



Building Energy – Next Generation Policy

Energy & Environment Committee

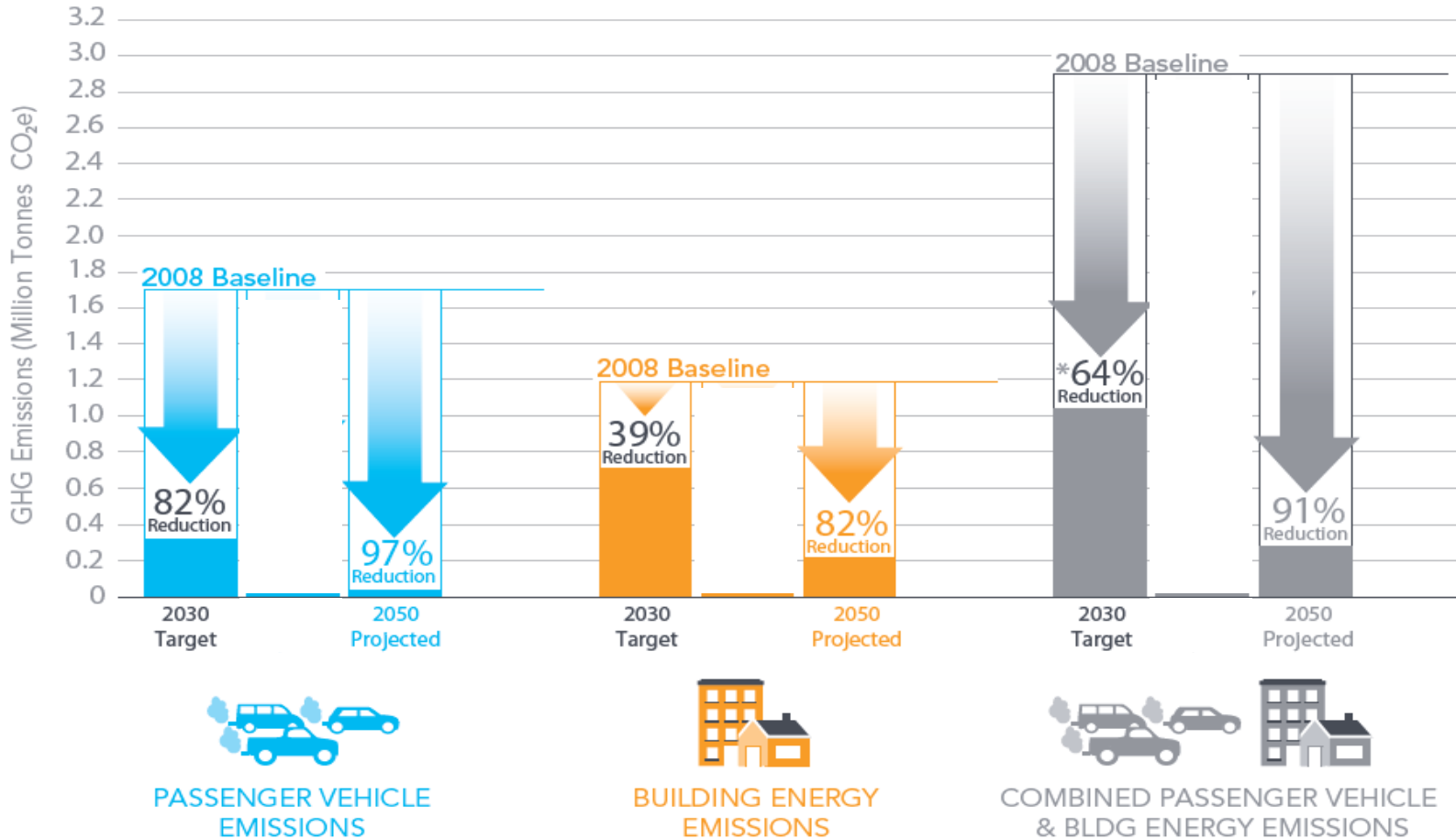
February 25, 2016

Seattle Office of Sustainability & Environment



CAP Emission Reduction Goals

PASSENGER VEHICLE & BUILDING ENERGY EMISSIONS
2030 TARGETS + PROJECTED REDUCTIONS FROM ACTIONS





CAP BUILDING ENERGY TARGETS

2050 ENERGY AND CARBON GOALS



RESIDENTIAL
ENERGY USE
(TRILLION BTU)

63%
Reduction



COMMERCIAL
ENERGY USE
(TRILLION BTU)

