

April 7th K4C Green Building and Energy Efficiency Summit



Agenda

- **Celebratory Kickoff (10 minutes)**
- **How Green Building and Energy Efficiency Strategies Fit in with the K4C's Joint Commitments (5 min)**
- **Updates on K4C Washington State Energy Related Priorities (10 min)**
- **Why Green Building and Energy Efficiency? (10 min)**
- **Local Priorities for Green Building and the Regional Code Collaboration (45 min, including 15 min for discussion)**
- **K4C Commercial Building Benchmarking Recommendations (30 min, including 10 min for discussion)**
- **Recap of Summit Discussion and Recommendations (10 min)**



“I am proud to distinguish the King County-Cities Climate Collaboration for its outstanding actions and dedication to reduce harmful carbon pollution that leads to climate change,” said EPA Administrator Gina McCarthy. “K4C is leading the way towards a healthy environment, and demonstrates that meeting challenges of a changing climate can be done.”

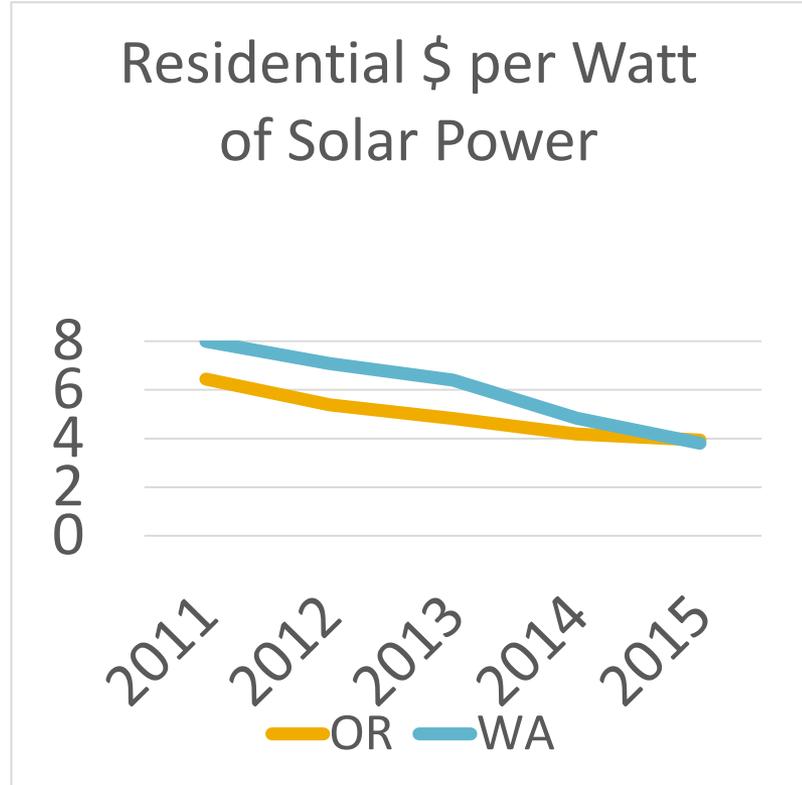
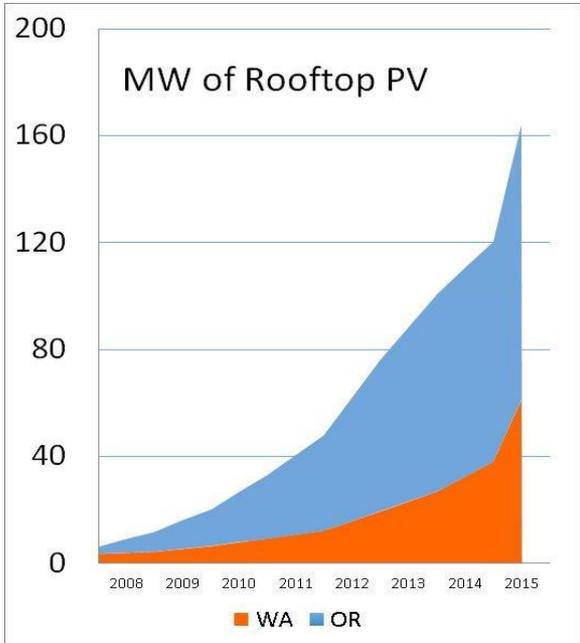


CLIMATE LEADERSHIP AWARDS **2016**

Innovative Partnerships Certificate Recipient

Honored for “Innovative Partnerships,” the K4C was one of only 17 organizations, partnerships or individuals across the United States to win the prestigious recognition from EPA.

The Northwest Solar Communities program recognizes the leadership of the Regional Code Collaboration (RCC) to support state efforts for standardized building codes making solar ready development simple, fast, and cost effective!



The RCC and five K4C cities have now received Northwest Solar Communities Recognition: Bellevue, Kirkland, Mercer Island, Seattle and Snoqualmie.

K4C Recap: How Green Building and Energy Efficiency strategies fit in with the K4C's Joint Commitments

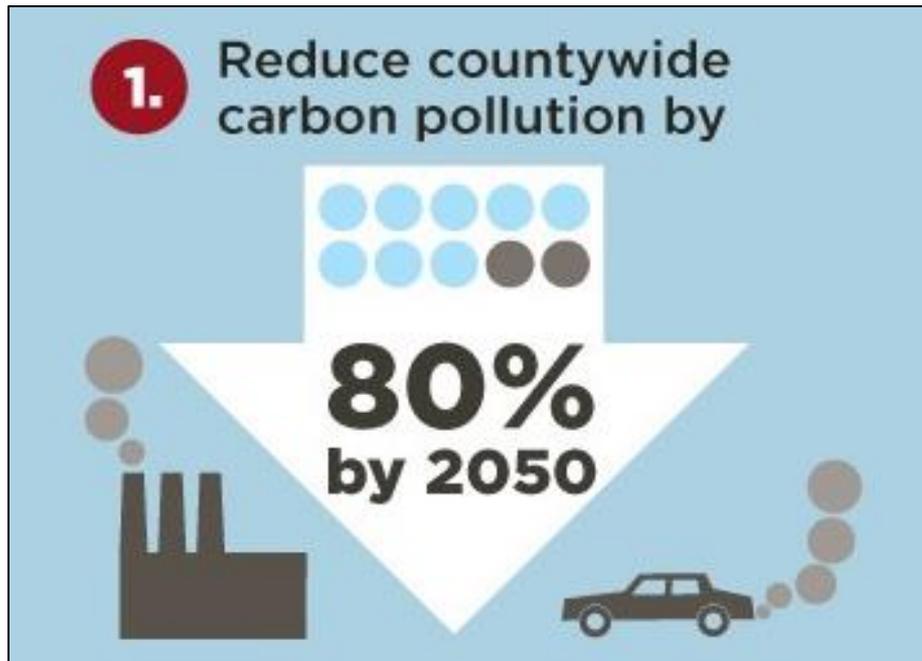


K4C partners together represent 1.5 million people and 75% of King County's population.

