

Welcome!
We'll be starting shortly.

Poll: Who's in the Zoom today?

100% Clean Buildings

Performance Standards for Existing Large
Nonresidential and Multifamily Buildings

Online Open House | June 16, 2022



Seattle
Office of Sustainability
& Environment

Why We're Here

- Share why we need building performance standards and how they can work.
- Present a draft policy framework for building performance standards and solicit feedback.
- Invite ideas to help shape the City's policy to reduce climate-polluting emissions and create healthy, efficient buildings.

Agenda

- Welcome and Introductions
- Opening Remarks
- Why We Need Emissions-based Building Performance Standards (BPS)
- Part 1: Draft Policy Framework - Overview*
- Support Programs
- Part 2: Draft Policy Framework - Targets
- Part 3: Draft Policy Framework - Compliance Timing*
- Part 4: Draft Policy Framework - Alternatives, Exemptions and Enforcement*

*Q&A throughout

Reminder: The April 5 online open house materials are available at seattle.gov/building-performance-standards:

- Watch the recording
- See the slide deck
- Review the FAQ

Zoom Webinar Instructions

- **Chat:** Use for technical issues only. Hosts and panelists will see and respond.
- **Q&A:** Use Q&A as you have comments or clarifying questions throughout the presentation. We will save 100% of questions, though may not have time to address them all live.
- **Recording and FAQ:** Will be posted to the OSE Building Performance Standards webpage.
- **Closed captioning:** On the toolbar, click "Live Transcript" to select "Show Subtitle."

Opening Remarks



Jessyn Farrell
Office of Sustainability & Environment
Interim Director

“To reduce climate pollution, Harrell calls for...

...Developing truly 100% Clean Buildings”

<https://www.bruceforseattle.com/bruce-harrell-announces-emerald-city-plan-to-take-on-climate-crisis-ensure-climate-resilience/>



One Seattle Working to Achieve Climate Justice

We have many of the right tools in place, but we need to rapidly scale up and deploy them.



Build a Diverse Green Economy & Invest in Overburdened Communities



Reduce Greenhouse Gas Emissions (GHG) & Support a Just Transition Toward Clean Energy



Adapt to Climate Change Impacts & Build Resilient, Healthy Communities

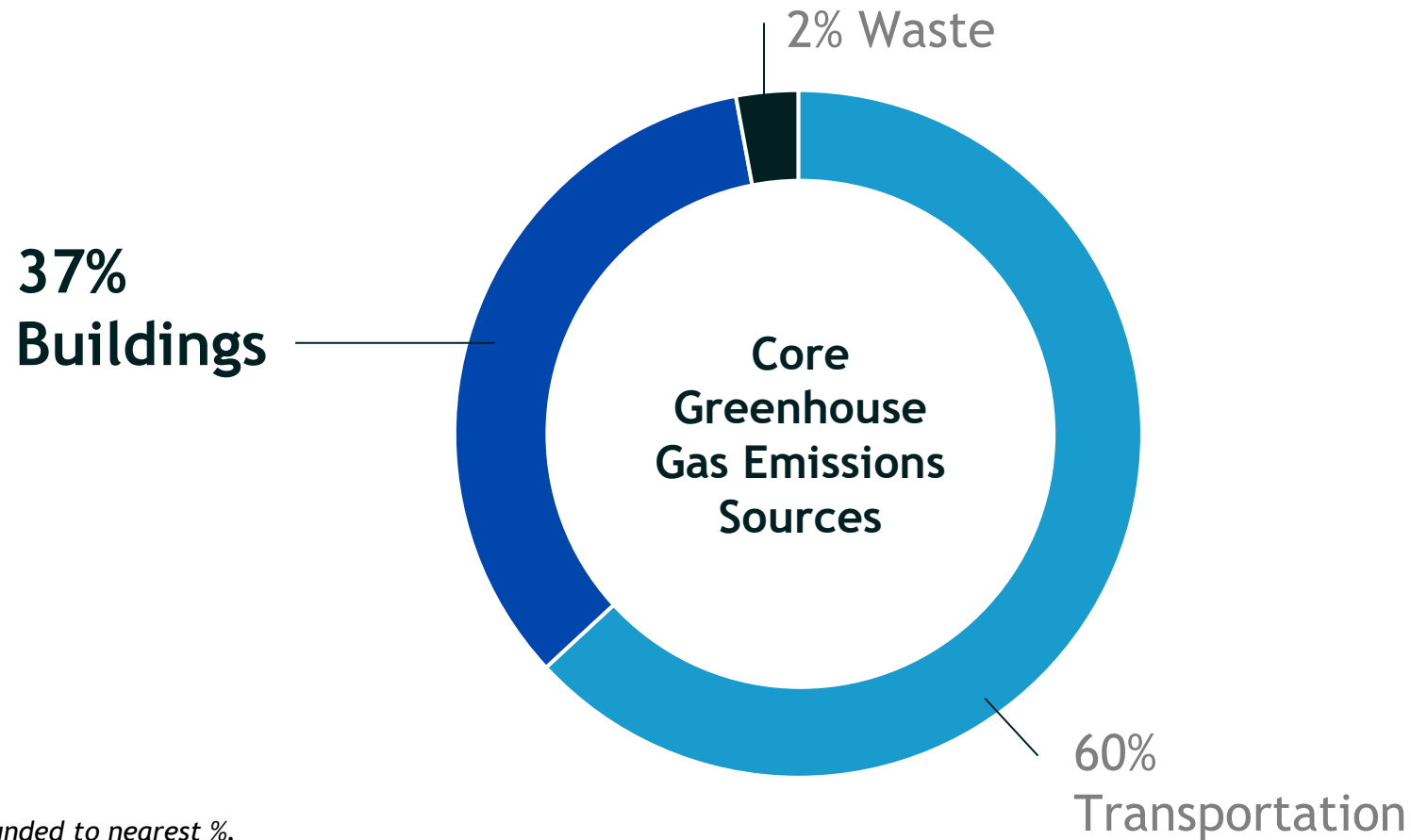
Green New Deal

- Urgently reduce emissions and help communities build climate resilience.
- Ensure that the benefits and investments alleviate burdens for communities already most impacted by economic, racial, and environmental injustices.
- Create good, stable jobs and grow a diverse workforce to support an equitable clean energy transition.
- And support people, especially Black, Indigenous, and people of color (BIPOC) communities, to meet city policies.



