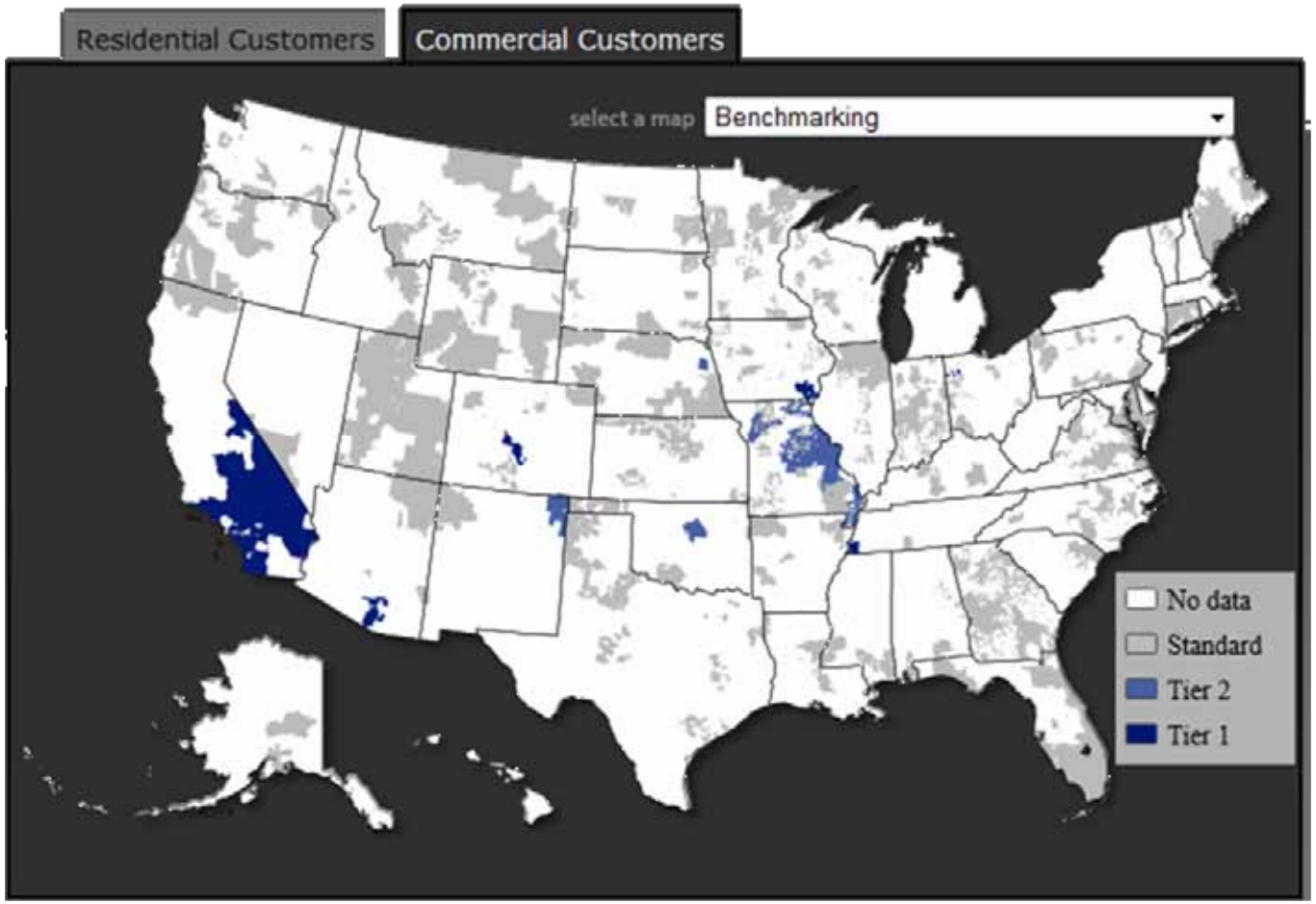
Related DOE Initiatives

Standard Energy Efficiency Data (SEED) Platform

The Standard Energy Efficiency Data Platform (SEED) is a software tool that allows state and local governments to quickly and easily create their own database using a standard building energy performance taxonomy, and easily share selected data with other parties as needed.



Access to Utility Data



Green Button

21% of utilities have completed the questionnaire

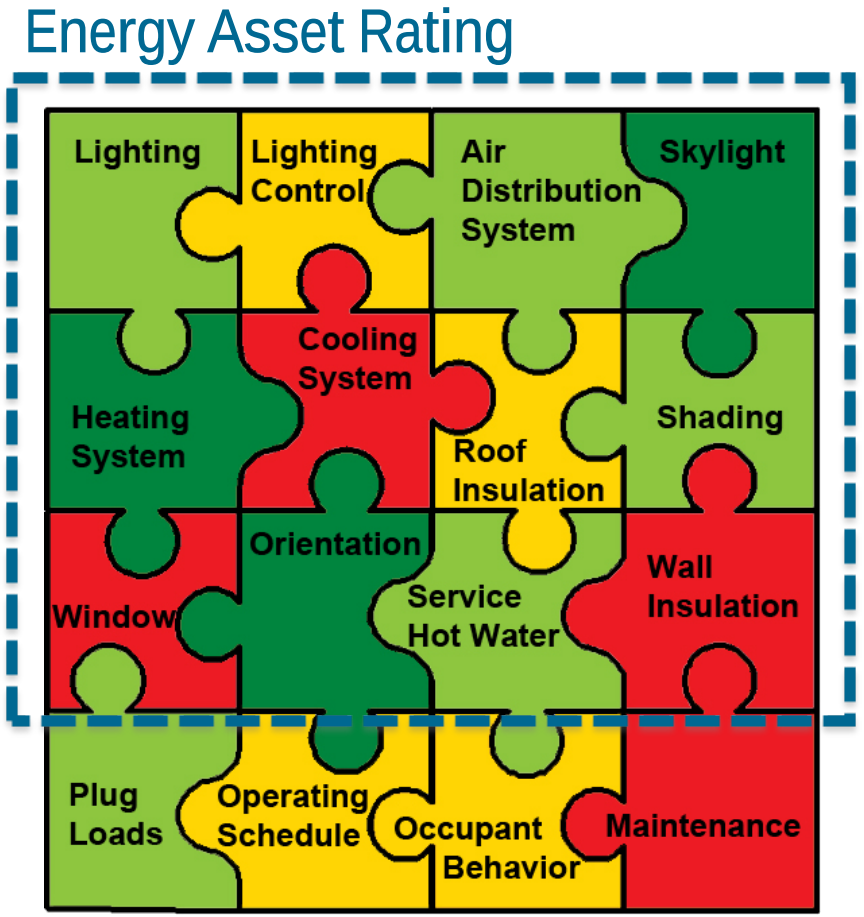
http://en.openei.org/wiki/Utility_Access_Map

