



EFFICIENCY CITIES NETWORK



City Energy Efficiency Rankings

Tuesday, October 1, 2013

3pm Eastern

Moderators:

Joel Rogers, Center on Wisconsin Strategy (COWS)

James Irwin, Center on Wisconsin Strategy (COWS)

The 2013 City Energy Efficiency Scorecard

Eric Mackres, Local Policy Manager

October 1, 2013

Efficiency Cities Network webinar

American Council for an Energy-Efficient Economy (ACEEE)

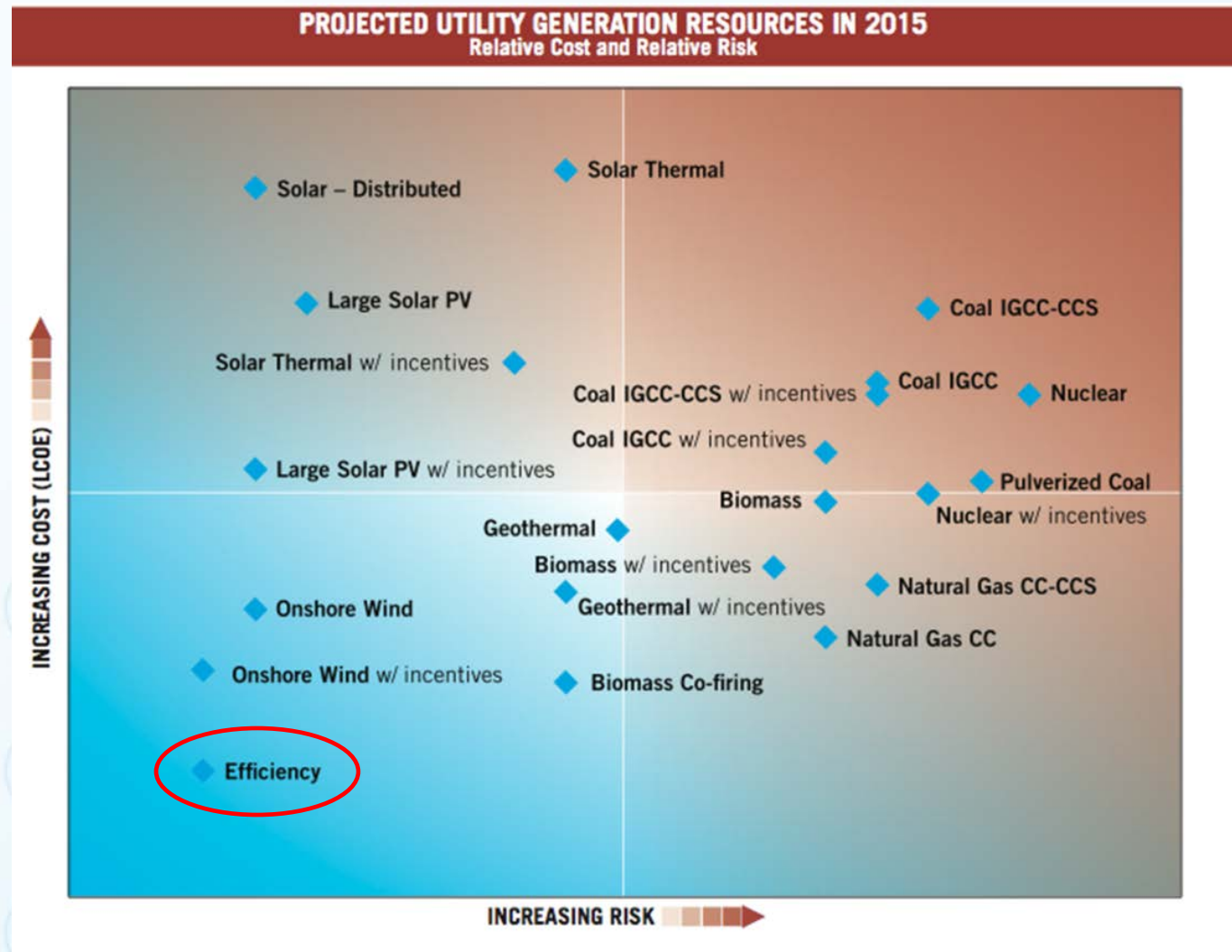
- 33 year old, nonprofit 501(c)(3) dedicated to advancing energy efficiency through research, policy, and technical assistance.
- Focus on end-use efficiency in Industry, Buildings and Equipment, Utilities & Transportation; Economic Analysis; Behavior; Finance.
- Policy Program working at National, State, and Local levels
- Local Policy work focused on:
 - Technical assistance to local governments and community groups
 - Local Policy Toolkit, policy calculator, best practice research
 - Project on energy efficiency programs for multifamily housing
 - *City Energy Efficiency Scorecard (today's topic) & related Self-Scoring Tool (coming soon)*
 - www.aceee.org/portal/local-policy



Why Energy Efficiency?

It's the Cheapest and Lowest Risk Energy Resource

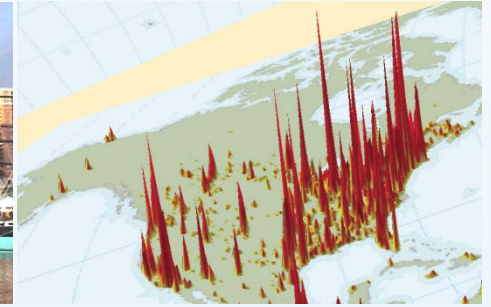
(And saves money, creates jobs, increases resilience, improves health and the environment...)



Why Cities?



Baltimore Inner Harbor



Light Emissions. Richard Florida, "The World is Spiky" *The Atlantic*, Oct 2005

- *They are where most energy is used –*
 - 80% of U.S. consumption in cities, 66% globally
- *Efficiency makes cities better –*
 - All aspects of city life can be improved through efficiency, but it is currently underutilized for local economic and community development
- *Actions by cities are important –*
 - Cities have considerable influence over energy use, especially in buildings and transportation

Goals

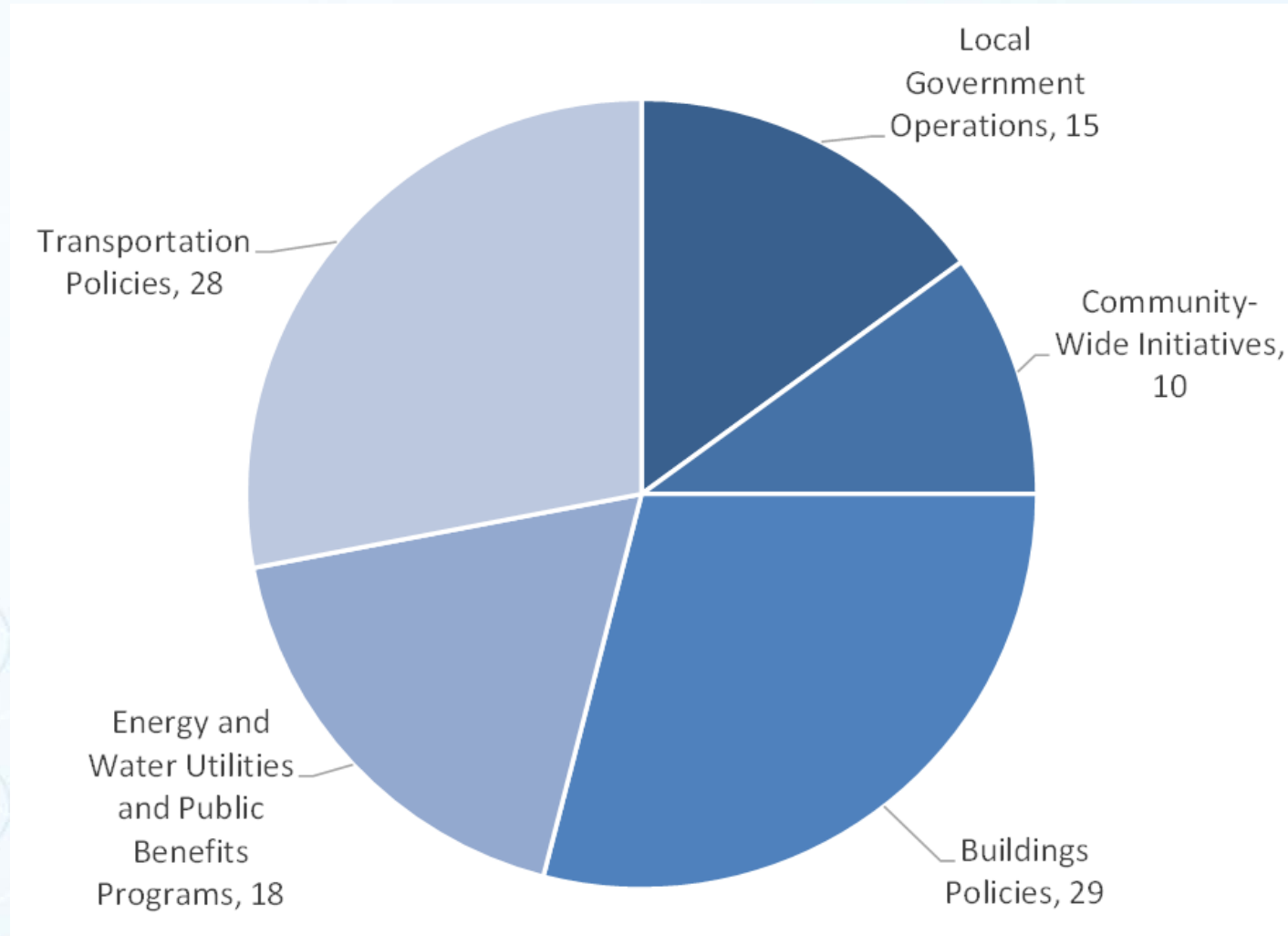
HOW IS YOUR CITY SAVING ENERGY?