Why We Need Emissions-Based Building Performance Standards

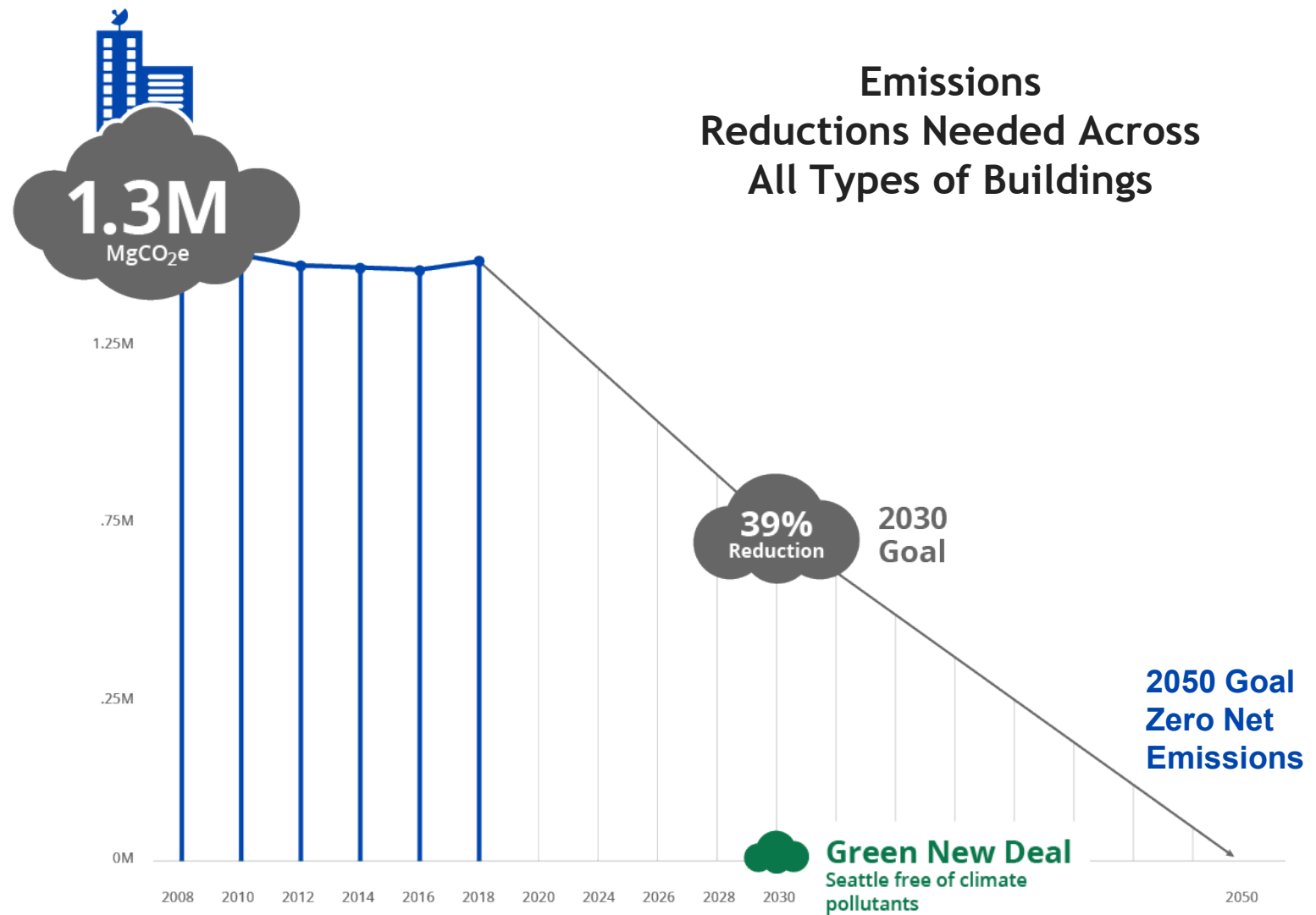
Buildings are one of the largest and fastest growing sources of Seattle's climate pollution.



Note: Sources are rounded to nearest %.

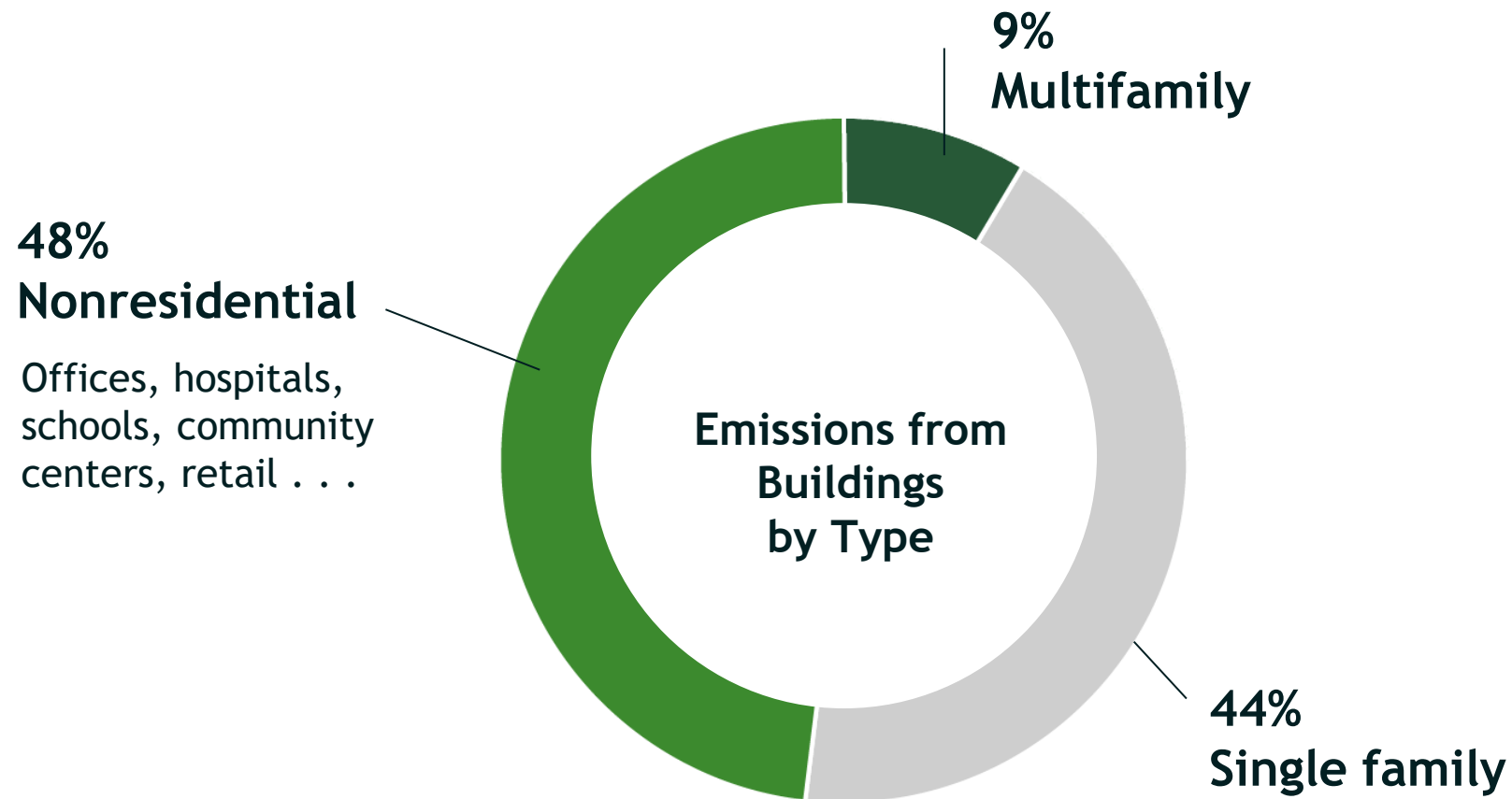
Source: 2018 Seattle Greenhouse Gas Emissions Inventory

Bold action is needed to significantly reduce climate emissions from all types of buildings.