K4C Recap: Adopting Shared GHG Emissions Reduction Targets

Growth Management Planning Council – July 2014

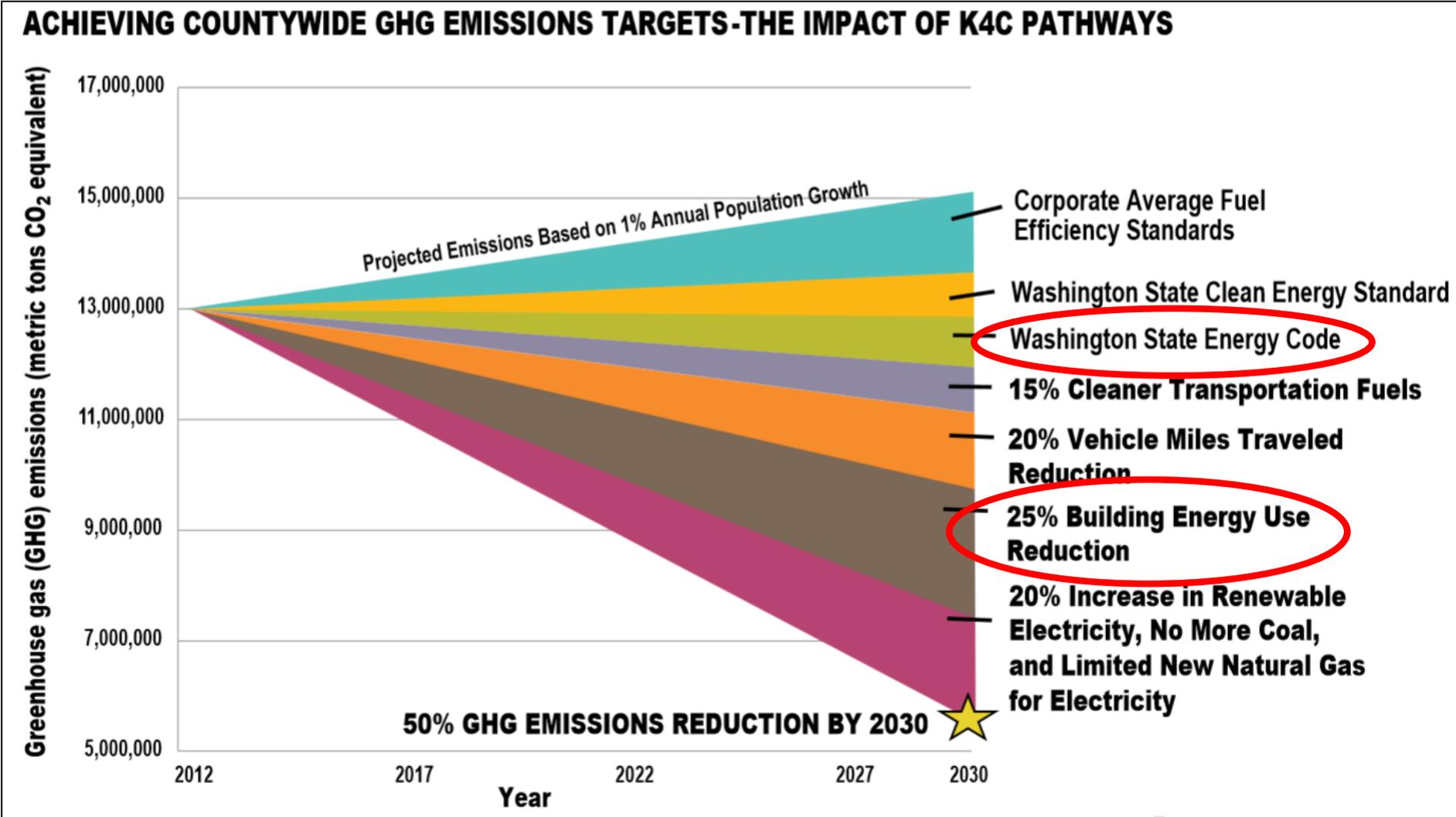
- **Unanimous adoption of shared, countywide, near and long term greenhouse gas (GHG) emission reduction goals**
 - Long term vision: at least 80% below 2007 emissions by 2050
 - Stair steps on the way: 25% by 2020; 50% by 2030



- *Informed by science about what it will take to avoid the worst impacts of climate change*
- *Ambitious but achievable*
- *Supportive and consistent with city and county targets*

K4C Recap: "Carbon Wedge" Analysis

Doing the math to know what it will take to achieve shared GHG reduction targets



K4C Recap: Developing Joint Actions and Commitments

Feb, June 2014 & Jan, Oct 2015
K4C Elected Official Climate Summits



K4C Recap: Joint County-City Climate Commitments

K4C Joint County-City Climate Commitments



Elected Officials of King County and King County Cities

Dow Constantine
 Dow Constantine
 King County Executive

Larry Phillips
 Larry Phillips
 King County Council Chair

Bruce Bassett
 Bruce Bassett
 Mayor, City of Mercer Island

Matthew Larson
 Matthew Larson
 Mayor, City of Snoqualmie

Shari E. Winstead
 Shari E. Winstead
 Mayor, City of Shoreline

Jim Haggerton
 Jim Haggerton
 Mayor, City of Tukwila

Edward B. Murray
 Edward B. Murray
 Mayor, City of Seattle

Denis Law
 Denis Law
 Mayor, City of Renton

Amy Walen
 Amy Walen
 Mayor, City of Kirkland

John Marchione
 John Marchione
 Mayor, City of Redmond

Fred Butler
 Fred Butler
 Mayor, City of Issaquah

Claudia M. Balducci
 Claudia Balducci,
 Mayor, City of Bellevue

Tom Vance
 Tom Vance
 Mayor, City of Sammamish

Joint County-City Climate Commitments



I. Shared Goals



VI. Consumption and Materials Management



II. Climate Policy



VII. Forests and Farming



III. Transportation and Land Use



VIII. Government Operations



IX. Collaboration



IV. Energy Supply



V. Green Building and Energy Efficiency

Last Summit; PSE Collaboration

This Summit

K4C Recap: Joint Climate Commitments and Today's Focus

K4C's Green Building and Energy Efficiency Commitments	
Pathway	<ul style="list-style-type: none">Reduce energy use in all existing buildings 25% below 2012 levels by 2030; achieve net-zero GHG emissions in new buildings by 2030.
Catalytic Policy Commitment	<ul style="list-style-type: none">Join the Regional Code Collaboration and work to adopt code pathways that build on the Washington State Energy Code, leading the way to “net-zero carbon” buildings through innovation in local codes, ordinances, and related partnerships.
Catalytic Project or Program	<ul style="list-style-type: none">Develop a multi-city partnership to help build a regional energy efficiency retrofit economy, including tactics such as: collaborating with energy efficiency and green building businesses, partnering with utilities, expanding on existing retrofit programs, adopting local building energy benchmarking and disclosure ordinances, and encouraging voluntary reporting and collaborative initiatives such as the 2030 District framework.

K4C Green Building and Energy Efficiency Summit - AGENDA



Updates on K4C Washington State energy related priorities (10 min)

- Megan Smith, King County
- Ross Freeman, Mercer Island



Department of Commerce

Why Green Building and Energy Efficiency?