A new report from the American Council for an Energy-Efficient Economy ranks America's 34 largest cities on what they are doing to save energy and costs in five key areas. Click on the map to see how cities scored.



1. Compare large cities exclusively on efficiency – identifying leaders and where improvement is needed
2. Focus on policies – highlight important *actions* that can be taken by cities
3. Roadmap for other cities – examples and best practices

Policy Areas and Points



Local Government Operations Metrics

Policy Area and Subcategories	Maximum Score	Percentage of Total Points
Local Government Operations	15	15%
Local Government Energy Efficiency Goals	2	2%
Energy Strategy Implementation	4	4%
On track to meet targets	1	
Dedicated funding or integrated into capital planning	0.5	
Public outreach	0.5	
Annual public reporting	0.5	
Third-party evaluation, measurement, and verification (EM&V)	0.5	
Dedicated staff	0.5	
Departmental/staff incentives	0.5	
Procurement and Construction Policies	4	4%
Fuel efficiency requirement	1	
Right-sizing and anti-idling policies	0.5	
Electric vehicle charging stations	0.5	
Outdoor lighting standards	0.75	
Scheduled lighting	0.25	
Above-code requirements for public buildings	0.5	
Energy-efficient procurement policy	0.5	
Asset Management	5	5%
Building benchmarking	1	
Comprehensive retrofit strategy	1	
Fix-it-first or lifecycle cost policy	1	
Allocation to maintenance in capital budget	1	
Availability of teleworking or flex schedules for employees	0.5	
Transit benefits for employees	0.5	



Community-Wide Initiatives Metrics

Community-Wide Initiatives	10	10%
Community-Wide Energy Efficiency Targets	2	2%
Performance Management	3	3%
<i>On track to meet targets</i>	1	
<i>Annual reporting</i>	0.5	
<i>Third-party evaluation, measurement & verification (EM&V)</i>	0.5	
<i>Dedicated staff</i>	0.5	
<i>Dedicated funding</i>	0.5	
Efficient Distributed Energy Systems	3	3%
<i>Combined heat and power (CHP)</i>	2	
<i>District energy</i>	1	
Urban Heat Island Mitigation Strategy	2	2%



Buildings

Buildings Metrics

Buildings Policies	29	29%
Building Energy Code Stringency	6	6%
<i>Commercial</i>	3	
<i>Residential</i>	3	
Building Energy Code Implementation	6	6%
<i>Spending on code compliance</i>	2	
<i>Third-party code compliance strategies</i>	2	
<i>Upfront code support</i>	2	
Requirements and Incentives for Efficient Buildings	9	9%
<i>Above code requirements for certain private buildings</i>	2	
<i>Energy audit requirements</i>	1	
<i>Energy retrofit requirements</i>	2	
<i>Incentives or financing programs</i>	3	
<i>Building energy savings goals</i>	1	
Benchmarking, Rating, and Disclosure	6	6%
<i>Commercial</i>	3	
<i>Residential</i>	3	
Comprehensive Efficiency Services	2	2%



Utility Metrics

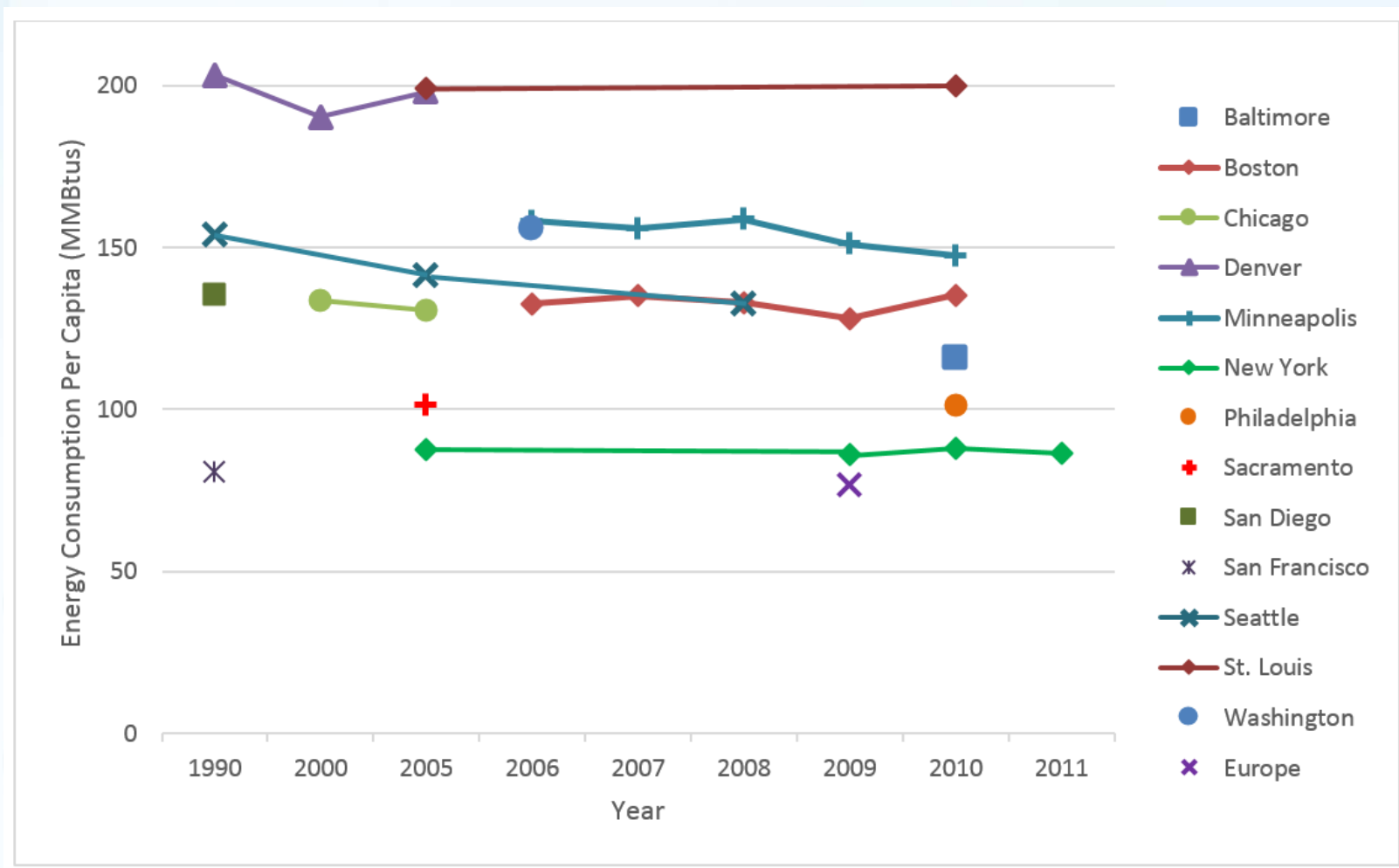
Energy and Water Utility Policies and Public Benefits Programs	18	18%
Spending on Electricity Efficiency Programs	4	4%
Spending on Natural Gas Efficiency Programs	3	3%
Savings from Electricity Efficiency Programs	2	2%
Energy Efficiency Savings Targets and Funding Agreements	2	2%
Provision of Energy Data by Utility	2	2%
<i>Availability of energy consumption data to customers</i>	0.5	
<i>Availability of aggregated building data to owners</i>	0.5	
<i>Availability of community-wide data for planning</i>	0.5	
<i>Advocacy to improve customer access to utility energy data</i>	0.5	
Efficiency Efforts in Water Services	5	5%
<i>Water efficiency</i>	2	
<i>Energy efficiency in water services</i>	2	
<i>Green stormwater infrastructure</i>	1	