Source: City of Seattle. 2018 Community Greenhouse Gas Emissions Inventory.
https://www.seattle.gov/Documents/Departments/OSE/ClimateDocs/2018_GHG_Inventory_Dec2020.pdf

Emissions come from all building types.

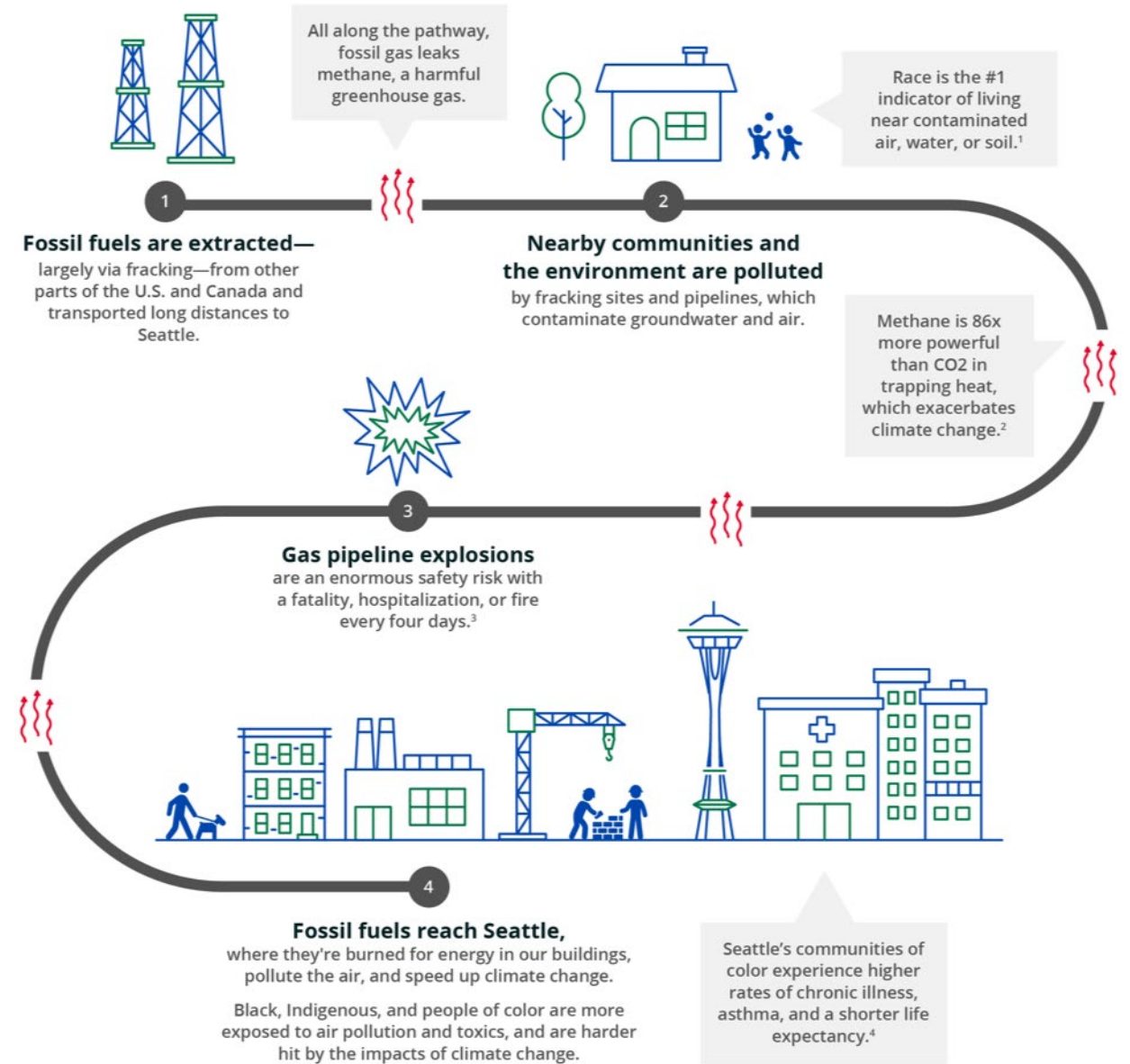


Note: Sources are rounded to nearest %.
(All building sizes based on space uses)

Source: 2017 Building Energy Use Intensity Targets Report

Fossil fuels cause harm throughout their entire lifespan, from extraction through use.

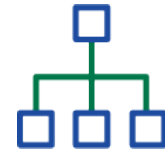
Communities of color are most impacted.



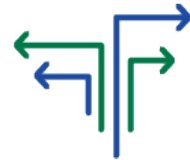
Seattle emissions-based building performance standards are the single most impactful building policy to reduce climate pollution from buildings.



Set GHG emissions reduction targets that buildings must meet over time.



Provide a framework for owners to improve energy efficiency and transition to cleaner energy sources.

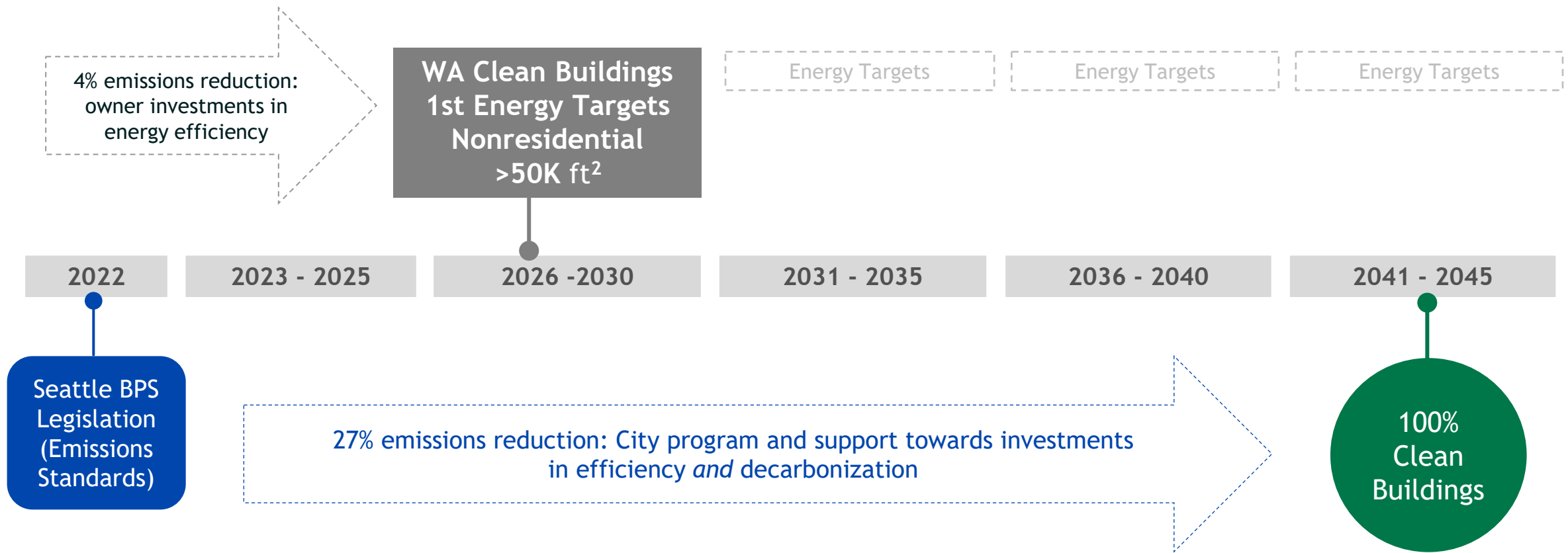


Offer flexibility to choose the technologies and operational strategies that work best for owners.