Chuck Murray
SR. Energy Policy Specialist

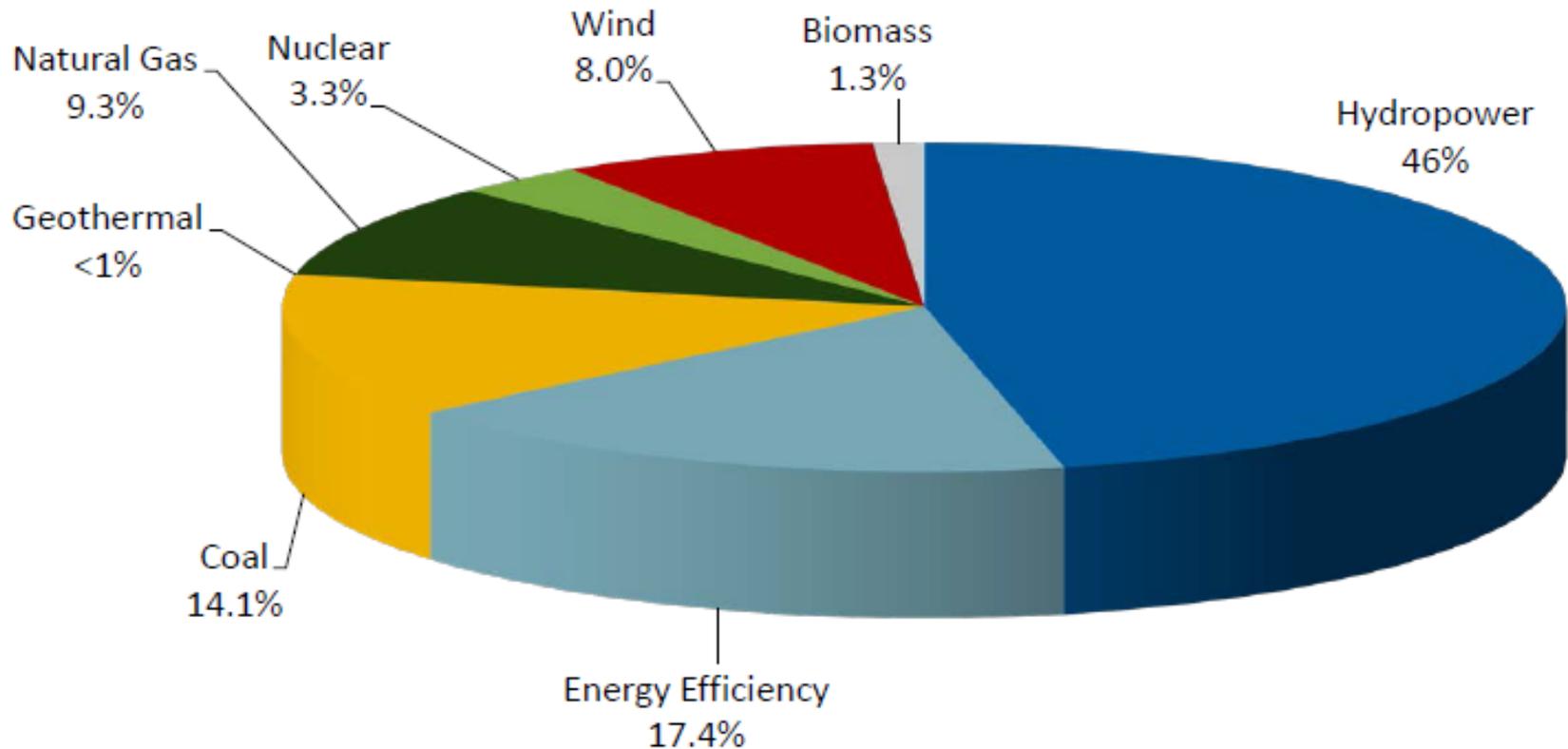
February 4, 2016

Washington has the Lowest Cost Electricity in the Nation

- *This is no accident*
- Past investments in low cost generation has been extended by Energy Efficiency
- This saves NW Ratepayers spend about \$3.75 billion per year for electricity



Energy Efficiency Was The Region's Second Largest Resource in 2014



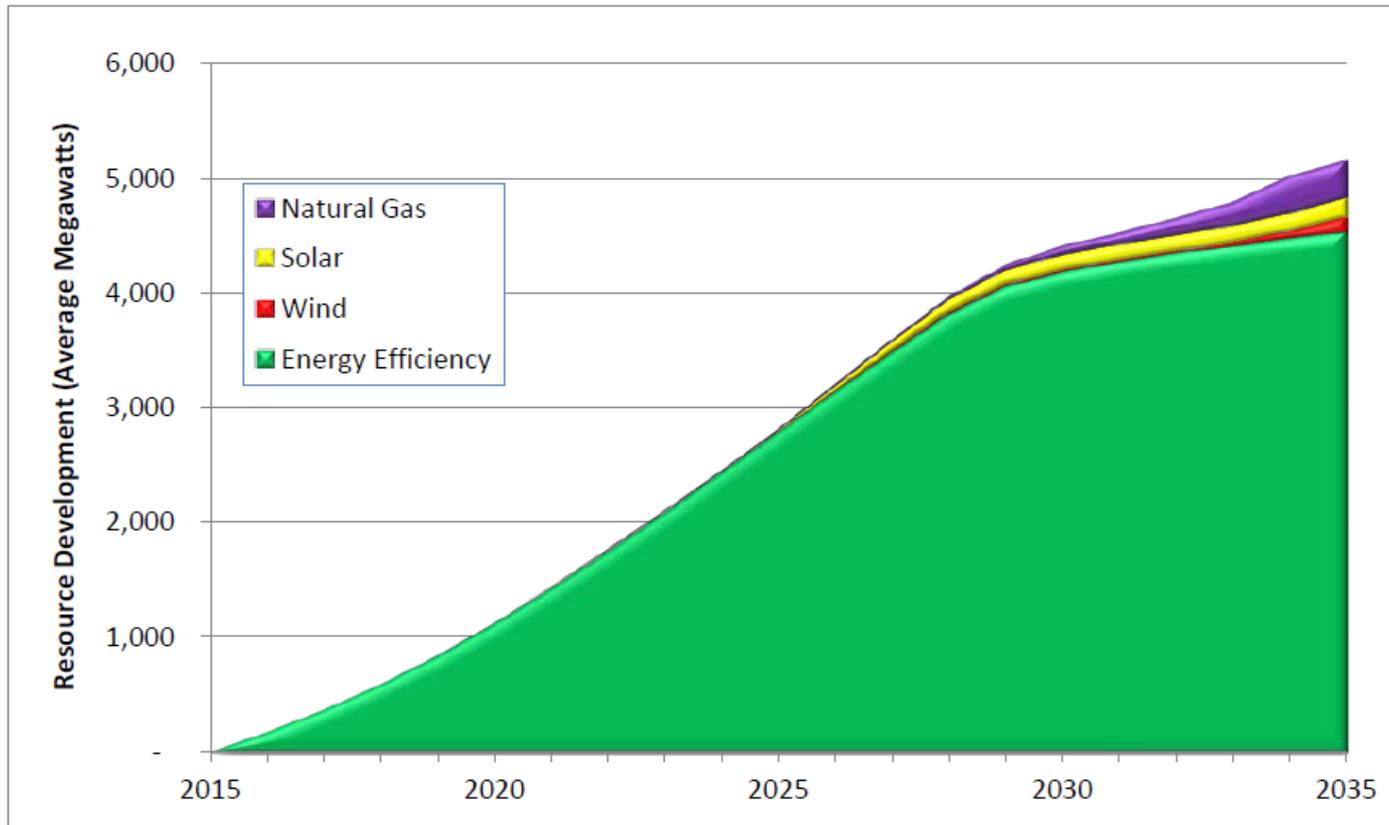
From <http://www.nwcouncil.org/media/7149733/1.pdf>



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Lowest Cost Resources for the Next 20 Years

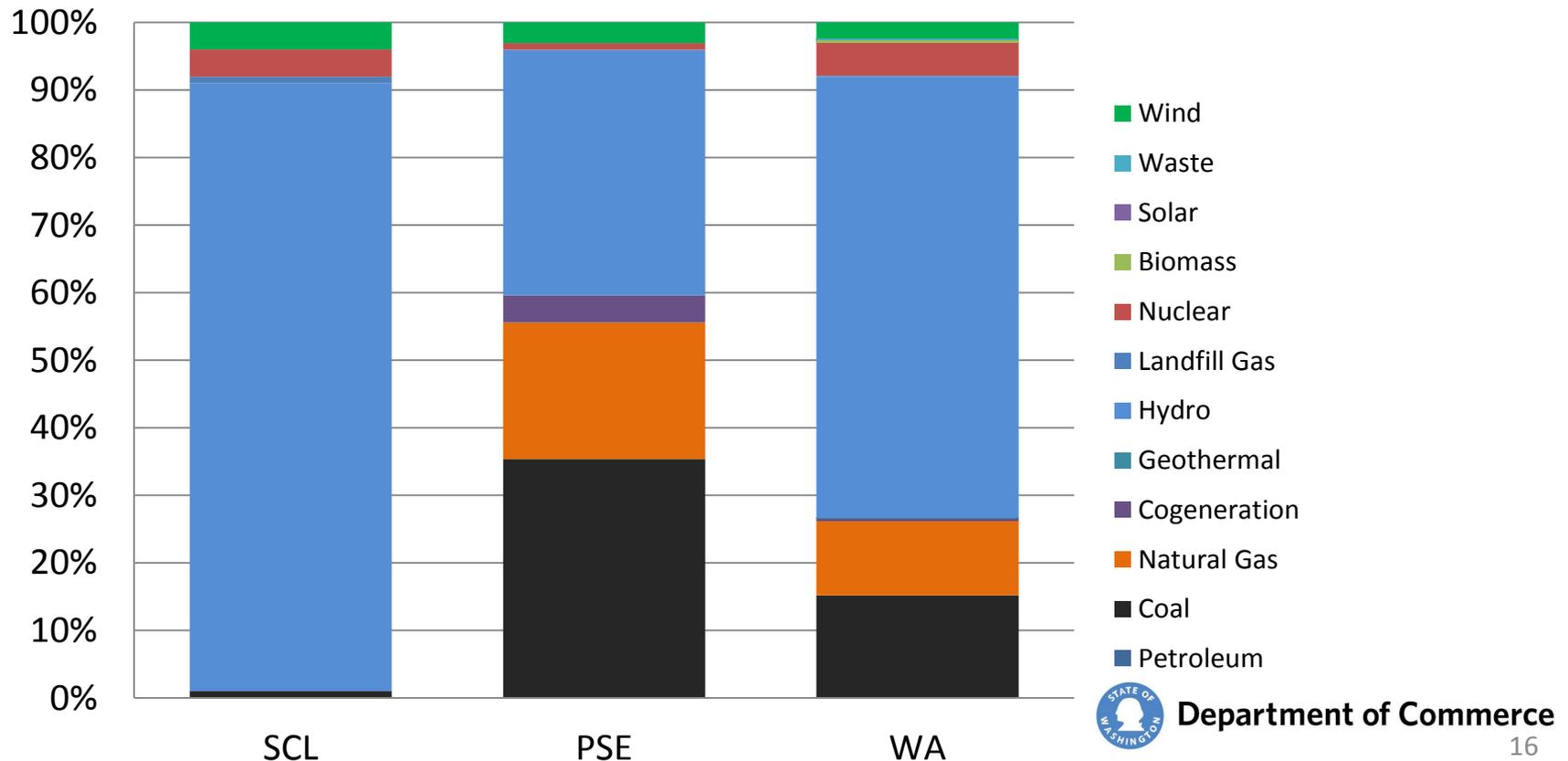
Figure 1 - 1: Seventh Plan Resource Portfolio¹



Commercial Building Fuel Mix

- Roughly 20% On-Site Natural Gas and..