Transportation Metrics

Transportation Policies	28	28%
Location Efficiency	8	8%
<i>Location-efficient zoning</i>	2	
<i>Removal or reduction of minimum parking requirements</i>	2	
<i>Complete streets policy</i>	2	
<i>Location efficiency incentives and information</i>	2	
Mode Shift	8	8%
<i>Integration of transportation and land use planning</i>	4	
<i>Car sharing</i>	1	
<i>Bicycle sharing</i>	1	
<i>Transportation demand management programs</i>	2	
Transit	6	6%
<i>Transportation funding</i>	4	
<i>Access to transit services</i>	2	
Efficient Vehicles and Driver Behavior	3	3%
<i>Incentives for energy-efficiency vehicle purchase</i>	1	
<i>Incentives for electric vehicle charging infrastructure</i>	0.5	
<i>Efficient driver behavior</i>	0.5	
<i>Transportation partnerships</i>	1	
Freight—Intermodal Freight Facilities	3	3%

Energy Consumption Trends



Tier

- 1
- 2
- 3
- 4
- 5
- 6

City	Tier
Boston	1
Seattle	5
Portland	2
San Francisco	3
San Jose	21
Riverside	21
Los Angeles	28
San Diego	20
Phoenix	15
El Paso	23
Austin	6
San Antonio	16
Houston	13
Fort Worth	26
Dallas	14
Memphis	32
Atlanta	16
Jacksonville	34
Tampa	30
Miami	27
Charlotte	31
St. Louis	23
Columbus	19
Indianapolis	29
Pittsburgh	25
Detroit	33
Chicago	9
Minneapolis	8
Denver	11
Sacramento	18
Washington	7
Baltimore	12
Philadelphia	10
New York	3

Overall & Policy Area Scores: Tiers 1-3

Rank	City	State	Local Government Operations (15 pts.)	Community-Wide Initiatives (10 pts.)	Buildings Policies (29 pts.)	Energy & Water Utility Policies and Public Benefits Programs (18 pts.)	Transportation Policies (28 pts.)	TOTAL SCORE (100 pts.)
1	Boston	MA	11	9.5	21.5	15.75	19	76.75
2	Portland	OR	13.75	7.5	14.5	14.75	19.5	70
3	New York City	NY	10.5	9	22	15.25	13	69.75
3	San Francisco	CA	13	8	17	15.75	16	69.75
5	Seattle	WA	10.75	6	22.5	14.75	11.25	65.25
6	Austin	TX	9.75	9	21.5	10.75	11	62
7	Washington	DC	8.25	4	21	8.75	14	56
8	Minneapolis	MN	10	6.5	10	13.75	15	55.25
9	Chicago	IL	10.75	8	12	13.5	10.5	54.75
10	Philadelphia	PA	10.5	8.5	11.5	8.5	15.5	54.5
11	Denver	CO	11	7.5	7.5	14.25	12.5	52.75
12	Baltimore	MD	8.75	8	9	8.75	12	46.5
13	Houston	TX	8.75	6	11.5	9	10	45.25
14	Dallas	TX	9.5	6	7.5	8.25	13	44.25
15	Phoenix	AZ	12.25	4.5	11	10.25	5.5	43.5
16	Atlanta	GA	6.75	6	6	6.25	17.5	42.5
16	San Antonio	TX	9.5	6	7.5	8	11.5	42.5
18	Sacramento	CA	8.5	4.5	8.5	11.75	7.5	40.75

Overall & Policy Area Scores: Tiers 4-6

Rank	City	State	Local Government Operations (15 pts.)	Community-Wide Initiatives (10 pts.)	Buildings Policies (29 pts.)	Energy & Water Utility Policies and Public Benefits Programs (18 pts.)	Transportation Policies (28 pts.)	TOTAL SCORE (100 pts.)
19	Columbus	OH	11.25	2	4.5	11.75	9	38.5
20	San Diego	CA	8.25	6	7.5	11.25	5.25	38.25
21	Riverside	CA	5.5	5.5	7.5	11.25	7.5	37.25
21	San Jose	CA	6.25	6	8	11.5	5.5	37.25
23	El Paso	TX	9.25	4.5	3	10	9.5	36.25
23	St. Louis	MO	7	7	7	3.25	12	36.25
25	Pittsburgh	PA	5.25	6.5	7	7.5	8	34.25
26	Fort Worth	TX	8.25	6.5	4.5	8.75	4.75	32.75
27	Miami	FL	5	6.5	6.5	5.5	8.5	32
28	Los Angeles	CA	3	4	6.5	10	8	31.5
29	Indianapolis	IN	5.75	3	3.5	7	9	28.25
30	Tampa	FL	5	4.5	6.5	5.75	5	26.75
31	Charlotte	NC	5.75	2.5	3	4.5	8	23.75
32	Memphis	TN	3.5	3.5	4.5	3	9	23.5
33	Detroit	MI	1.5	3	5.5	4.5	4.5	19
34	Jacksonville	FL	2.5	3	3.5	4.5	3.75	17.25

Findings

- The top scoring cities have comprehensive efficiency strategies, and broad-ranging policies or programs, often a history of implementing efficiency.
- All cities, even the highest scorers, have room for improvement. Only 11 cities scored more than half of the possible points.

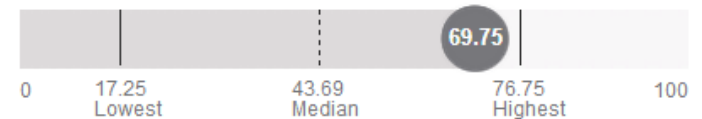
Strategies to Improve Efficiency

- Lead by example in government operations.
- Adopt energy savings goals.
- Actively manage energy use, track and communicate progress.
- Enable access to data on energy usage.
- Adopt policies to improve efficiency in new and existing buildings.
- Partner with utilities to promote efficiency programs.
- Encourage location-efficient development and greater travel mode choices.

Infographic: City- & Policy Area-specific Summaries

SAN FRANCISCO

Rank #3 TOTAL SCORE: **69.75**



Local Government

#2



13/15

Community Initiatives

#5



8/10

Buildings

#6



17/29

Energy Water Utilities & Public Benefits Program

#1



15.75/18

Transportation

#4



16/28

CITY STATS

- City pop.: 825,863
- Land area: 47 mi²
- Metro pop.: 4,455,560
- Utility: Pacific Gas & Electric
- Non-car commuters: 55%

BEST PRACTICES

- High level of investment in and savings from utility efficiency programs, good access to energy data, and city-utility partnership through SF Energy Watch.
- Policies in place to encourage efficient buildings (e.g. LEED for new large buildings, priority permitting and PACE financing).
- Homes must improve efficiency when sold or renovated under the Residential Energy Conservation Ordinance.