45%
Reduction



GHG INTENSITY OF
BUILDING ENERGY USE
(EMISSIONS/BTU)

63%
Reduction



PROGRESS TO DATE

Energy & GHG Reductions

Building Energy Use (2008-2050)

Target Reduction: 1.25% / year

Actual 2008-2012: 0.75% / year

GHG Intensity of Fuels (2008-2050)

Target Reduction: 1.5% / year

Actual 2008-2012: 1.75% / year

Overall Building Emissions (2008-2050)

Target Reduction: 2% / year

Actual 2008-2012: 2.50% / year



PROGRESS TO DATE

Energy Reductions

Commercial Building Energy Use (2008-2050)

Target Reduction: 1.10% / year

Actual 2008-2012: 0.25% / year

Residential Building Energy Use (2008-2050)

Target Reduction: 1.5% / year

Actual 2008-2012: 1.25% / year



CAP STRATEGY FOR BUILDINGS





WORK TO DATE: CAP 2015 ACTIONS

Commercial & Multifamily Buildings

LEADERSHIP (City Facilities)

- ✓ Develop Resource Conservation Management Plan
- ✓ Publish City energy benchmarking scores

INCENTIVES

- Pilot retro-commissioning incentives
- Pilot pay for performance incentives
- Update Living Building pilot

REGULATIONS

- ✓ Minimum energy requirements for substantial alterations
- ✓ Increase efficiency standards in each code cycle
- ✓ Outcome-based code option



PROCESS

- Research Policy Options
 - CAP 2015 & 2030 actions, plus additional alternatives from other jurisdictions
 - Interviews with key cities
- Stakeholder Engagement
 - Discussions with + organizations & individuals
 - Building owners, developers & facility managers
 - Energy efficiency & environmental organizations
 - Service providers and professional organizations
 - Open house September 14, 80 attendees