Identify long-term expectations so owners can plan for upgrades.

We need to act now to help building owners make the right decisions.

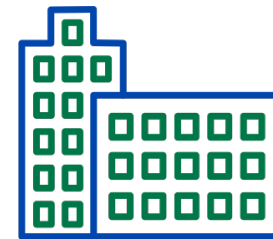


Seattle emissions-based performance standards will complement and build on the State of Washington requirements for energy efficiency.

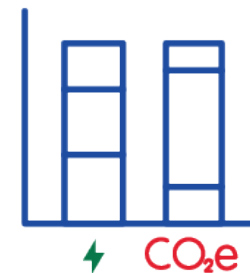
Washington Clean Buildings Energy Standards



Tier 1: Large Nonresidential buildings > 50K ft²



Tier 2: Adds Nonresidential buildings 20-50K & Multifamily >50K ft² (targets after 2030)



Focuses on O + M and energy performance targets, rather than emissions targets

Emissions-based building performance standards and energy efficiency have many benefits.



Greater efficiency can mean cost savings for owners and tenants



Improved comfort



New well-paying jobs in clean energy and energy efficiency



Safer communities – reduced risk of gas leakage, accidents, and contamination

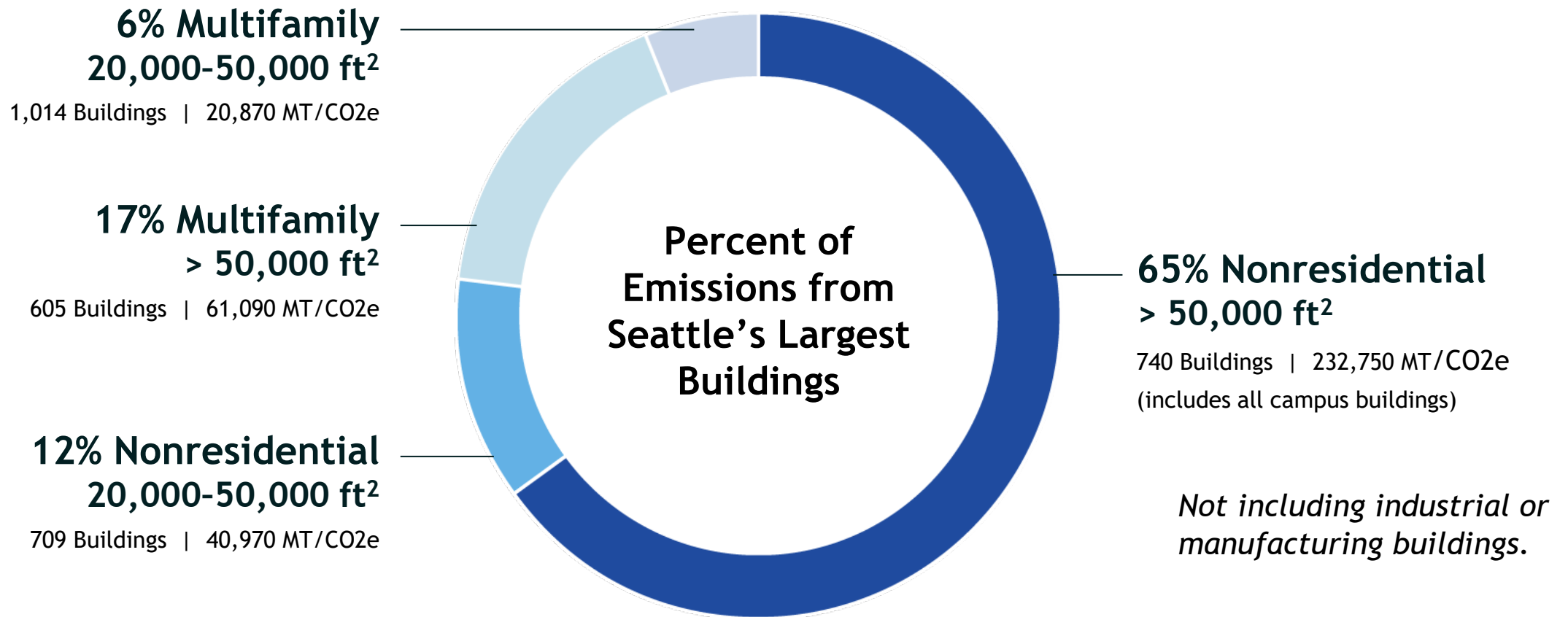


Cleaner air indoors and outdoors

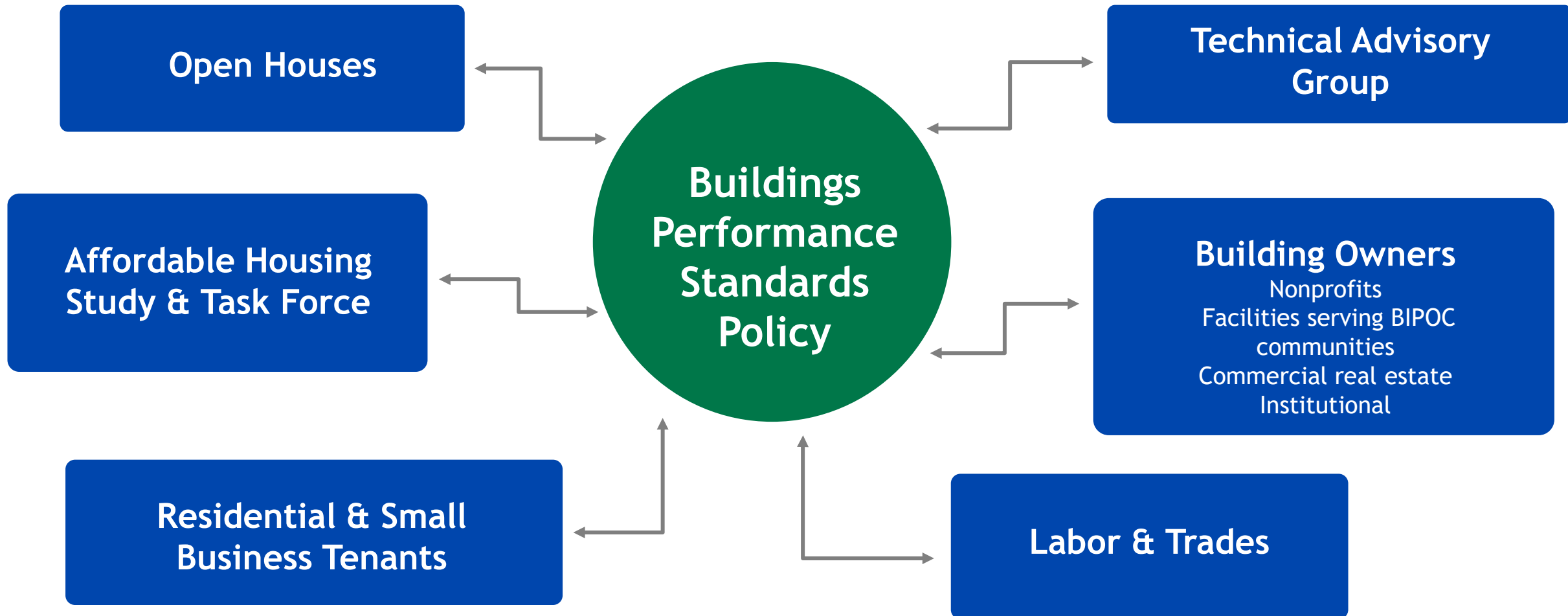


Lower GHG emissions

Performance standards focus on existing nonresidential and multifamily buildings 20,000 ft² and larger.