AREAS FOR IMPROVEMENT

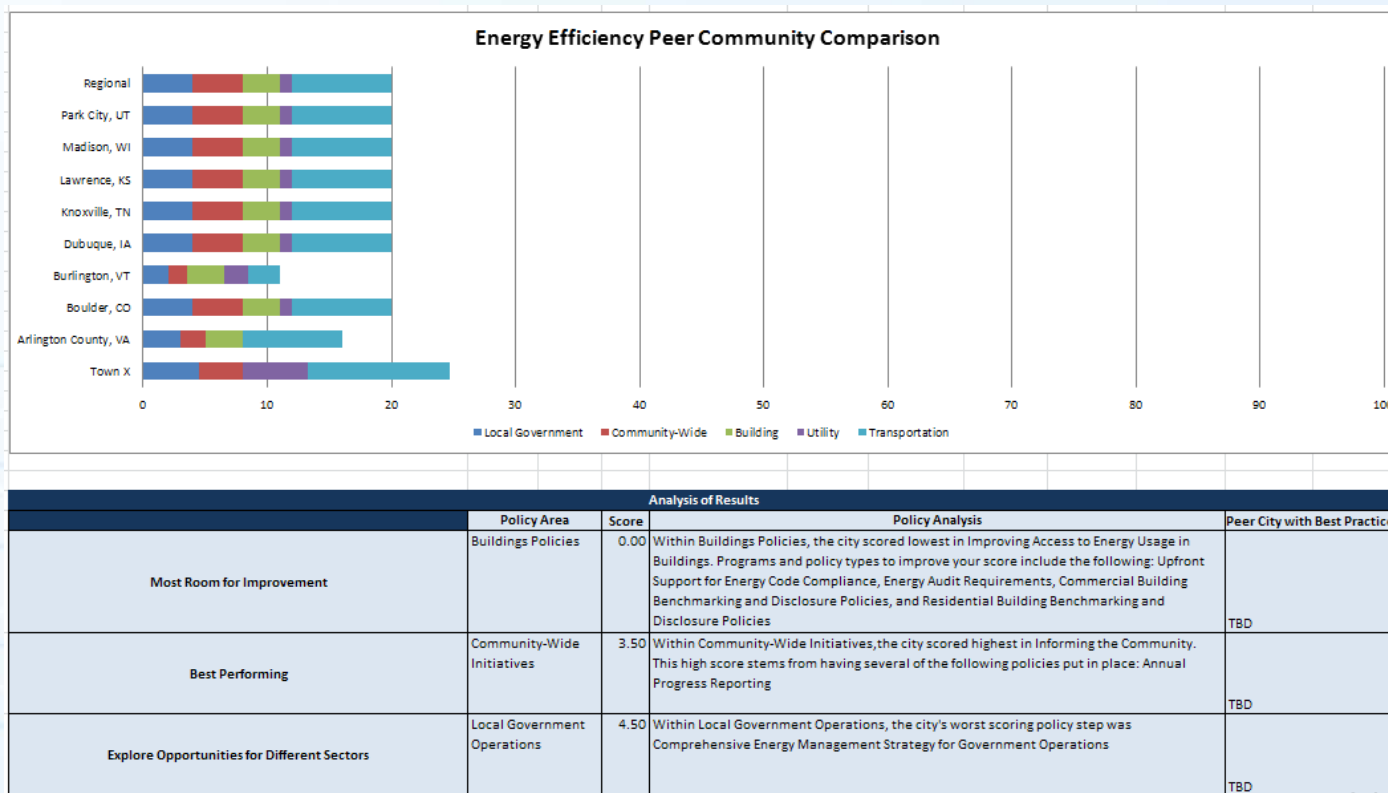
- Expand energy rating and reporting policy to cover multifamily buildings.

Trends & Future of Local Efficiency Policy

- City motivations vary, but influence of ARRA continues
- New policy activity since data collection ended (e.g. Chicago comm. disclosure)
- Battle for “most improved”? – Tier 2 is very active with new community-scale policy, considerable interest among middle cities

Local Energy Efficiency Self-Scoring Tool

- User-oriented, spreadsheet tool to score any local gov't on *City Scorecard* metrics
- Beta version planned for release in October, testers needed





American Council for an Energy-Efficient Economy

Energy & Water Utility Metrics in The 2013 City Energy Efficiency Scorecard

Kate Johnson, Senior Policy Analyst

October 1, 2013

Efficiency Cities Network webinar

Energy Utilities Scoring Methodology



Policy	Metric	Source	Points
Electric Efficiency Spending*	Spending as a Percentage of Annual Revenue	U.S. DOE Energy Information Administration Form 861	4
Natural Gas Efficiency Spending*	Spending per Residential Customer	Utility Regulatory Reporting	3
Electric Savings	Savings (kWh) as a Percentage of Sales	U.S. DOE Energy Information Administration Form 861	2
EE Targets and Requirements*	Percentage Annual Savings Targets	Information Requests, ACEEE State Policy Database	2
Energy Data Provision	Availability of customer, whole-building, and community level utility data	GreenButtonData.org, ENERGY STAR Portfolio Manager, Information Requests	2
TOTAL			13

Municipally vs. Privately Owned Utilities

*Different scoring pathways account for varying levels of authority over utility policy and programs:

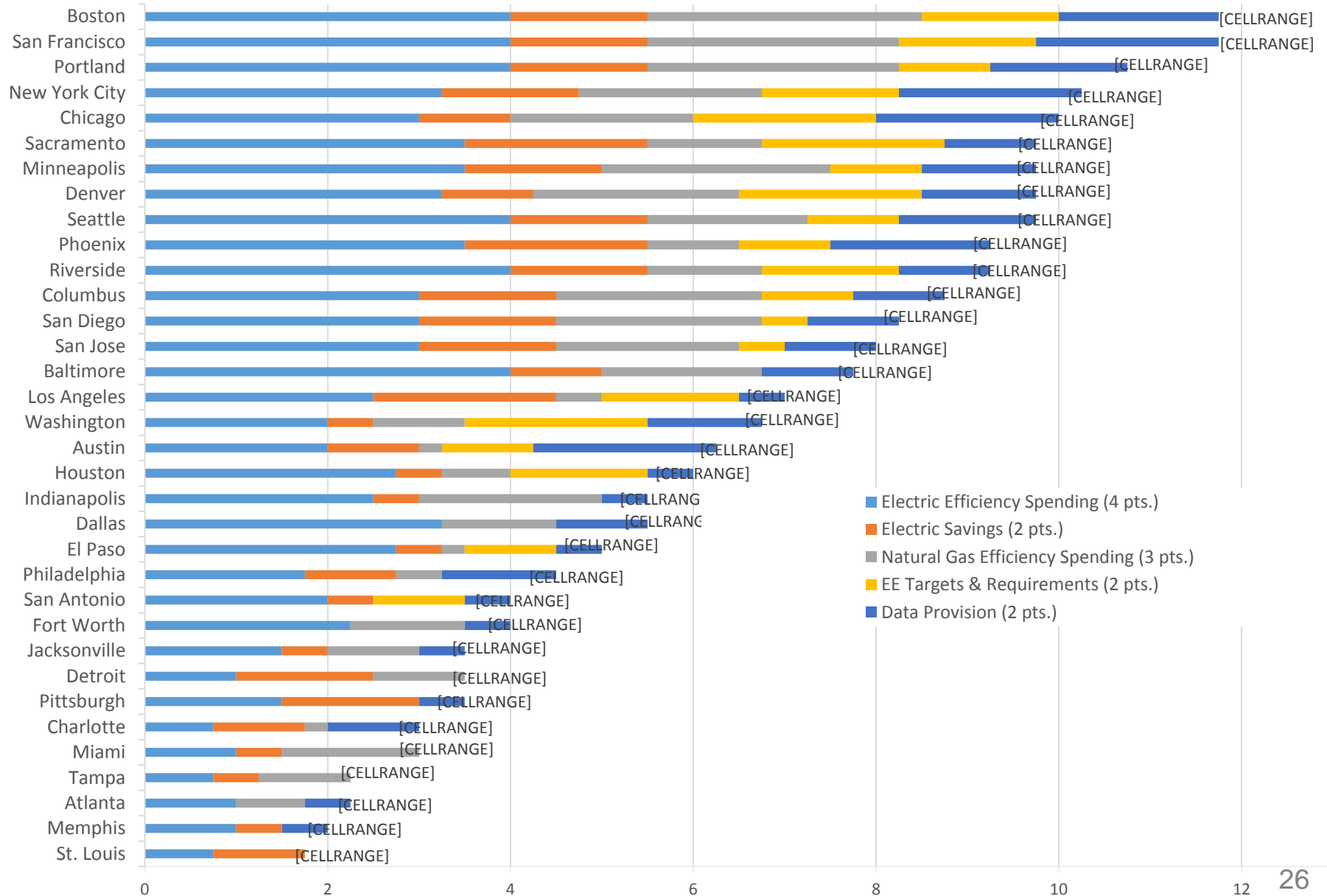
- ❑ Cities with privately owned utilities earn points for advocacy and participating in state regulatory proceedings
 - ❑ **Examples: Boston & the Mass Energy Efficiency Advisory Committee, Portland Fair and Clean Energy Coalition**
- ❑ Points for energy savings targets awarded for formal efficiency partnerships with utilities (municipal aggregation, franchise, and other funding agreements)
 - ❑ **Examples: San Francisco/San Jose Energy Watch, Chicago Municipal Aggregation**