SEE Action
STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

www.seeaction.energy.gov

Commercial Building Asset Rating Program

- Complements Portfolio Manager providing a common platform for:
  - Evaluating the inherent energy performance of buildings' physical characteristics while controlling for building operation and tenant behavior
  - Identifying energy efficiency improvements
- Looking for pilot participants to test tool for select building types (office, school unrefrigerated warehouse, public assembly)



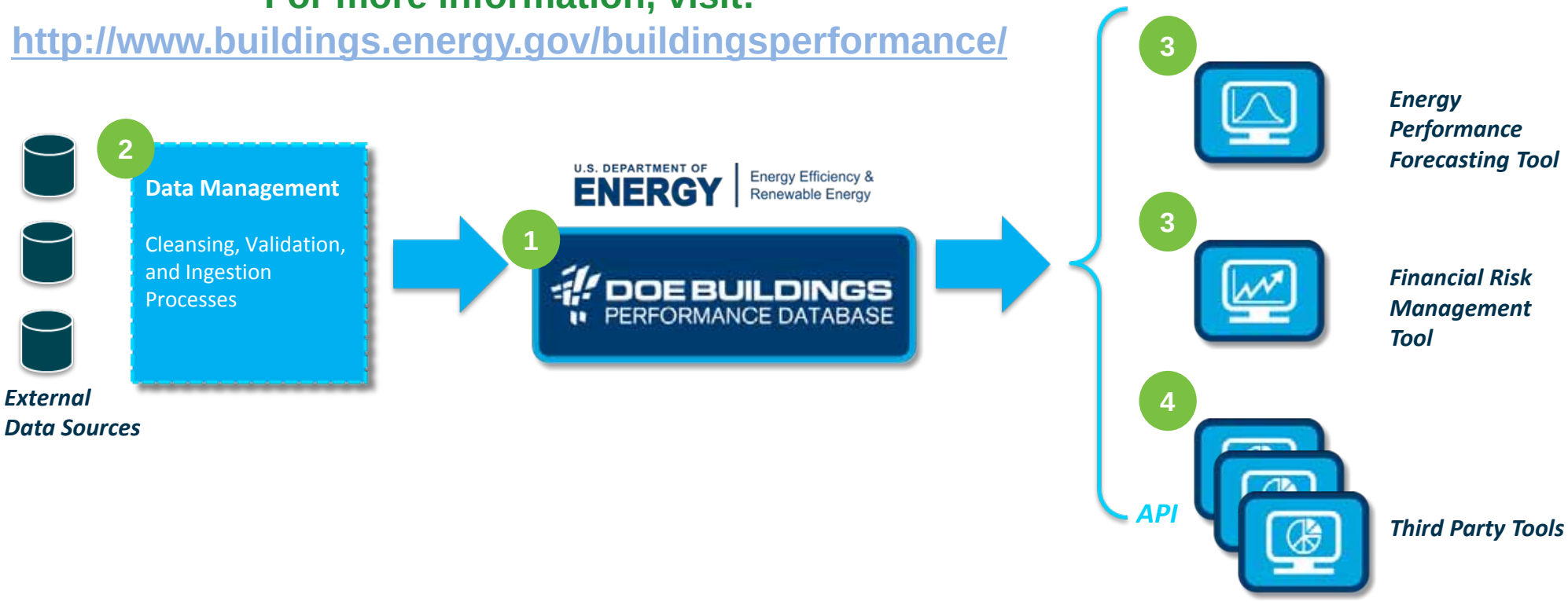
Building energy use is affected by many factors.

For more information, visit:

http://www.commercialbuildings.energy.gov/assetrating.html

Buildings Performance Database

For more information, visit:
http://www.buildings.energy.gov/buildingsperformance/



1. Common taxonomy: a standardized "data model" to organize energy use and building characteristic data
2. Data management: processes and tools to support the on-boarding and validation of data from multiple sources
3. Applications: web-enabled tools to forecast energy savings and related cash flows.
4. 3rd party tool support: API allows 3rd parties to create new applications to use the data in the database

Join Us For Additional SEE Action Webcasts This Summer

Topics to be covered include:

- Energy Audit and Retro-commissioning Policies
- Strategic Energy Management Programs
- High Performance Leasing Strategies

Dates and times TBD…stay tuned!

SEE Action

STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK

Questions?

Cliff Majersik
cliff@imt.org

Marshall Duer-Balkind
marshall.duer-balkind@dc.gov

Barry Hooper
barry.hooper@sfgov.org

Cody Taylor
cody.taylor@ee.doe.gov

www.seeaction.energy.gov/existing_commercial.html