Many voices are helping shape this policy.



What we've heard



Timing - Communicate targets now to provide long lead times for owners to plan and for the labor workforce to grow, diversify, and transition.



Support - Provide financial incentives, lower interest financing, and robust technical help for all types of buildings and owners, especially for those under resourced.



Flexibility - Create a streamlined policy that allows for flexible options for compliance.



Workforce Development - Support a just transition by investing in pre-apprenticeships and outreach to youth and BIPOC, workforce re-skilling, and partner with labor to develop refrigerant management best practices.

Policy timeline



- **Today:** Online Open House to review draft policy framework
- **June - mid-August:** Comments to cleanbuildings@seattle.gov
- **September:** Draft legislation to Mayor's Office
- **Dec - Jan:** City Council review (opportunity for public comment*)
- **2023:** Rulemaking (opportunity for public comment)

**Timing TBD*

An aerial photograph of Seattle, Washington, showing a dense urban landscape with numerous buildings, streets, and a prominent multi-level highway interchange. The entire image is overlaid with a semi-transparent blue filter. Centered on the image is white text that reads:

**Part 1:
Seattle BPS
Draft Policy Framework
Overview**

Draft Policy Framework: Building Emissions Performance Standard

Emissions-focused performance metric (GHGI: kgCO₂e/ft²/year)

- Greenhouse Gas Intensity (GHGI) reduction requirement. Flexibility to reduce through variety of actions—energy efficiency, using renewable fuels, or fuel-switching.
- No energy use intensity (EUI) reduction requirement. (Don't duplicate WA Clean Buildings). Re-evaluate if needed.
- Fuel Emissions Factors (TBD in Rule)
 - WA Clean Energy Transformation Act (CETA) requires 100% clean electricity by 2045.
 - WA Climate Commitment Act will have an impact on factors for gas and steam.
- Normalization Factors (TBD in Rule)
 - For example: Weather, Building Occupancy, Multifamily Density.
- Exclusions (TBD in Rule)
 - For example: For specific uses such as backup generation, process loads in healthcare/labs.

What is Greenhouse Gas Intensity (GHGI)?



Gas



Electric

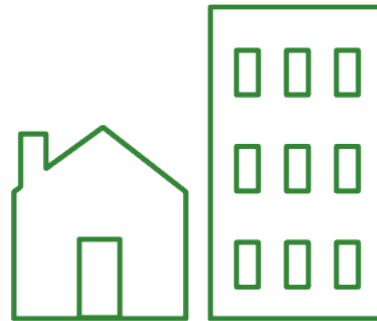


Steam



District

Total annual emissions
(emissions factors by fuel
type)



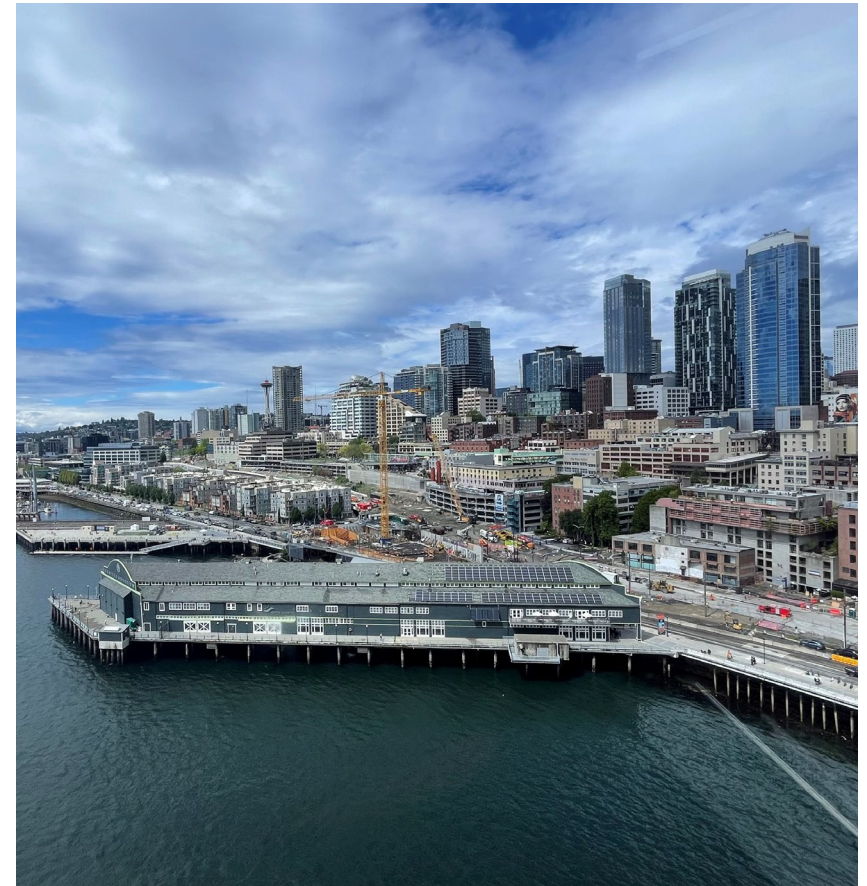
Total square feet
(ft²)



Greenhouse Gas Intensity
(GHGI)
(kgCO₂e/ft²/yr)

Draft Policy Framework: Requirements

- **5-year cycles** aligned with State of WA Clean Buildings Performance Standard timelines.
- **Benchmarking Verification:** Done by someone who meets certification(s) (similar Building Tune-Ups Specialist approach).
- **Planning:** Simple documentation of current performance & equipment, actions to achieve targets.
- **Emissions Targets:** Phased in by building size and type.



Draft Policy Framework: Seattle BPS Building Size Cohorts

Nonresidential

(State of WA Tier 1 / Tier 2*)

- >220,000 ft²
- >90,000 - 220,000 ft²
- >50,000 - 90,000 ft²
- >30,000 - 50,000 ft²
- >20,000 - 30,000 ft²

Multifamily

(State of WA Tier 2*)

- >220,000 ft²
- >90,000 - 220,000 ft²
- >50,000 - 90,000 ft²
- >30,000 - 50,000 ft²
- >20,000 - 30,000 ft²

* SB 5722 indicates Tier 2 as nonresidential 20-50K ft² and multifamily, but exact cohorts TBD by State of WA.