Electric Utility Fuel Mix (2014)





The Economic Impacts and Macroeconomic Benefits of Energy Efficiency Programs in Washington

ECONorthwest
ECONOMICS • FINANCE • PLANNING



Department of Commerce

In the baseline scenario, \$499.8 million was spent in Washington on energy-efficiency improvements.
 What were the gross, alternative, and net impacts?

	Gross Impacts	Minus the Alternative*	Equals the Net Impact:
 JOBS	7,577	- 3,770	= 3,807
 LABOR INCOME	\$455.5MN	- \$189.3MN	= \$266.2MN
 GRP	\$594.4MN	- \$378.4MN	= \$216MN

*The "Alternative" refers to what happens if the money that went toward energy efficiency was spent elsewhere.



What were the gross, alternative, and net impacts of lowering annual utility bills by \$115.9 million?

	Gross Impact of consumers spending their utility bill savings		Minus the Alternative*		Equals the Net Impact:
 JOBS	1,104	-	247	=	857
 LABOR INCOME	\$56.3MN	-	\$20.3MN	=	\$36MN
 GRP	\$112MN	-	\$104.5MN	=	\$7.4MN

*Without energy-efficiency measures, consumers would pay higher utility bills.



Select References

- IMT Benefits of Benchmarking
 - http://www.imt.org/uploads/resources/files/PCC_Benefits_of_Benchmarking.pdf
- DOE Evaluation of New York Benchmarking
 - <http://energy.gov/sites/prod/files/2015/05/f22/DOE%20New%20York%20City%20Benchmarking%20snd%20Transparency%20Policy%20Impact%20Evaluation....pdf>
- NEEC / Econ NW
 - http://nec.net/sites/default/files/news_img/WA-EnergyEfficiency_Report.pdf





Department of Commerce

Presented by:

Chuck Murray

SR. Energy Policy Specialist

(360) 725-3113

chuck.murray@commerce.wa.gov

www.commerce.wa.gov

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Local Priorities for Green Building and the Regional Code Collaboration

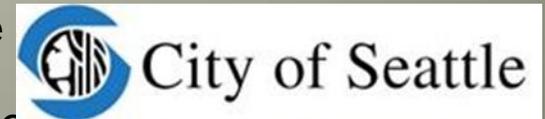


**“The whole is greater than the sum of its parts.”
- Aristotle**

Patti Southard
King County GreenTools
LEED AP, SBA, IDP Professional
Honorary AIA, LFA accredited



Kathleen Petrie
City of Seattle
Department of Construction and Inspections
LEED AP



Regional Code Collaboration (RCC)

- Regional Approach to Sustainable Code Development
- Benefits:
 - Builds Capacity
 - Pro-active & Collaborative
 - Resource Sharing
 - Creates Transparency
 - Extends beyond the borders of King County



RCC Relationships

- **Regional Code Collaboration Partners**
 - **3 Counties** - King, Snohomish, Peirce
 - **14 Cities** - Bellevue, Edmonds, Kirkland, Issaquah, Mount Lake Terrace, Normandy Park, Redmond, Renton, Sammamish, Seattle, Shoreline, Snoqualmie, Tacoma, Tukwila
- **Countywide Green Building Task Force** (founded in 2007)
 - provides green building education countywide for residential and commercial construction
- Since 2015, the RCC has worked to align code priorities in support of K4C Joint County-City Climate Commitments and K4C work priorities
- The RCC is also an integral part of implementing local climate action strategies, for example as part of King County's Strategic Climate Action Plan

National Recognition



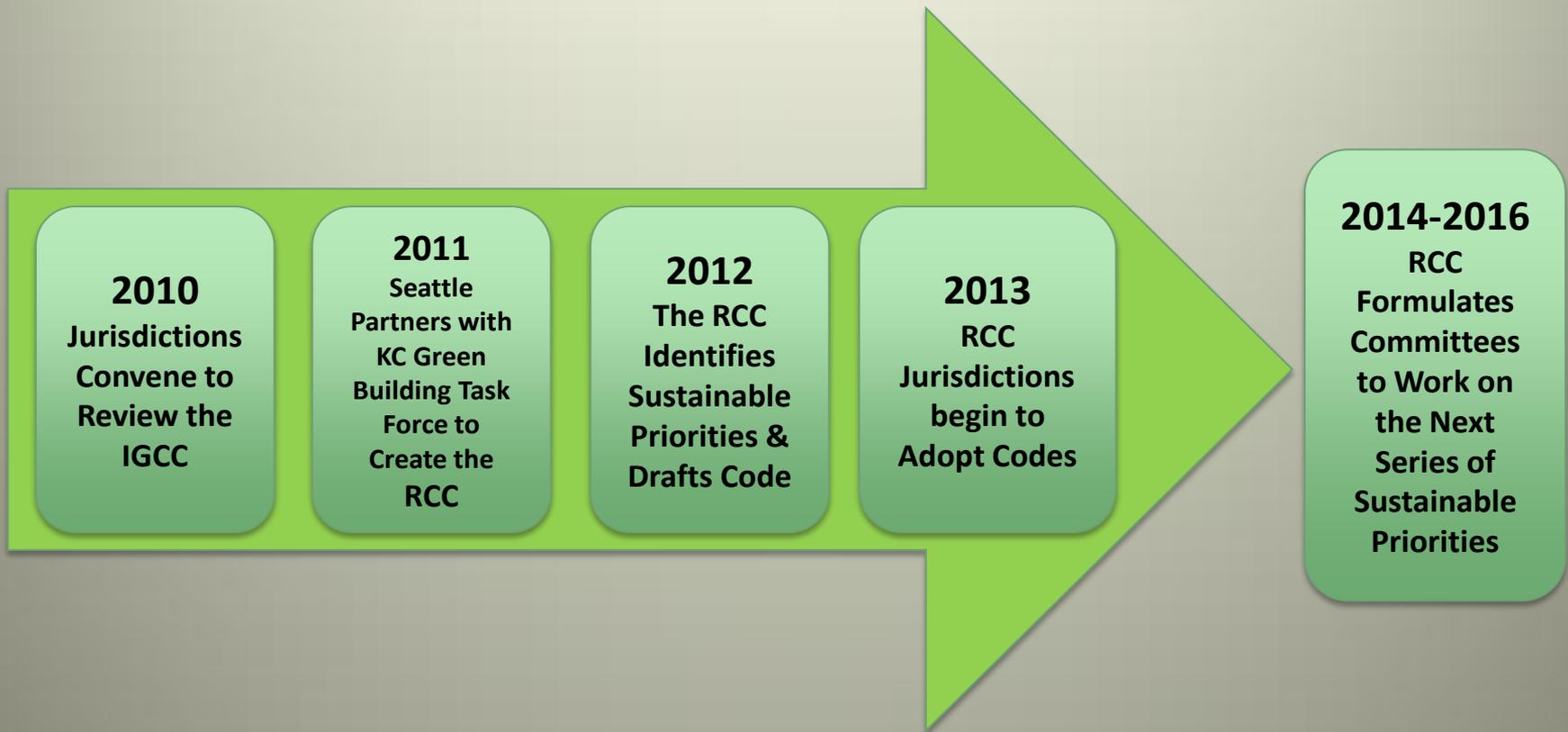
2011 ICC Committee Recognition for the collective work completed by the RCC

