



# Building Energy – Next Generation Policy

Energy & Environment Committee

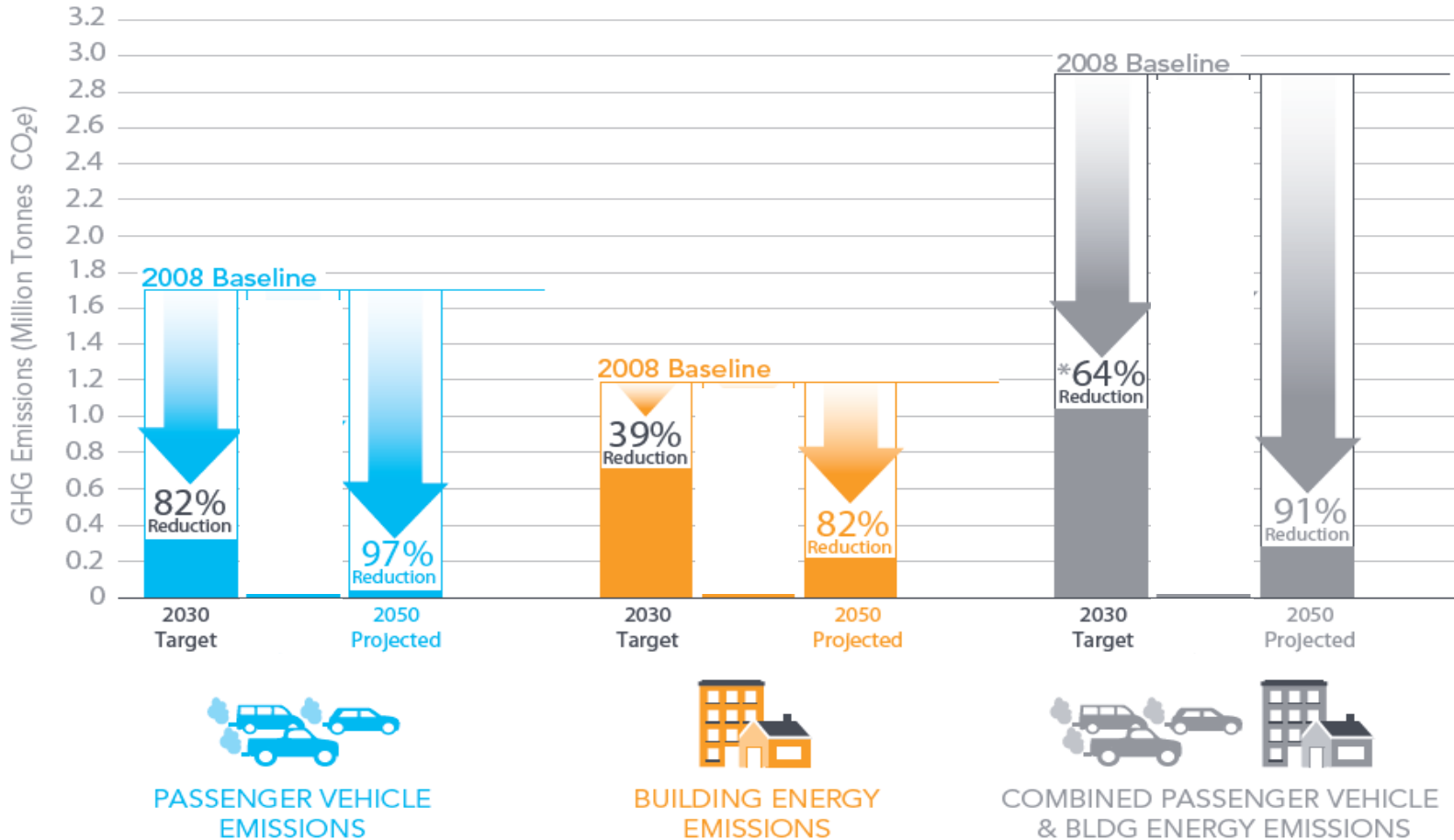
February 25, 2016

Seattle Office of Sustainability & Environment



# CAP Emission Reduction Goals

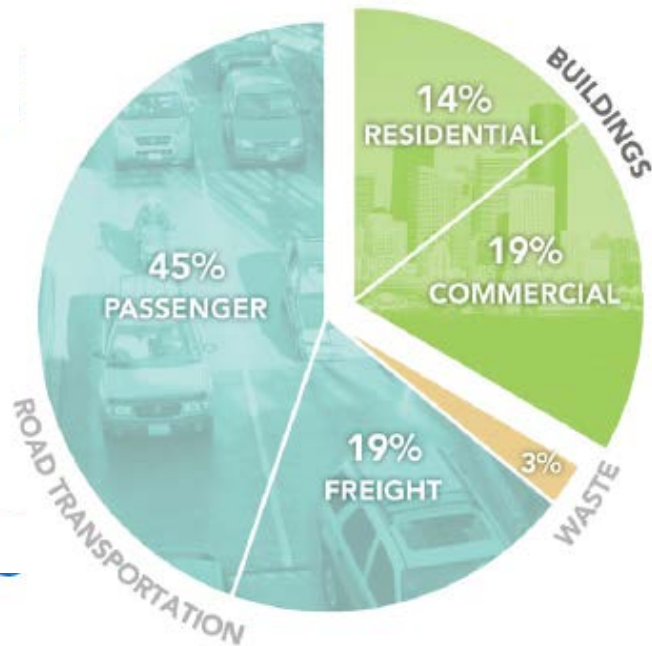