Water Utilities Scoring Methodology



Policy	Metrics	Points
Water Efficiency	Water efficiency programs	1
	Water savings targets	1
Energy Efficiency in Water Services	Energy Efficiency Programs	1
	Energy Self-Generation (wastewater plants)	1
Efficient Stormwater Management	Stormwater Policies & Incentives	0.5
	Green Infrastructure Funding	0.5
TOTAL		5

Energy Utilities Results



Examples from Leading Cities

City-Utility Partnerships



San Francisco Energy Watch

- Utilities: Pacific Gas & Electric



Renew Boston

- Utilities: NSTAR, National Grid

Examples from Leading Cities

Improving access to utility data



Seattle

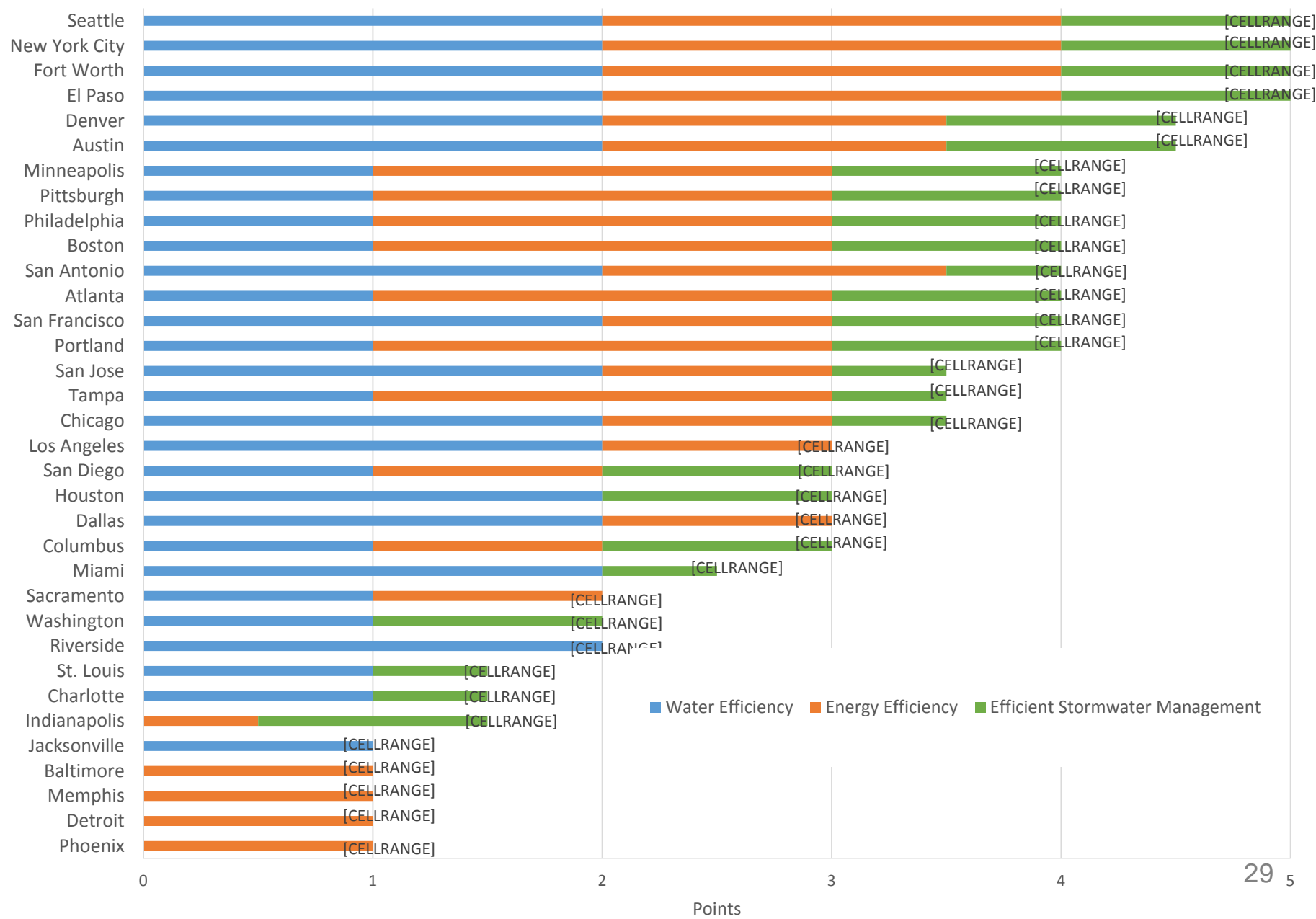
- **Seattle City Light and Puget Sound Energy Automated Benchmarking Services**



Chicago

- **ComEd Energy Usage Data Tool**

Water Utilities Results



Examples from Leading Cities Water Conservation Programs



El Paso Water Utilities

- **GOAL:** Reduce per capita water consumption from 139 to 130 gallons per day from 2011-2020



Seattle Saving Water Partnership

- **GOAL:** Reduce per capita water consumption from 119 to 105 gallons per day from 2013-2018

Examples from Leading Cities Stormwater Management



New York City

- **PlaNYC Sustainable Stormwater Management Plan**



Washington, DC

- **Stormwater utility fees and RiverSmart Homes Program**

Challenges & Future Considerations

- ❑ Recognizing a wide variety of utility partnerships for funding, technical services, and outreach
- ❑ Timeliness of energy utility data on spending and savings
- ❑ Lack of city-specific utility data – have to rely on utility service territories
- ❑ Incorporating various governance models for drinking, stormwater, and wastewater utilities

Thank You

Eric Mackres

202-507-4038

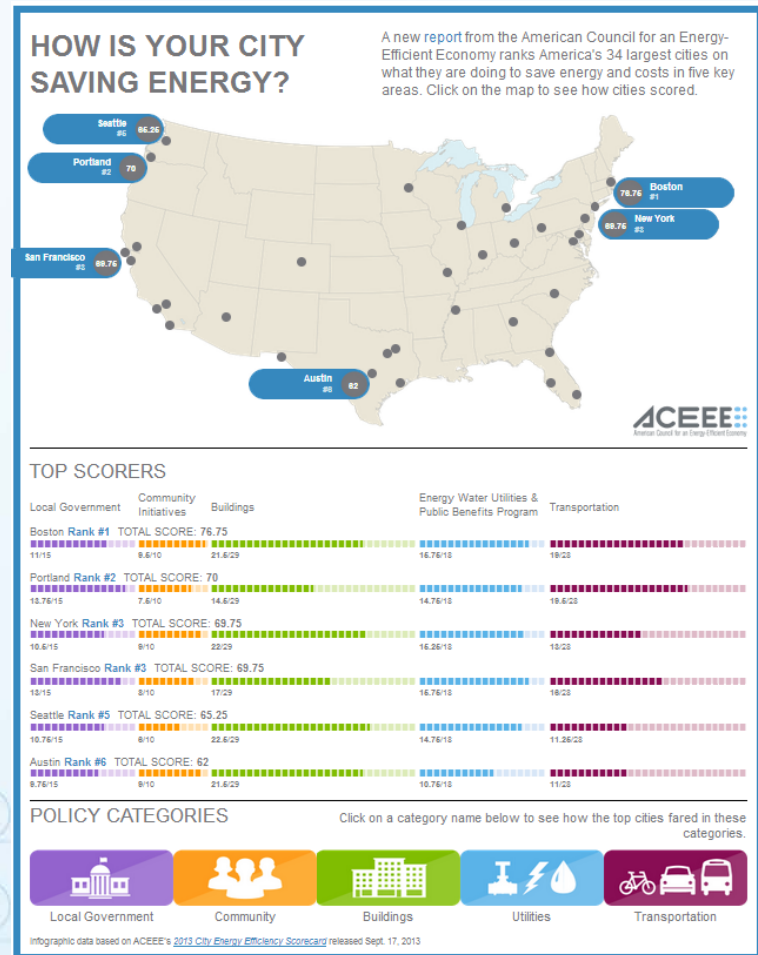
emackres@aceee.org

Kate Johnson

202-507-4039

kjohnson@aceee.org

Report and infographic available at
aceee.org/local-policy/city-scorecard





SFEnvironment

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A Department of the City and County of San Francisco