Harvard Kennedy School of Government
Bright Idea Award 2012



Regional Code Collaboration for Living Buildings and
“Geeky Issues”

The RCC Path and History



2013 RCC Code Development

Water Conservation

- Efficient Irrigation Design
- Automatic shut-off for sinks
- Reduced flow Plumbing Fixtures
- Zoning for Rain Catchment Systems

Sustainable Transportation

- Electric Vehicle Charging Stations
- Short and Long-term Bicycle Parking
- Showers and Changing Facilities



Energy Measures

- Zoning Allowance for Exterior Insulation
- Heat Island Mitigation
- Light Trespass reduction



Material Conservation

- Construction and Demolition Waste Diversion
- Protection of materials from moisture

2015-2016 RCC Work Program

- Recruit more cities and counties
- Align RCC work with K4C priorities:
 1. **Washington State Codes (Solar, Energy, “Aspirational” Energy)**
 2. **Construction & Demolition Waste**
 3. **Living Building Challenge Demonstration Ordinance**



K4C Mayor's Summit June 2014

Washington State Codes

Code Process

National Code Development

National codes are Updated Every 3 Years

Washington State

Amends and Adopts 6 National Codes That Local Jurisdictions Must Enforce:

- Building
- Residential
- Energy
- Plumbing
- Mechanical
- Fire

Local Jurisdiction

Jurisdictions May Further Amend:

- Building
- Plumbing
- Mechanical
- Fire
- Energy (Commercial)

Jurisdictions Cannot Amend:

- Residential Code
- Energy Code (Residential)

Local Codes Adopted

Solar Appendices

- Residential :
 - Solar-Ready Appendix U
- Building Code:
 - Solar-Ready Appendix N
- Energy Code:
 - Renewable Energy Appendix E

New solar appendices remove barriers to solar installations on commercial and residential buildings, in urban, suburban and rural environments.



2015 Energy Code Progress

- Residential
 - Ductless mini-split heat pumps
 - More “Additional Efficiency” credits
- Commercial
 - Solar ready roof
 - Reduced lighting power
 - Efficient HVAC controls
 - Two “Additional Efficiency” credits

The 2015 Washington State Energy Code will reduce energy usage associated by new buildings by roughly 30% compared to 2006 Washington Energy Code.



The next steps?

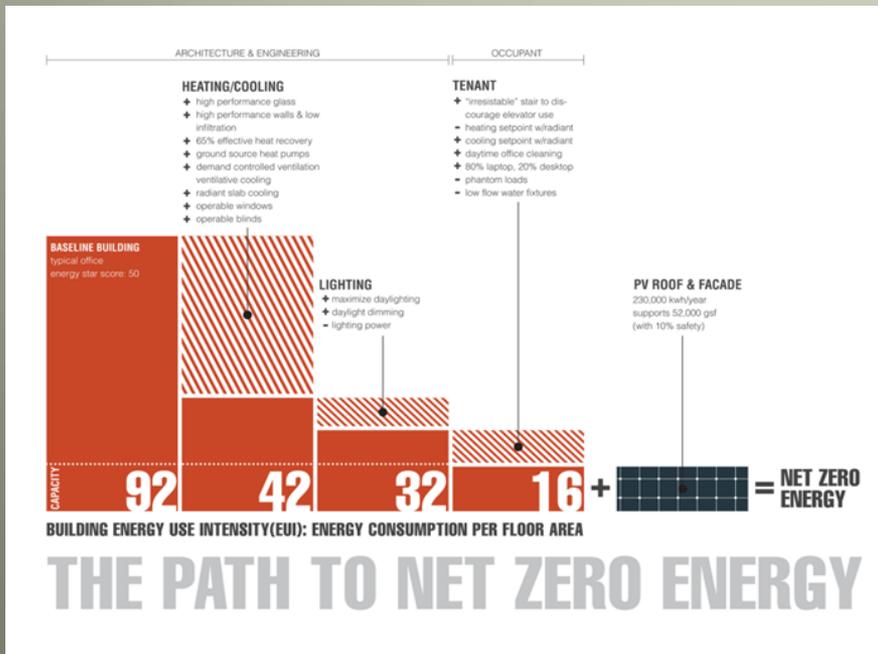
Additional energy & carbon reductions available:

- Lighting
- Water heating
- Space heating
- Cooling
- Air tightness
- Windows



WA State “Aspirational Energy Code”

- Voluntary standard requested by Legislature
 - But development not funded
- RCC could provide first draft proposal
- “Aspirational Code” changes; just a handful
- *Might* provide a legal pathway to residential energy code upgrades



Collaborating on an aspirational energy code would support progress towards the K4C’s pathway to achieve net-zero GHG emissions in new buildings by 2030.

Construction and Demolition Waste

- Countywide Ordinance- effective 2016
- Bans disposal of readily recyclable Materials
- C&D must be sent to designated facilities
- Supports recycling and greenhouse gas reduction goals
- King County has begun to actively enforcing the regulation via the KC Sheriff



Construction and Demolition Waste

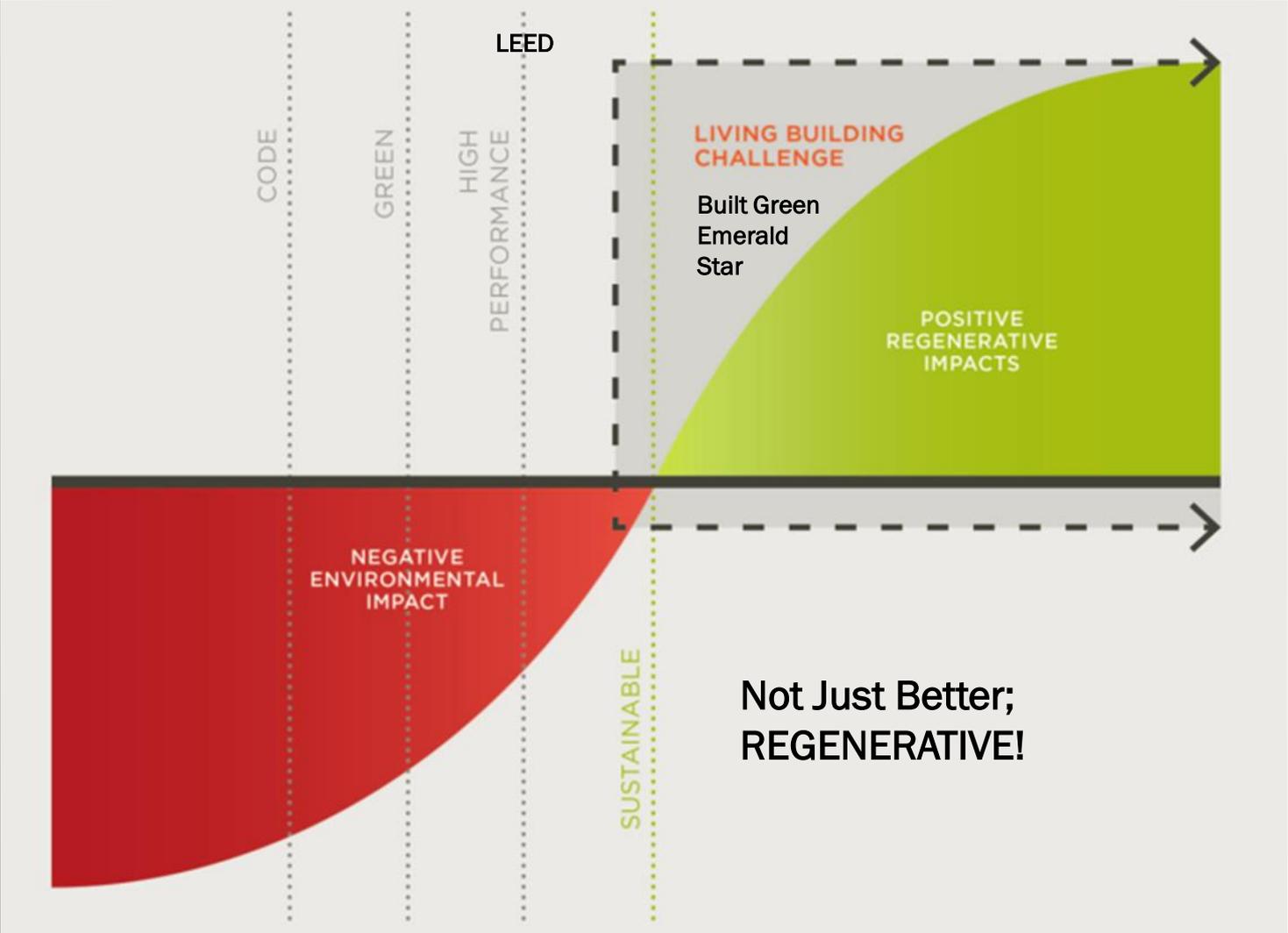
K4C partners are encouraged to consider amending city building codes to support C&D recycling.