PASSENGER VEHICLE & BUILDING ENERGY EMISSIONS  
2030 TARGETS + PROJECTED REDUCTIONS FROM ACTIONS





# 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**

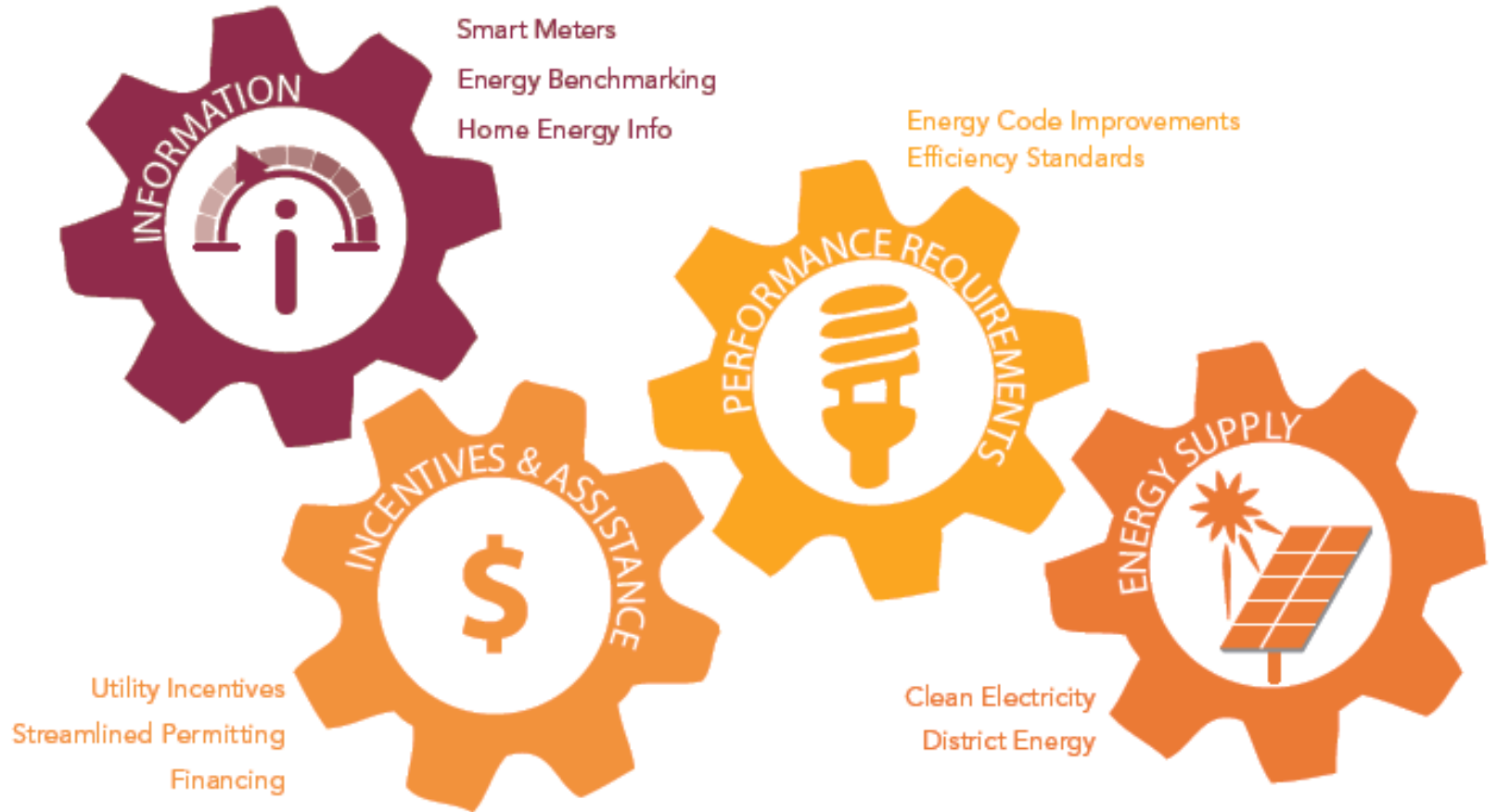
### Residential Building Energy Use (2008-2050)