SAN FRANCISCO ENERGY PROGRAM

ACEEE October 1, 2013

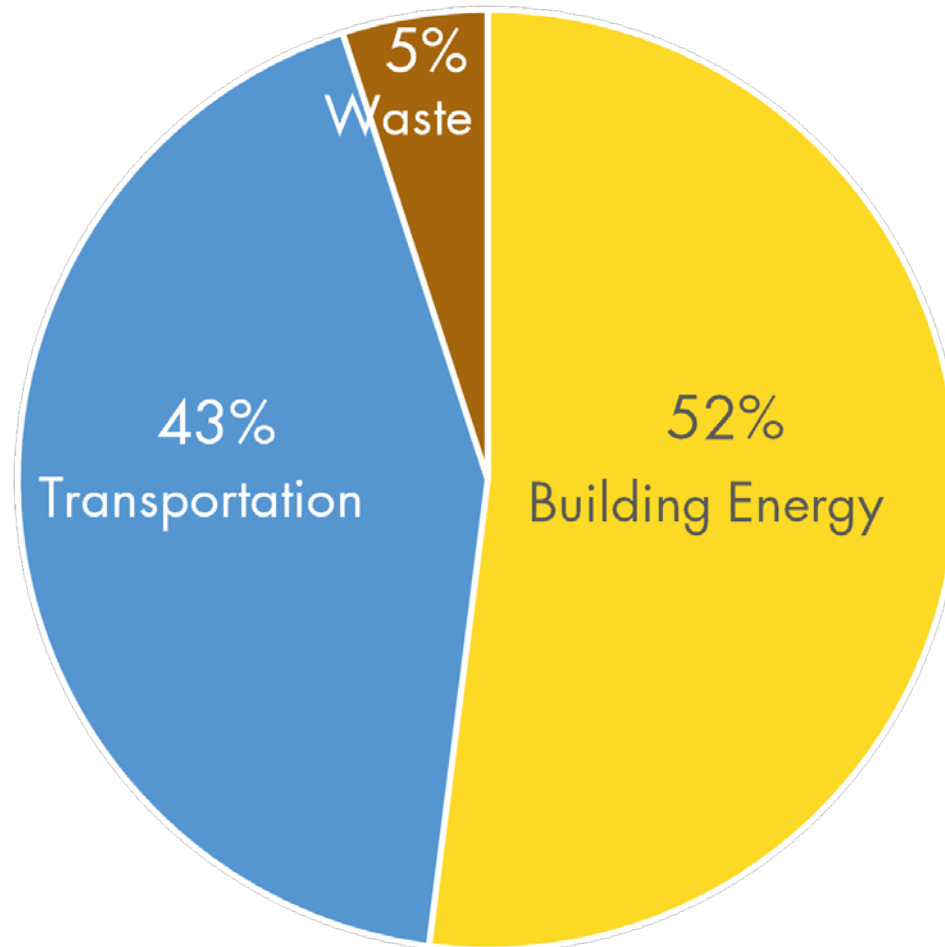


Melanie Nutter
Director
Department of Environment

The City of San Francisco



San Francisco Greenhouse Gas Emissions By Sector - 2010



5.3 Million Metric Tons

SF Projected GHG Reductions by 2030



100% Renewable Electricity: 941,785 mT

Energy Efficiency: 301,979 mT

Transportation Measures: 217,794 mT

Electric Vehicles: 59,774 mT

BART & Caltrain: 89,048 mT

Biking, Walking, MUNI: 72,154 mT

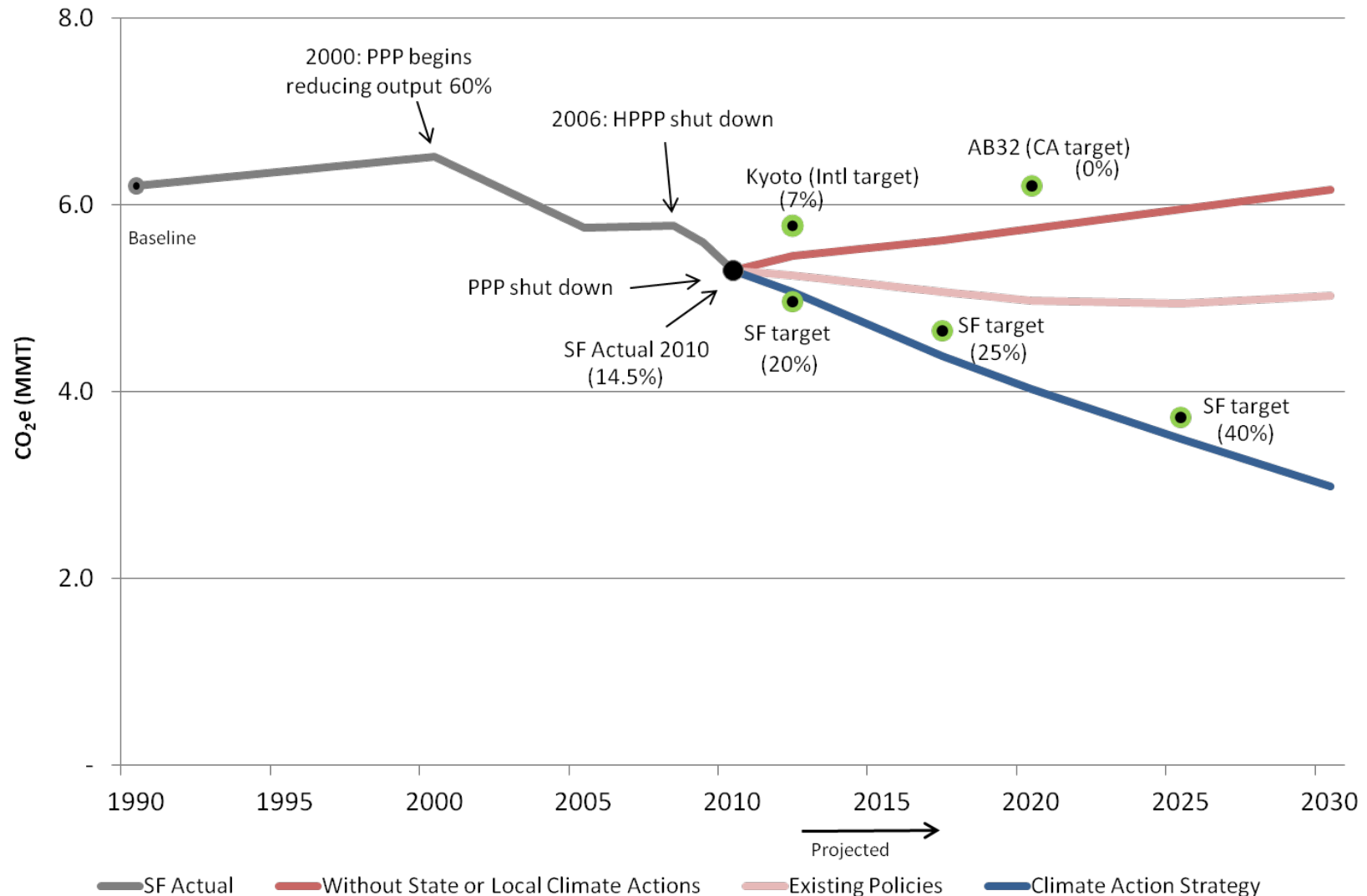
MUNI CAS: 69,302 mT

Zero Waste: 292,957 mT

Urban Forest: 15,594 mT

Total: 2,060,388 metric tons CO₂e

San Francisco Greenhouse Gas Emissions



HPPPP = Hunter's Point Power Plant PPP = Potrero Power Plant

Lead By Example



60 Departments and Over 60 Climate Liaisons