Draft Policy Framework: Who is Responsible for Complying

- Owners (or owner's associations) of existing nonresidential and multifamily buildings that are greater than 20,000 ft² in area, not including parking.
 - Note - Legislation will identify access requirements for tenants.
Owner may also define tenant responsibilities in lease structure.
- Does not apply to buildings used primarily for industrial manufacturing purposes.

Reducing Policy & Reporting Burden: Building Tune-Ups Policy Would Sunset



Size Cohorts	2 nd Cycle Deadlines
200K ft ² +	Oct 1, 2023
100K-199K ft ²	Oct 1, 2024
70K-99K ft ²	Oct 1, 2025
50K-69K ft ²	Oct 1, 2026

- Recognize the State of WA Clean Buildings Standard role in operations and maintenance and need to streamline to reduce reporting burden.
- Building Tune-Ups would sunset after second compliance cycle finishes.
- Requirements in 2023-2026 for nonresidential 50,000 ft² and greater still in place.
- www.seattle.gov/buildingtuneups

Poll:

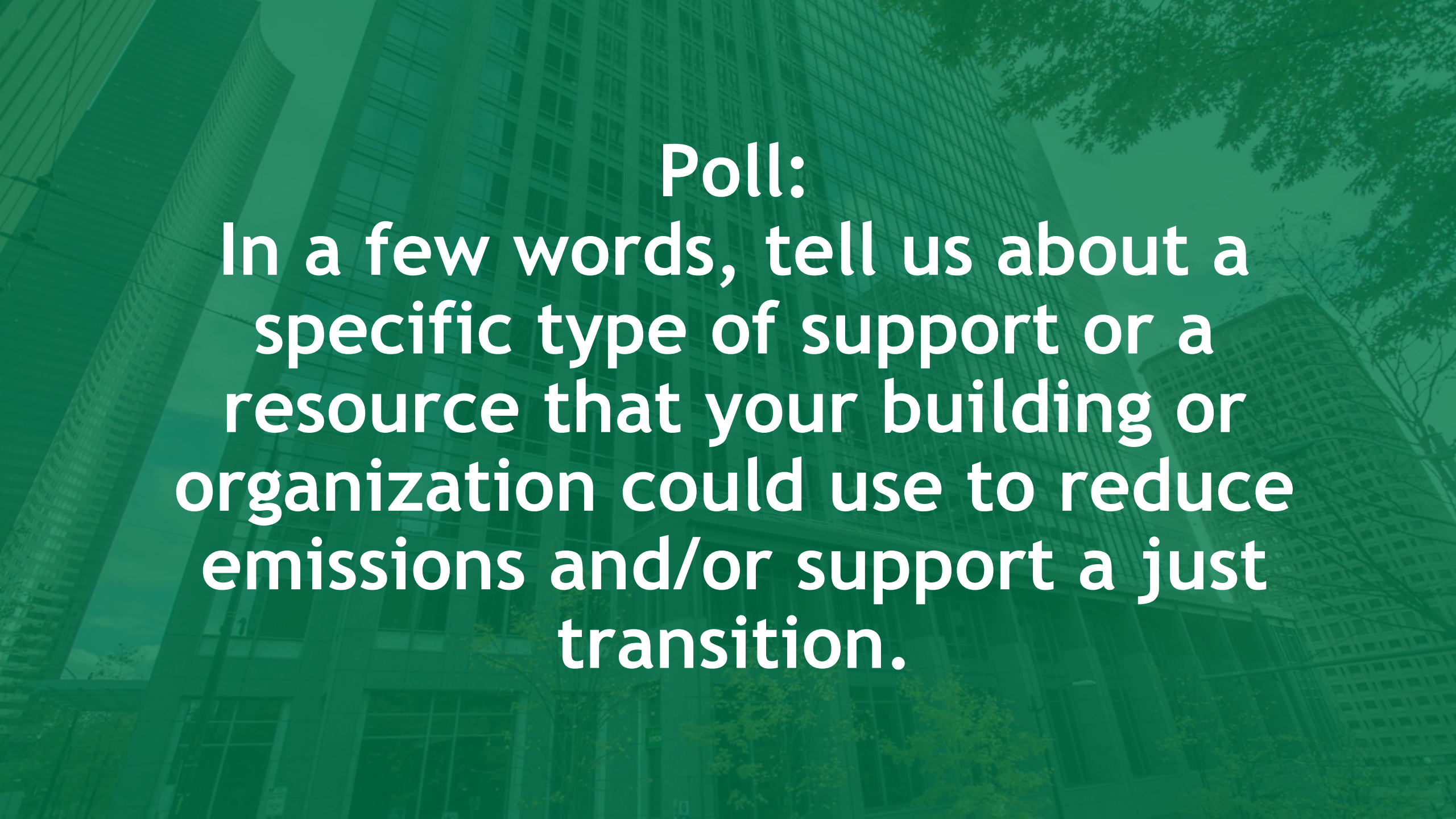
If you own, staff, or manage nonresidential building(s) >50,000 ft², which best describes your plans to meet the State of WA Clean Buildings requirements?