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





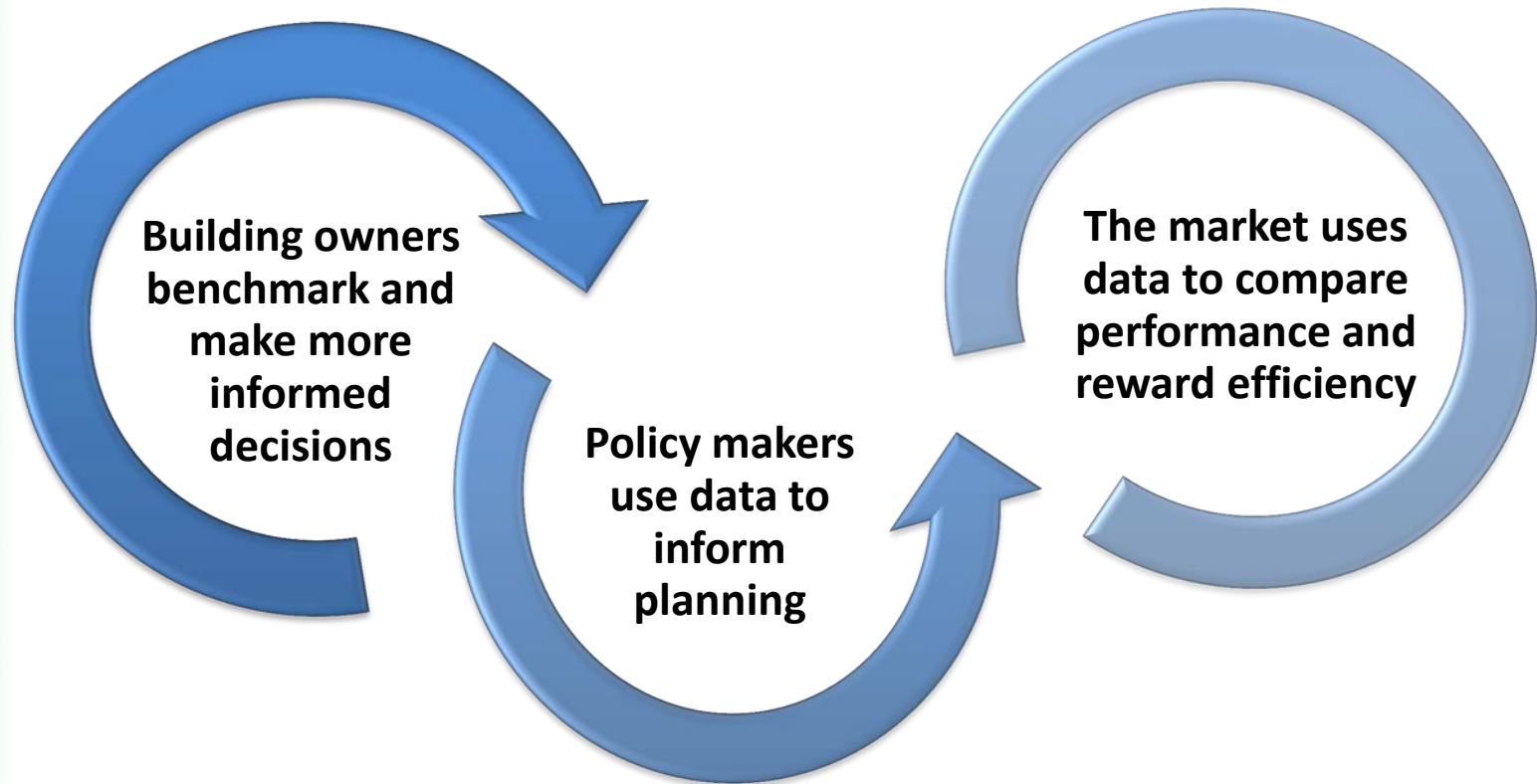
# NEXT STEPS – POLICY APPROACH

- 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 <sup>1</sup> 2010-2014	Benchmarking & Transparency Audits (2013)	<b>7.9%</b> (over 4 years) 16.9% carbon savings
New York City <sup>2</sup> 2010 - 2013	Benchmarking & Transparency Audits (2013) Lighting Upgrades (2025)	<b>5.7%</b> (over 3 years) 9.9% carbon savings
Washington, D.C. <sup>3</sup> 2012 - 2013	Benchmarking & Transparency	<b>3%</b> (over 1 year)
Seattle <sup>4</sup> 2011 - 2013	Benchmarking	<b>0.6%</b> (over 2 years)
Philadelphia <sup>5</sup> 2012 - 2013	Benchmarking & Transparency	<b>0.0%</b> (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**