Clean Transportation



EV Ready



Bay Area Bike Share



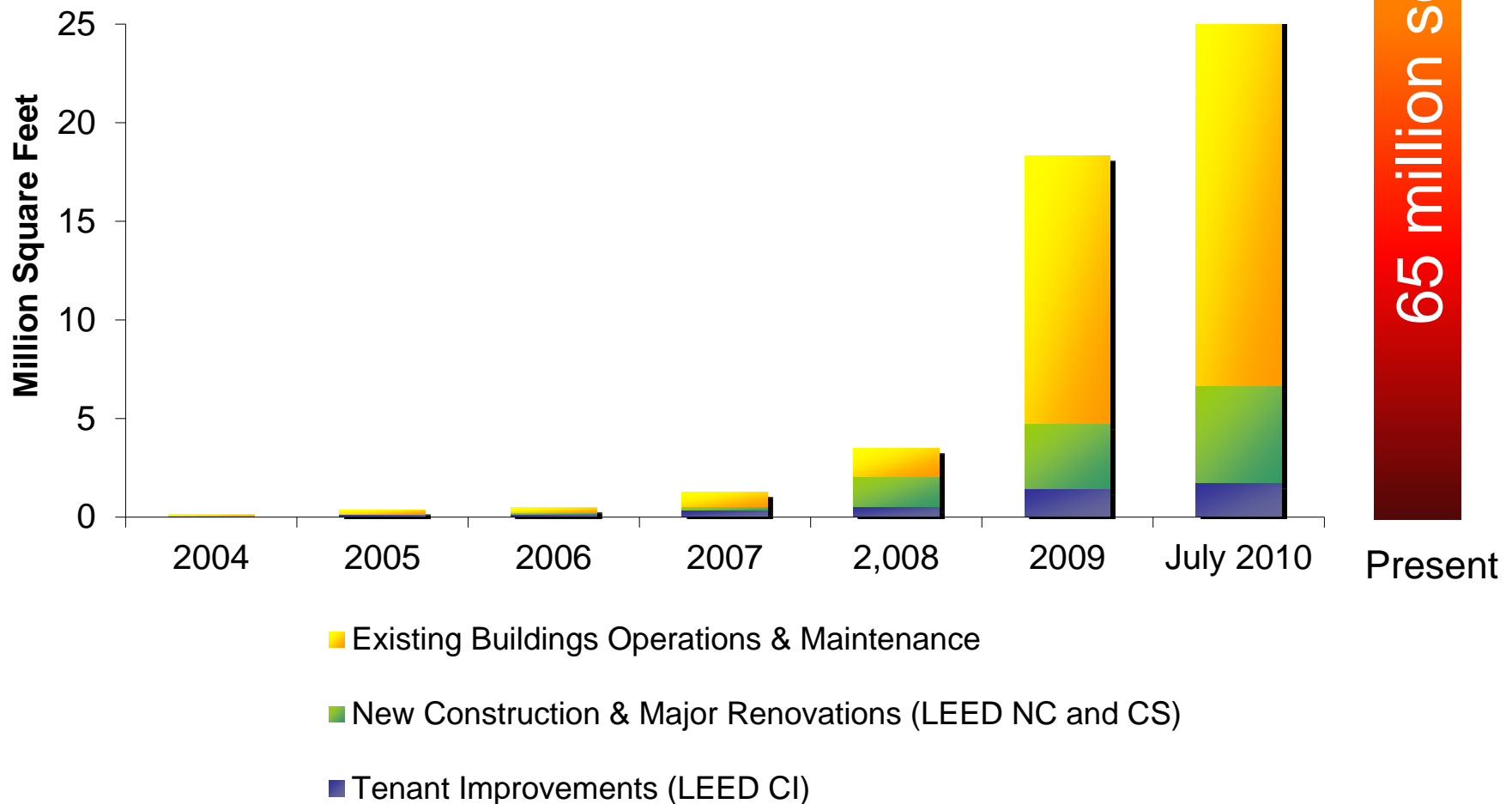
Green Building

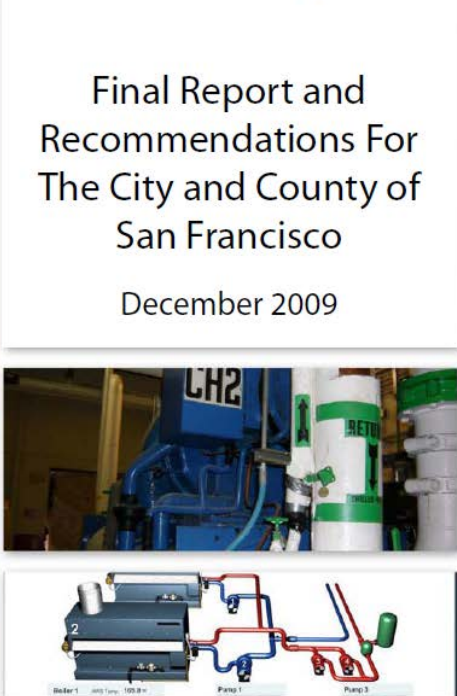


Municipal Green Buildings



Green Building Growth in San Francisco





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 Energy Performance Ordinance



Benchmarking and Disclosure

Passage of Ordinance	2011 (October 1)	2012 (April 1)	2013 (April 1)	... and Beyond
Workshops, Earned media, Outreach	Benchmark >50K sq ft ¹	Benchmark >25K sq ft ¹	Benchmark >10K sq ft ¹	Continue

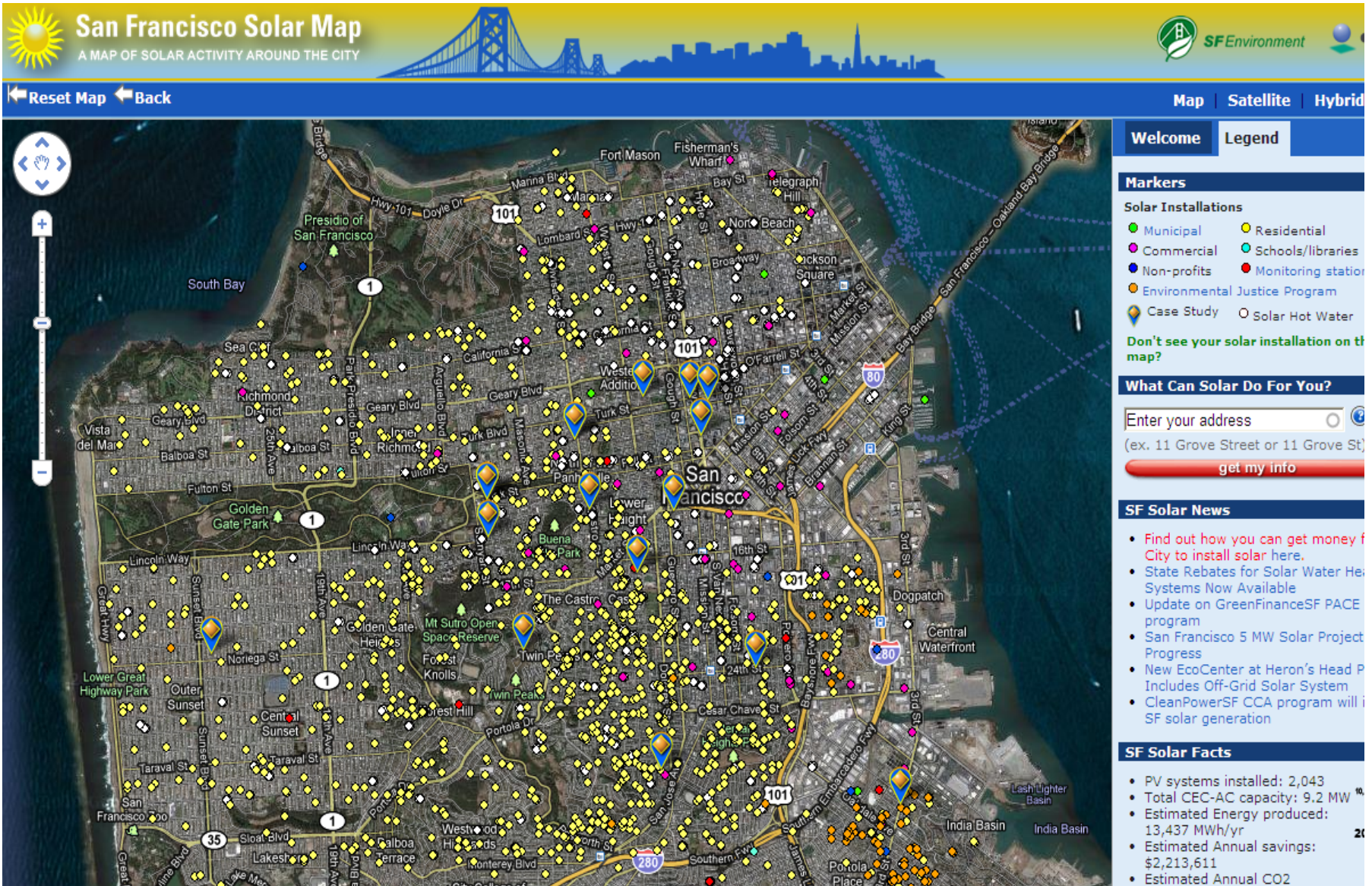
¹ First year data is confidential

Energy Audits or RCx

2011-2012	2013 (January 15)	2013 (April 1)	2014 (April 1)
Notify all building owners	33% of buildings obtain an energy audit ²	Second 33% ²	Final 33% ²