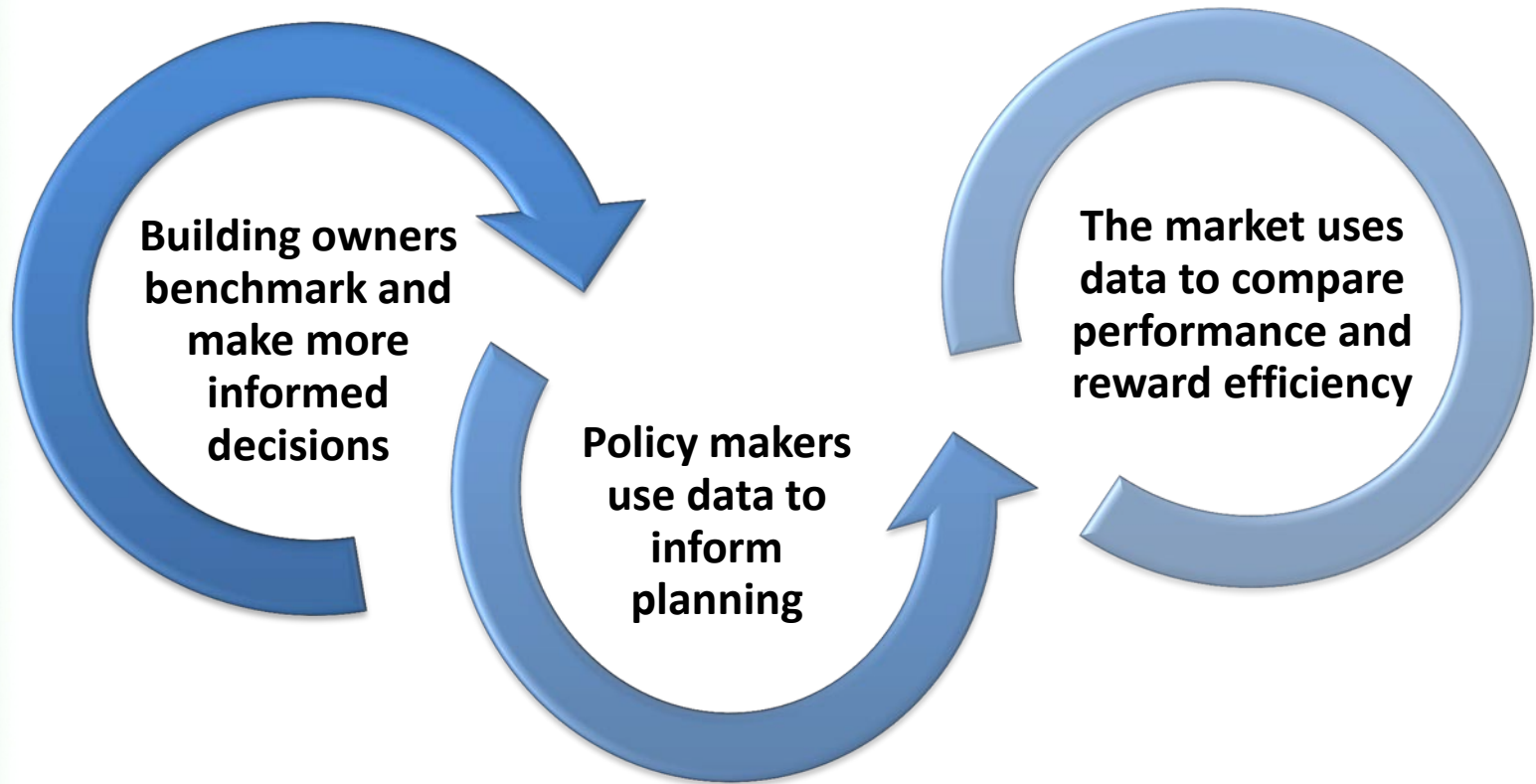
NEXT STEPS – POLICY APPROACH

- 2016 Legislation
 - Energy Benchmarking Transparency
 - Periodic Tune-Ups for Larger Commercial Buildings
 - Accelerated Tune-Ups for City-owned Buildings
- Additional Supporting Actions
 - SCL Incentives
 - Pay for Performance pilot
 - Retro-commissioning pilot
 - Periodic Energy & GHG Goals by Building Type
 - Benchmarking Performance Scorecards
 - SDCI Seattle Energy Code
 - Continued Investigation & Policy Development



BENCHMARKING TRANSPARENCY

Why Transparency?



Why Transparency?

| City | Program Components | Energy Savings Benchmarked Buildings |
|--|---|--|
| San Francisco ¹ 2010-2014 | Benchmarking & Transparency Audits (2013) | 7.9% (over 4 years) 16.9% carbon savings |
| New York City ² 2010 - 2013 | Benchmarking & Transparency Audits (2013) Lighting Upgrades (2025) | 5.7% (over 3 years) 9.9% carbon savings |
| Washington, D.C. ³ 2012 - 2013 | Benchmarking & Transparency | 3% (over 1 year) |
| Seattle ⁴ 2011 - 2013 | Benchmarking | 0.6% (over 2 years) |
| Philadelphia ⁵ 2012 - 2013 | Benchmarking & Transparency | 0.0% (over 1 years) |

1. San Francisco Department of the Environment and Urban Land Institute. *San Francisco Existing Commercial Buildings Performance Report 2010-2014*. (p.14-15)

2. US Department of Energy. *New York City Benchmarking and Transparency Policy Impact Evaluation Report*, May 2015. (p. ii)

3. District Department of the Environment. <http://doee.dc.gov/node/970312> (accessed 2/17/16)

4. Seattle Office of Sustainability & Environment. *Building Energy Analysis Report 2013*. (Executive Summary)

5. *City of Philadelphia Energy Benchmarking Report 2014*. (p. 10)



BENCHMARKING TRANSPARENCY

Key Elements of Legislation

- Benchmarking energy and GHG information available on web
- Transparency would start with 2015 data, reported in 2016
- No change to owner submittal requirements





BUILDING TUNE-UPS

Why Tune-Ups?

- Ensure energy and water are not needlessly wasted by optimizing building performance
- Promote active management of building systems
- Tune-ups yield 5% – 20% annual energy savings/per building and pay back in 2-3 years, on average
- 5% – 7.6% total annual energy savings in non-residential sector
- 7% – 9.3% total annual GHG emissions reduction in non-residential sector





BUILDING TUNE-UPS

Key Elements of Legislation

- **Non-residential buildings \geq 50,000 sq. ft.**
- **Tune-up every 5 years**
- **Phased in by building size**
 - 200,000 sf or larger Oct. 1, 2018
(Municipal Buildings: Oct. 1, 2017)
 - 100,000 – 199,000 sf Oct. 1, 2019
(Municipal Buildings: Oct. 1, 2018)
 - 70,000 – 99,000 sf Oct. 1, 2020
 - 50,000 – 69,000 sf Oct. 1, 2021
(Municipal Buildings: Oct. 1, 2020)
- **Exemptions for evidence of good performance**