Recommended code would:

- Amend city building code to require documentation that job sites are using King County designated facilities for C&D recycling – as part of building permits.
- May also include Salvage Assessment requirement for demolition projects
- Provides an important opportunity to engage permit customers about the Countywide ban and connect them with C&D recycling facilities and information.
- Seattle and Shoreline are early adopters

Living Building Challenge Demonstration Ordinance



Not Just Better;
REGENERATIVE!

Living Building Challenge Demonstration Ordinance

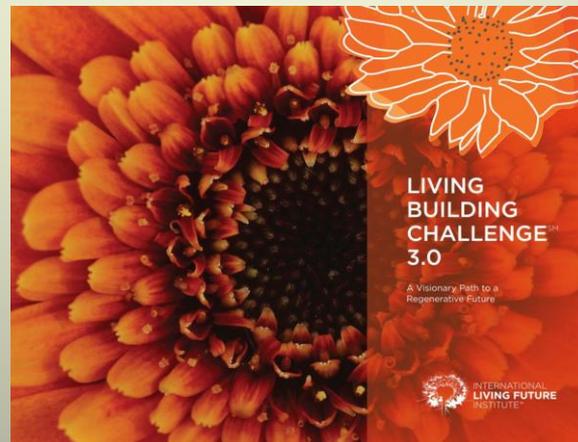
Three Options for Certification under the Living Building Challenge:



 <p>LIVING BUILDING CHALLENGE™</p> <p><u>FULL CERTIFICATION</u></p> <p>All Imperatives are mandatory</p> <p>Certification is based on actual performance</p>	 <p>PETAL CERTIFICATION</p> <p>Three Petals or more</p> <p>One of which must be either Water, Energy or the Materials Petal &</p> <p>01: Limits to Growth</p> <p>20: Inspiration + Education</p>	 <p>NET ZERO ENERGY BUILDING CERTIFICATION™</p> <p><u>NET ZERO ENERGY BUILDING CERTIFICATION</u></p> <p>Four Imperatives</p> <p>01: Limits to Growth</p> <p>07: Net Positive Energy (100% only)</p> <p>19: Beauty + Spirit</p> <p>20: Inspiration + Education</p>
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Why is Shoreline Considering a Living Building Challenge Demonstration Ordinance?

- Council adopted Climate Action Plan in 2013, committing to 80% reduction in GHG emissions by 2050 (50% by 2030)
- LBC is the only Carbon Neutral Certification in the World
- Send a signal to the market that the City of Shoreline is ready!



Living Building Challenge Demonstration Ordinance

What Will It Take to Meet Shoreline's Targets?

Carbon Wedge Analysis estimated the GHG reductions associated with strategies in two areas, consistent with national best practices and existing City priorities

Category	Proposed Sector Targets for Shoreline to Achieve 50x30
Transportation	<ul style="list-style-type: none">▪ 35% community-wide vehicle miles traveled (VMT) reduction by 2030, relative to 2012▪ 25% reduction in vehicle carbon fuel intensity by 2030 (due to proposed 10% statewide clean fuel standard and 15% additional local reduction)
Building energy efficiency	<ul style="list-style-type: none">▪ Net zero greenhouse gas emissions in 100% of new buildings community-wide by 2030 (due to new buildings in 2030 being 70% more efficient than new buildings in 2006, per state law)▪ 40% reduction in natural gas consumption for heating in existing buildings community-wide by 2030, relative to 2012

Components of Draft LBCO

- Application requirements
- Qualification process
- Minimum standards
- Incentives
- Criteria for departures
- Scope of departures
- Compliance with minimum standards
- Penalties for non-compliance
- Potential additional components



Shoreline Legislative Steps

- Commission makes recommendations for draft LBCO and Development Code incentives
- May and June: RCC workgroup creates model language
- May-June: Shoreline staff brings back draft LBCDO and implementing regulations,
- Planning Commission Recommendations
- Summer 2016 Council vote and adoption
- Develop Code Incentive Package
- Share success with other K4C partners pursuing LBC policies

Education: Green Inspector Training

October 26th 2016 – Smart Building Center

- Provides an overview of technologies in green building
- Trends for Built Green Emerald Star and LBC projects
- Green Remodeling
- Water reuse and water conservation, rainwater harvesting, black water recycling
- Toxic materials
- Featured Instructors:
Martha Rose and David Johnston



Building Tour coming in January 2017

Summary of RCC Recommendations

- **#1:** K4C partners are encouraged to participate in the RCC and adopt existing model policies that have been developed on water conservation, sustainable transportation, energy, and material conservation.
- **#2:** K4C partners are encouraged to implement newly adopted state codes and also participate in development of the next generation Washington State “Aspirational” Energy Codes.
- **#3:** K4C partners are encouraged to consider ordinances that that would help increase diversion of materials and increase reuse of materials.
- **#4:** K4C partners are encouraged to consider LBC demonstration ordinances that remove barriers to high performance buildings and invite progressive developers to build with carbon neutral certification.

Discussion and Feedback

K4C Building Energy Benchmarking Policy and Program Recommendations

King County-Cities Climate Collaboration

Thursday, April 7, 2016



Climate Solutions.
PRACTICAL SOLUTIONS TO GLOBAL WARMING



KING COUNTY-Cities
CLIMATE COLLABORATION

Joint County-City Climate Commitments

K4C's Green Building and Energy Efficiency Commitments

Pathway	<ul style="list-style-type: none">Reduce energy use in all existing buildings 25% below 2012 levels by 2030; achieve net-zero GHG emissions in new buildings by 2030.
Catalytic Policy Commitment	<ul style="list-style-type: none">Join the Regional Code Collaboration and work to adopt code pathways that build on the Washington State Energy Code, leading the way to “net-zero carbon” buildings through innovation in local codes, ordinances, and related partnerships.
Catalytic Project or Program	<ul style="list-style-type: none">Develop a multi-city partnership to help build a regional energy efficiency retrofit economy, including tactics such as: collaborating with energy efficiency and green building businesses, partnering with utilities, expanding on existing retrofit programs, adopting local building energy benchmarking and disclosure ordinances, and encouraging voluntary reporting and collaborative initiatives such as the 2030 District framework.

Building Energy Benchmarking Definition

“Process of tracking energy consumed, over time, of an existing building and comparing the results to similar buildings or a [relevant] standard”



- Institute for Market Transformation





Energy Use Intensity (EUI) is your building's annual energy use (all fuel types) divided by square feet (sf) in kBtu/sf.

OFFICE BUILDING ENERGY PERFORMANCE PROFILE

000 SEATTLE AVE SEATTLE, WA 98124 | Benchmarking ID: 12945 | EPA Building ID: 0000000 | Square Feet: 95,000

Thank you for benchmarking your mid-size office building's energy use with the City of Seattle! This energy performance profile shows how your building is doing year to year and how it compares to similar buildings in Seattle. Our goal is to help you identify opportunities to reduce operating costs, attract tenants and increase your building's energy performance.

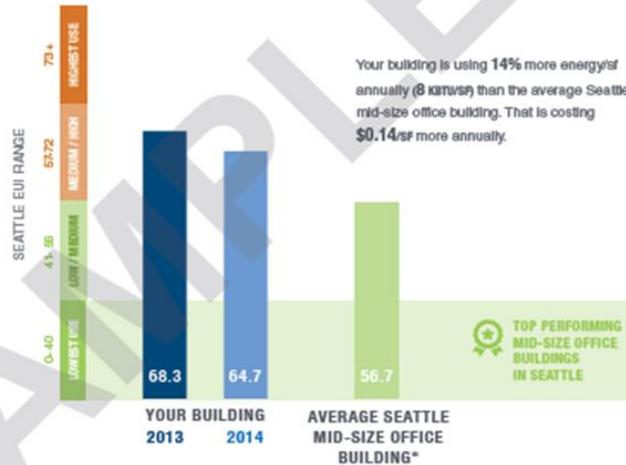
YOU CURRENTLY SPEND

\$1.11 / SF

ANNUALLY ON ENERGY*
or \$105,800 per year.