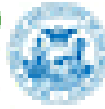
² Once every 5 years after initial audit

Renewable Energy





GreenFinanceSF



Saving You Money, Energy and Water



**FINANCE
AGENT**



Utility Program Progression



2003

SAN FRANCISCO
energy
watch

2006

2013



Since 2006 SF Energy Watch has:

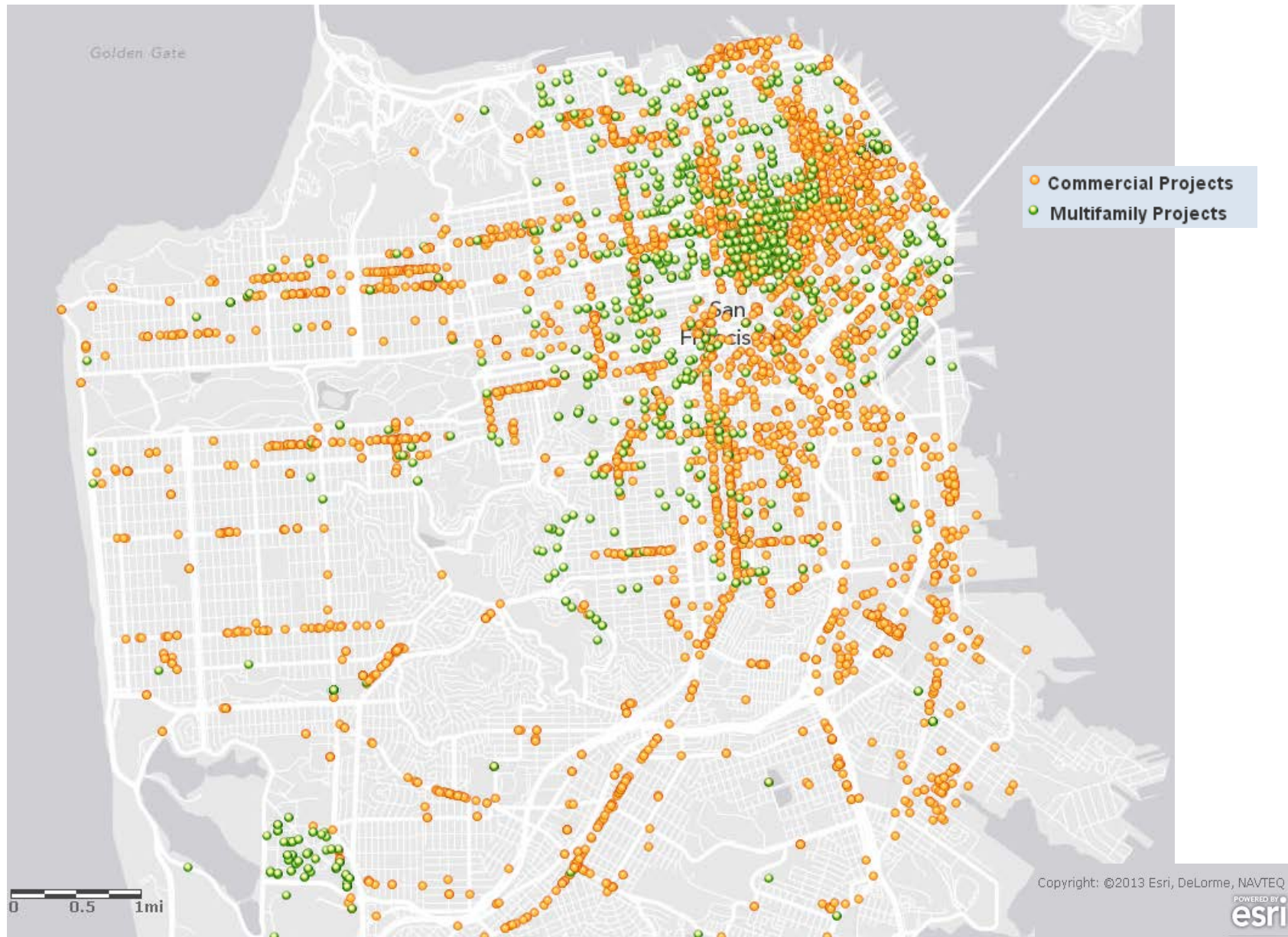


- Installed **5,700** energy efficiency projects in commercial establishments
- **\$4,500** on average annual energy cost savings
- Paid over **\$18.5 million** in incentives
- Reduced **53,400 tons** of carbon emissions

Equivalent to:

- Powering **25,380** San Francisco homes for a year

Over 5,700 Participants!

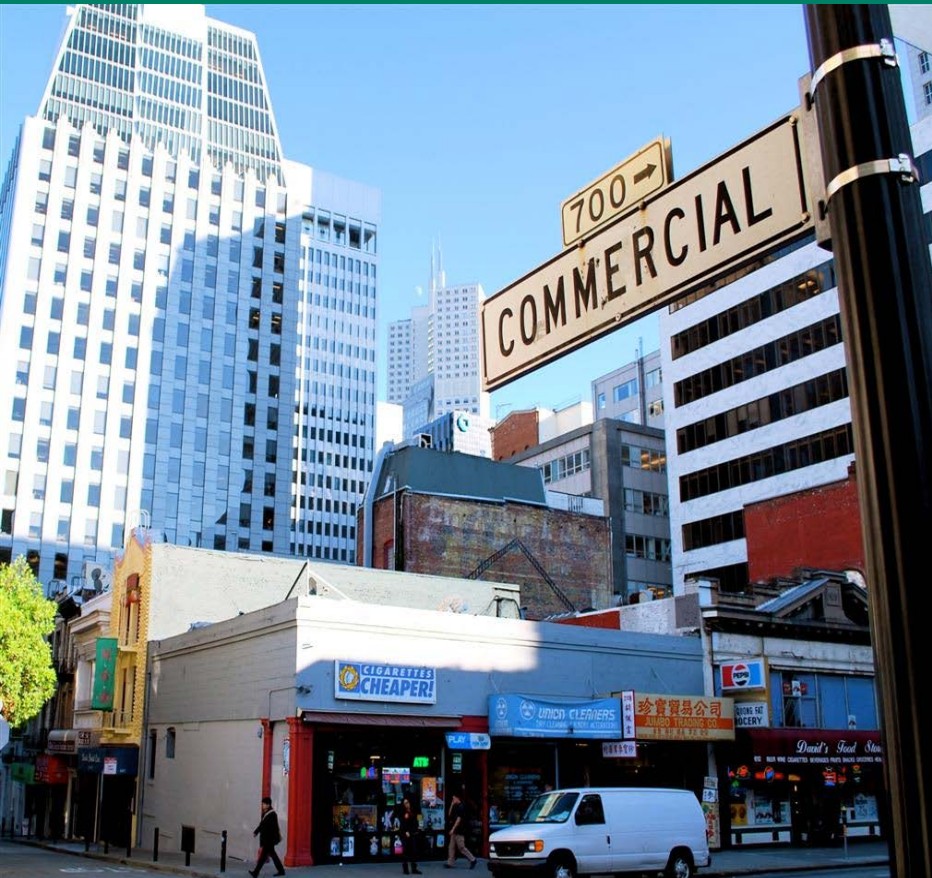


Qualifying Customers by Program Areas



Small – Medium – Large
Businesses & Nonprofits

Multifamily Properties
Condos & Apartments



Qualifying Energy Efficient Products for Incentives



Lighting



Refrigeration



Heating, Ventilation Air Conditioning



Computer Management Network



City-controlled programs: Non-IOU



Small Business Lighting
only
2001-2



- Boiler Systems Incentive Program
 - SF Home Improvement Program
 - Green Home Assessment Program
 - Municipal Retrofit Program
- 2010-13

SF Public Utilities Commission



San Francisco
Water
Power
Sewer

Services of the San Francisco Public Utilities Commission

Community Outreach



Mutlilingual Outreach



Educating the Next Generation



Thank you



Melanie Nutter, Director
Twitter: @melnut
www.SFEnvironment.org



SFEnvironment

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A Department of the City and County of San Francisco

Contact Information for ECN



EFFICIENCY CITIES NETWORK

Administrator - ecn@efficiencycities.org

Listserv - ecnmembers@efficiencycities.org

Website - www.efficiencycities.org

To Join - www.efficiencycities.org/join-us