Q&A:
**What clarifying questions
do you have?**

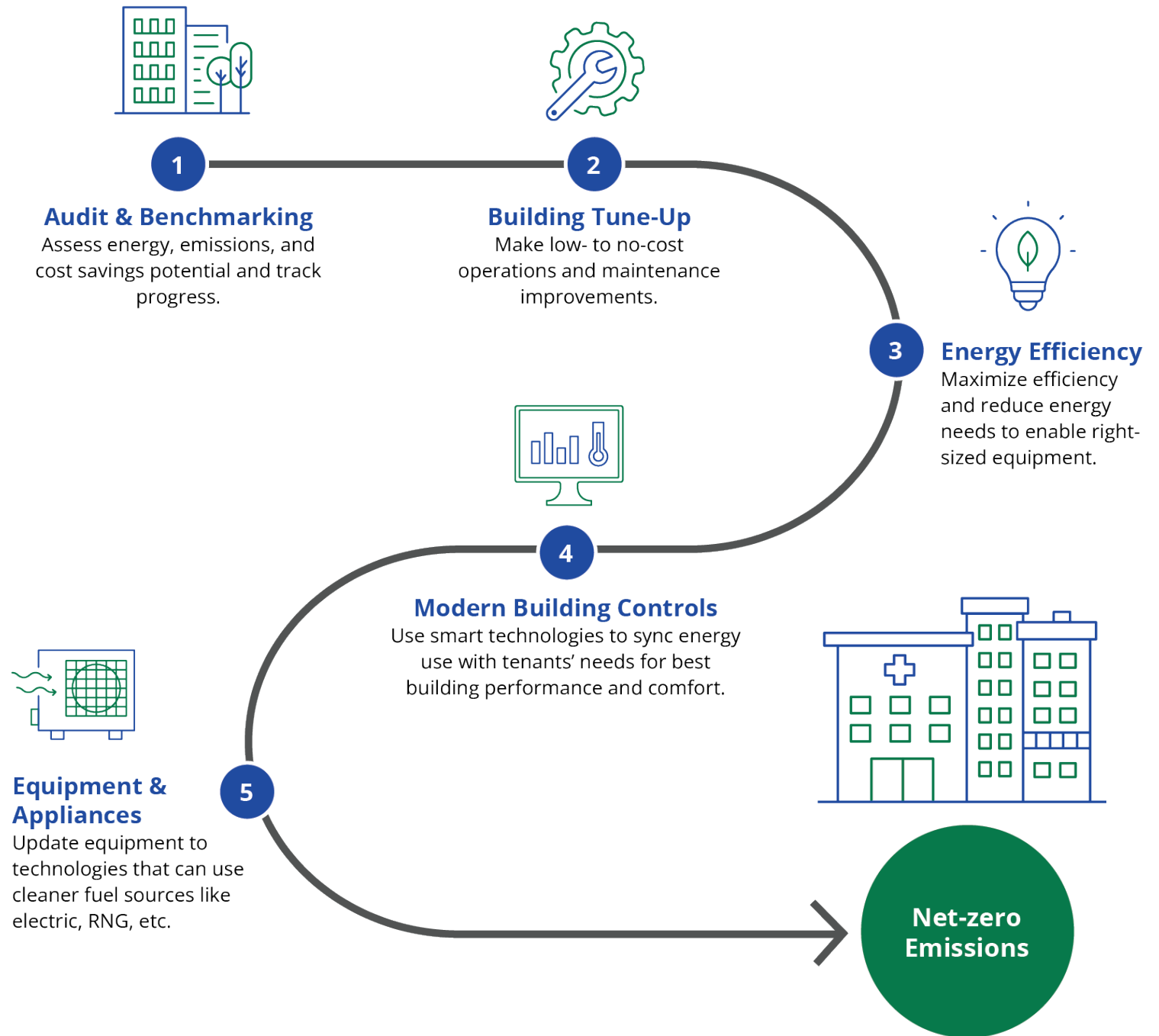


Support Programs

The background of the slide is a photograph of a modern, multi-story building with a grid-like facade of windows. The entire image is overlaid with a semi-transparent green filter. The text is centered and written in a clean, white, sans-serif font.

Poll:
In a few words, tell us about a specific type of support or a resource that your building or organization could use to reduce emissions and/or support a just transition.





There will be many ways for buildings to make this transition over time.



The Seattle Clean Buildings Accelerator launches in summer 2022 as a technical support hub for building owners and managers, specifically those under-resourced.



Seattle Clean Buildings Accelerator

OBJECTIVES	Two Offerings to Start	
	EDUCATION Self-led	LIGHT COACHING Tailored support
 Understand the Law and Code	<ul style="list-style-type: none">• Pre-recorded webinars	<ul style="list-style-type: none">• Live virtual workshops
 Identify Energy and Carbon Opportunities	<ul style="list-style-type: none">• Common energy and carbon opportunities	<ul style="list-style-type: none">• Site specific virtual energy walk through
 Develop Documentation	<ul style="list-style-type: none">• Checklists• Templates and examples	<ul style="list-style-type: none">• List of specific projects• Expert review of documents
 Comply with Performance Targets	<ul style="list-style-type: none">• How to identify targets• Energy efficiency and carbon resources	<ul style="list-style-type: none">• Prioritize projects

Accelerator Next Steps

- Attend an information session to learn more:
 - Wednesday, July 20, 12-1PM:
https://bit.ly/OSecCleanBuildingsInfo_July20
 - Wednesday, August 3, 12-1PM:
https://bit.ly/OSecCleanBuildingsInfo_Aug03

Website: www.seattle.gov/building-performance-standards (Link under News & Updates)

Case Studies & Sharing City Experience



Seattle Midsize Office Building

An energy efficiency and electrification path to carbon neutral

About

Size & Vintage: Approx. 55,000 sf office building, built between 1946 and 1979.

Projected Total Energy Savings: Nearly 60%, reducing the building's EUI to 31 kBtu/sf/yr.

Projected Total Emissions Reduction: 80 MT/CO₂e annually.

Projected Utility Cost Savings: \$43,500 annually.

Estimated Total Plan Costs: \$975,000 (\$17.70/sf).

Consultants: University of Washington Integrated Design Lab and Solar Energy Group.



Stewart Manor Affordable Housing

An energy efficiency and electrification path to carbon neutral



Credit: UW Integrated Design Lab



Washington State Department of Services for the Blind

An energy efficiency and electrification path to carbon neutral



Credit: Seattle OSE



Equipment costing fact sheet coming soon!

Energy Use & Emissions Reports

2019 Energy Use and Emissions Report



SEATTLE JUSTICE CENTER

610 5TH AVE
SEATTLE WA 98104

Sq Footage	310,490
Type	Other
OSE Building ID	358
Year Built	2001

58.8 KBTU/FT²
energy use per square foot*

↓ 38% lower than similar buildings.



1 KG CO₂e/FT²
emissions per square foot

↓ 59% lower than similar buildings.



*All EUIs are adjusted for weather

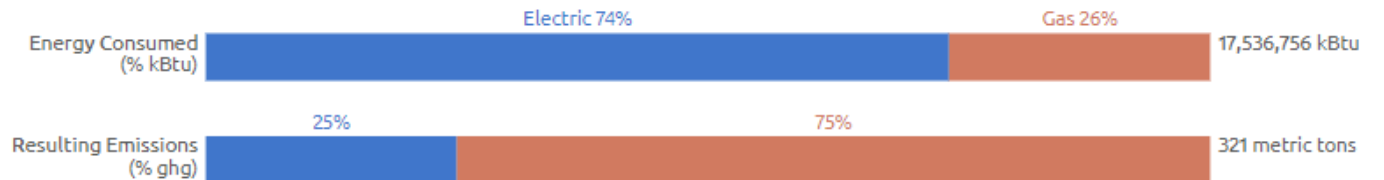
i New state requirement! Action is required.

This building likely must comply with Washington state's Clean Building Performance Standard. [Learn more below.](#)

CLIMATE POLLUTION IMPACT OF ENERGY USE

Over 90% of Seattle's building emissions come from burning fossil fuels like fracked gas and oil for furnaces, water heaters, and appliances - including gas used to generate steam. In Seattle, all-electric buildings have the lowest emissions.

This building's energy and emissions:



321 MT CO₂E is the equivalent of **68.4 passenger vehicles driven** for one year.

www.seattle.gov/energybenchmarkingmap

**\$1.8M recently
awarded for
workforce
development,
investing in clean
energy jobs and
construction training.**



Additional Funding Taking Shape

The City is committed to seeking federal, state, and other funding sources.

- Participation in National Building Performance Standards Coalition.

Green New Deal Oversight Board recommendations for 2023:

- \$4.5M annually for engineering and upgrades in nonprofits and affordable housing serving low-income and BIPOC communities to reduce building emissions.
- \$1M annually for clean energy jobs, focusing on priority hire persons (BIPOC and women) and youth.
- City staff support to help grow above programs.



Poll Results



**Part 2:
Seattle BPS
Draft Policy Framework
Targets**

Draft Policy Framework: Greenhouse Gas Intensity Targets by Building Type

Why:

- Provides defined, publishable targets.
- Creates clear compliance metrics for owners and city staff.
- Avoids complexities of tracking individual targets as building ownership changes.