Your building's EUI decreased by 3.6 KBTU/SF from 2013 to 2014.

* The information in this report is self-reported and subject to verification. Costs and potential savings are estimated at \$0.017 per kBtu using the average mix of fuel sources (electric, gas, steam) for mid-size office buildings. Average EUI is based on Seattle median EUI.



Your building is using 14% more energy/sf annually (8 KBTU/SF) than the average Seattle mid-size office building. That is costing \$0.14/sf more annually.

HOW YOUR BUILDING STACKS UP

THERE ARE **321**

SIMILAR MID-SIZE OFFICE BUILDINGS IN SEATTLE

TYPE: Mid-size Office Building
SQUARE FEET: 20-100k

OF THESE, **180**

USE LESS ENERGY THAN YOUR BUILDING

Reduce your building's EUI by 12.4% to get to the average.

SAVE UP TO **\$13,100**

EACH YEAR BY REDUCING YOUR BUILDING'S EUI TO THE SEATTLE AVERAGE

GET STARTED



Report prepared: 11/02/15

www.seattle.gov/energybenchmarking

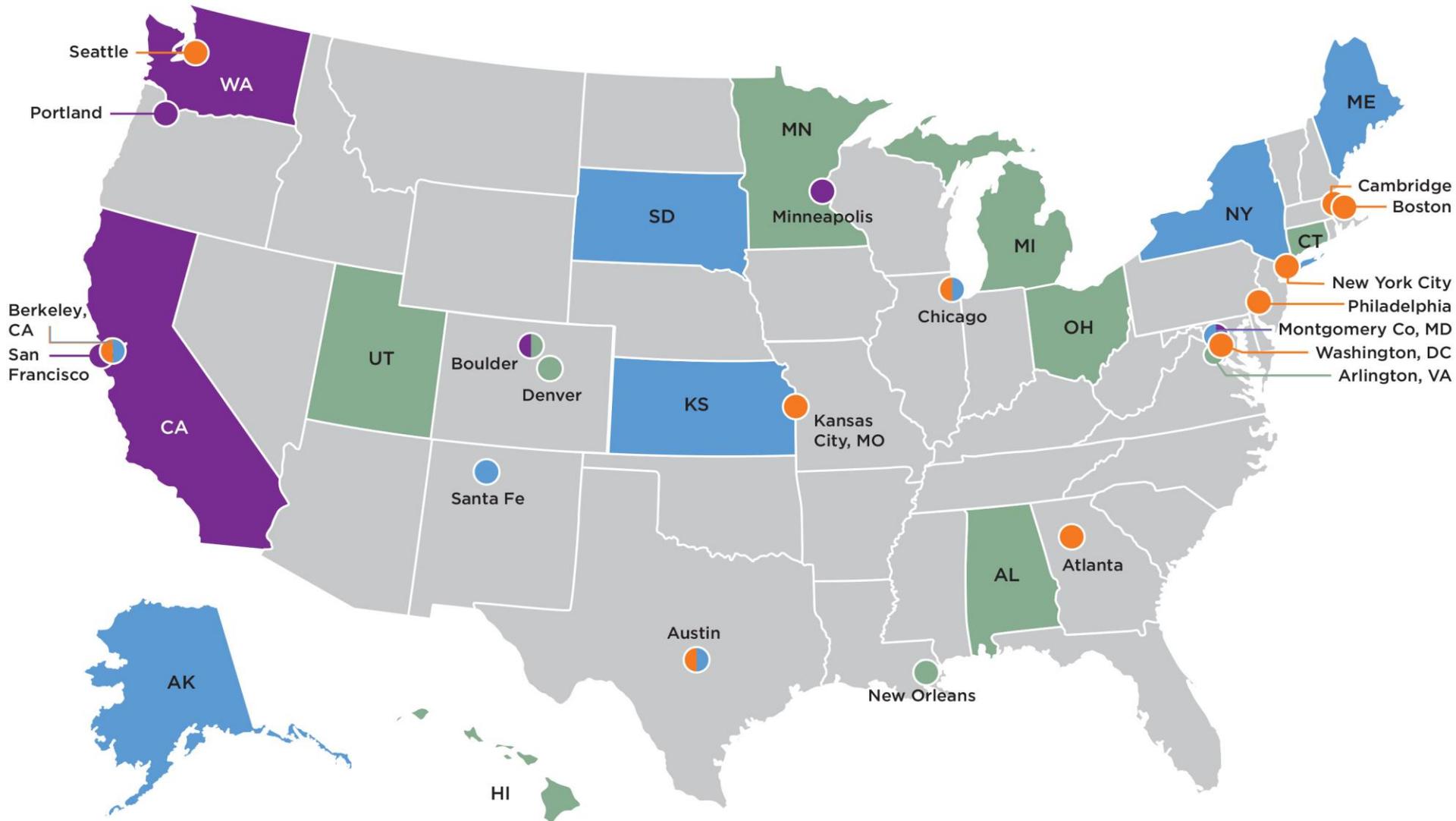
Questions?
energybenchmarking@seattle.gov
206.727.8484

0000-12945-0000

Sample report
courtesy of
City of Seattle



U.S. Building Benchmarking and Transparency Policies



- Commercial policy adopted
- Commercial & multifamily policy adopted
- Public buildings benchmarked
- Single-family transparency adopted

Best Practices & Peer Experiences



Benchmarking Benefits to Owners & Managers

- Baseline understanding of building energy use
- Energy performance compared to competitors
- Prioritization of energy efficiency investments
- Connection to utility and public efficiency resources
- Continuous performance improvement
- Evidence of building's additional value





Economic & Public Interest Case for Benchmarking

- Energy savings & greenhouse gas reductions
- Increased demand for energy efficiency services
- Higher valuation of energy efficient buildings
- Increased transparency & consumer awareness
- Participation in utility incentive programs
- Data for efficiency analyses



Benchmarking Yields Energy Savings

- New York City 2010 – 2013:
 - US DOE analysis—5.7% energy savings
- San Francisco 2009-2013:
 - Public buildings—7.4% savings
 - Private buildings—7.9% savings
- US EPA Evaluation of Voluntary Benchmarking
 - 35,000 participants 2008 - 2011
 - Annual 2.4% savings; cumulative 7% savings



Recommended Ordinance

- Public building benchmarking & disclosure for all city and county buildings and campuses that are:
 - 20,000+ square feet (sf)
 - An office or public safety building with 5,000+ sf
 - A wastewater treatment plant
 - Leased buildings with 20,000+ sf where jurisdiction is the sole occupant and controls the building utility accounts
- Commercial building benchmarking & disclosure:
 - Creation of a voluntary annual benchmarking program for commercial buildings with 20,000+ sf
 - Lay the foundation for a future mandatory policy



Draft Objectives for K4C Benchmarking Partnership

- Drive energy efficiency at large scale
- Collaborate to share fixed costs
- Opt-in, not one-size-fits-all
- Value for owners, managers, tenants, & utilities
- Link to existing incentives & resources
- Jurisdictions lead—public buildings first



Smart Buildings Center Benchmark Support

- Operated City of Seattle benchmark Help Desk for 3+ years
- Supported highest compliance rate in U.S. (>99%)
- High quality, actionable information
- WA State Department of Commerce grant allows SBC to support first cohort of K4C jurisdictions

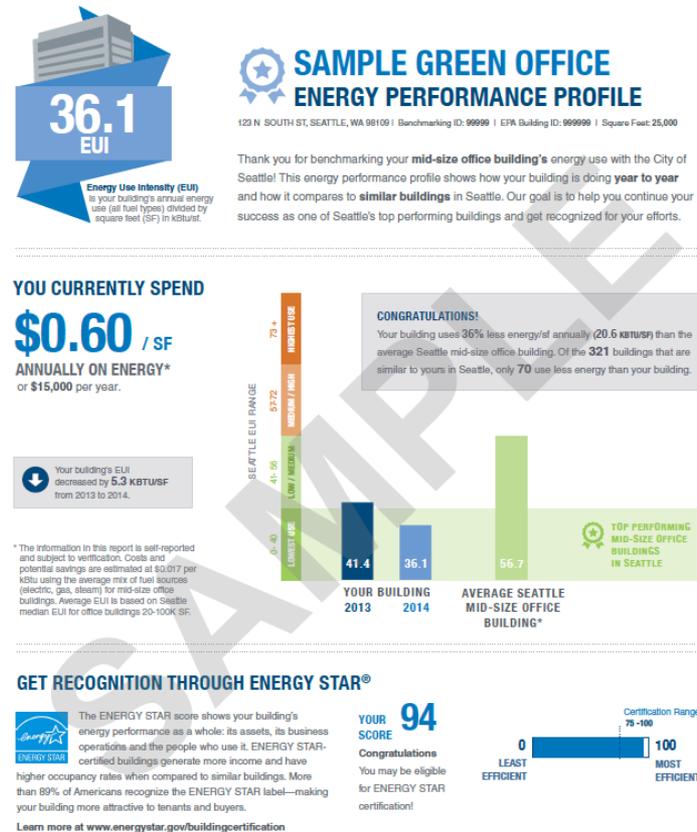
“The help desk was more than just a technical support line: It was a lifeline for building owners and managers, and played a major role in boosting compliance rates, data accuracy and creating goodwill among owners and managers required to comply with the law.”



*Seattle Building Energy Benchmark Ordinance: 2013
Technical Support Evaluation, Resource Media*

Benchmark support for K4C adopters

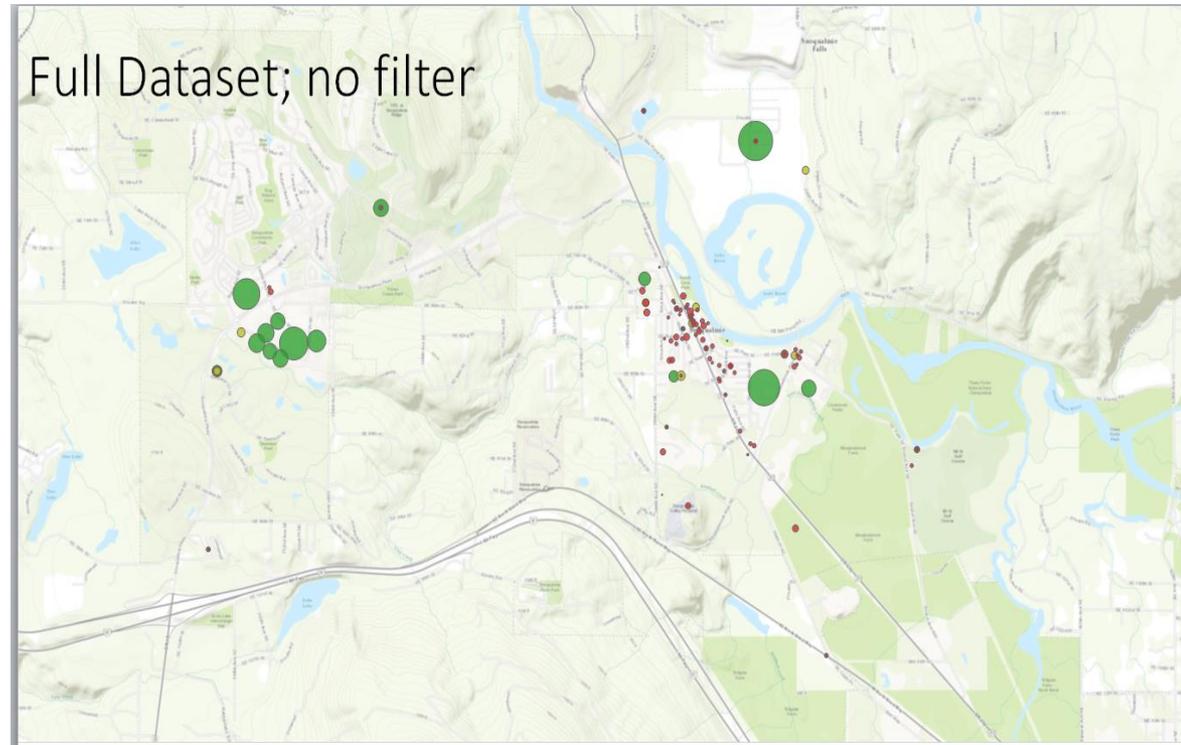
- Develop accessible database of buildings (city owned and/or private) using tax assessor and CoStar data
- Help desk support with FAQs, how-to guides, webinars, and telephone assistance
- Data analysis of building energy performance data



Report example courtesy of the City of Seattle

SBC Benchmark Support

- Reduces jurisdiction staffing burden to stand up program
- SBC support available for 18 months
- Available to first cohort of 4 to 6 Puget Sound jurisdictions who adopt
- Out year staffing requirements less than start up phase



City of Snoqualmie – all non residential buildings.

- > 20,000 sf
- < 20,000 > 10,000 sf
- < 10,000 sf

K4C Building Energy Benchmarking Policy and Program Recommendations

Discussion and Feedback



Climate Solutions.
PRACTICAL SOLUTIONS TO GLOBAL WARMING



KING COUNTY-Cities
CLIMATE COLLABORATION

Thank you

Elizabeth Willmott, Climate Solutions
elizabeth@climatesolutions.org

Stan Price, Smart Buildings Center
stan@putnamprice.com



K4C Green Building and Energy Efficiency Summit - AGENDA



Recap of Summit Discussion and Recommendations (10 min)

- Megan Smith, King County

**EXTRA/BACKUP SLIDES
AFTER THIS SLIDE**

Appendix– Individual Building Benchmarking Steps

1. Conduct initial building stock profile/analysis
2. Create a target building list
3. Sign up for automatic data upload
4. Analyze data/submit report
5. Reduce energy use through operational improvements and efficiency projects
6. Update data
7. Repeat



Appendix–Implementation Topics

- Mechanics of a benchmarking program
 - Create a community building stock inventory
 - Establish partnership with utilities
 - Outreach to building owners, managers, tenants to understand how to add value / what inspires action
 - Develop plan for technical assistance/capacity
 - Partner with county assessor on data quality/collection & verification processes



Appendix - Policy Impact: Mandatory vs. Voluntary

Mandatory policies impact **4-16x** the floor area compared to voluntary:

	Type	Program/Policy	Buildings included	Floor area (million sq ft)
Boston	Voluntary	Challenge for Sustainability (2009-2013)	97	27
	Mandatory	Building Energy Reporting and Disclosure Ordinance (2013)	1,600	250
Minneapolis	Voluntary	BOMA of Greater Minneapolis Kilowatt Crackdown (2012)	80	25
	Mandatory	Commercial Building Rating and Disclosure Ordinance (2013)	625	110
Seattle	Voluntary	Seattle Kilowatt Crackdown (2009)	53	18
	Mandatory	Council Bill 116731 (2010)	3,250	281
Portland	Voluntary	Portland Kilowatt Crackdown (2013-2014)	48	11
	Mandatory	Energy Performance Reporting Policy (2015)	1,024	87

Appendix - Policy Impact: Mandatory vs. Voluntary (cont.)

	Nature	Floor Area Covered	Technical Assistance/Related Program Elements	Energy Use Reduction
Denver Better Buildings Challenge	Voluntary	7 million sf (115 buildings)	Recognition program for buildings over 10,000 sf Lease for Efficiency Challenge	20% from 2011 to 2020 (goal) 9% from 2011 to 2014 (actual- portfolio)
Urban Smart Bellevue	Voluntary	Goal: 2.8 million sf (10% of Seattle's floor area; 200 building meters)	Near real-time data (15-minute interval) or monthly energy feed Community-based social marketing & resource conservation support through PSE & private contractor	5% energy use reduction (goal; measurement & verification by 2018)
New York City	Mandatory	2.8 billion sf (23,417 buildings)	Multi-tiered outreach and technical assistance Energy audits, retrocommissioning, & lighting upgrades required	5.7% from 2010 to 2013 (actual– per USDOE evaluation)
Washington, DC	Mandatory	357 million sf (2,000 buildings)	DC Sustainable Energy provides incentives & technical assistance	9% over 3 years (actual)
San Francisco	Mandatory	203 million sf (2,312 buildings)	Utility-sponsored help desk & webinars	7.9% over 4 years (actual)
Seattle	Mandatory	281 million sf (3,250 buildings)	NEEC help desk Performance profiles & dashboard	0.6% from 2012 to 2013 (actual)