How:

- Targets for mixed-use buildings calculated on pro-rated mix of spaces.

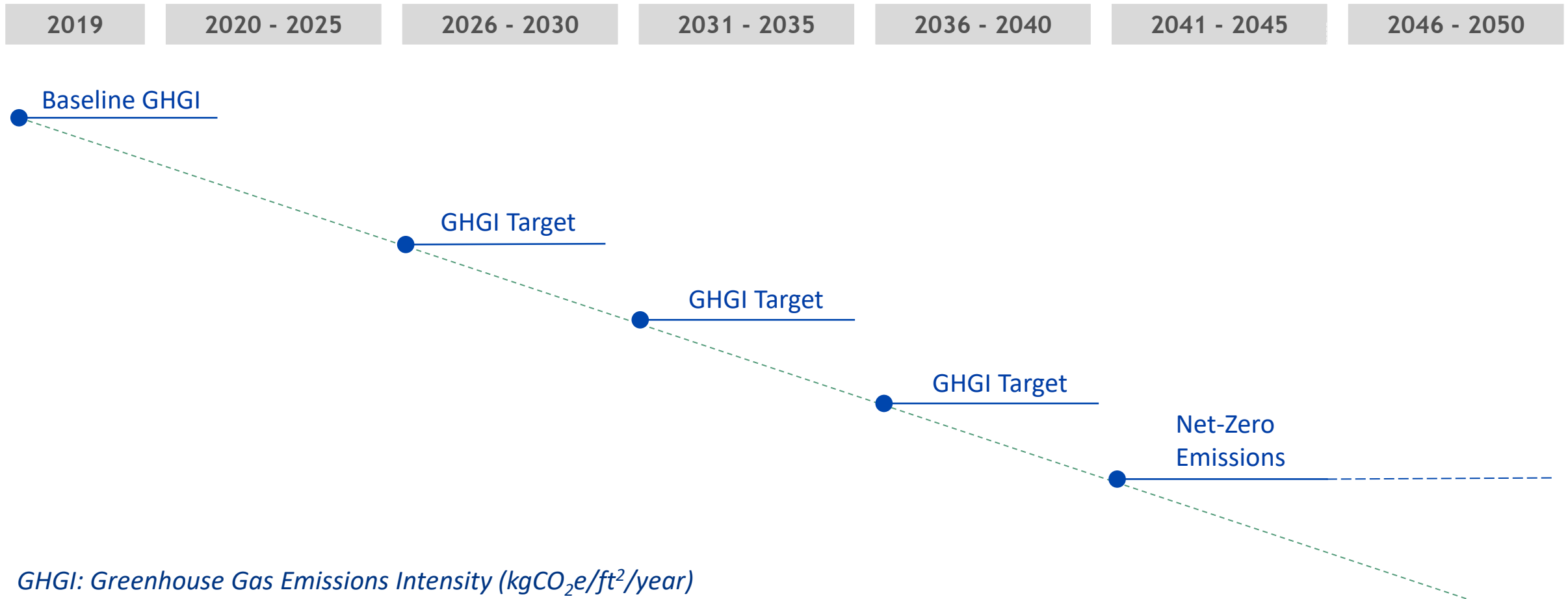
When:

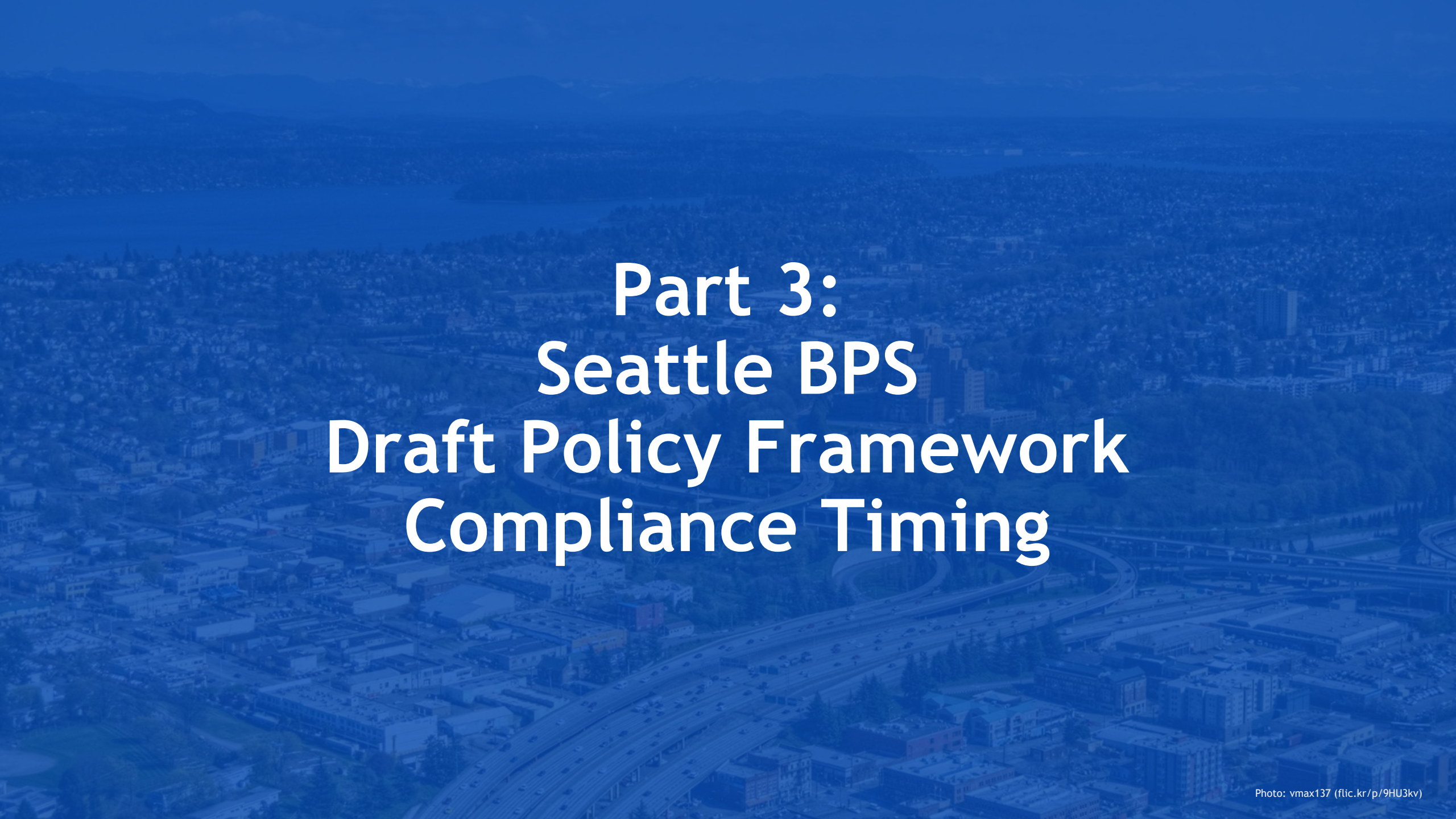
- Final Greenhouse Gas Intensity (GHGI) targets set by rule in 2023, with analysis now to identify rough order of magnitude targets.



**Individualized
Targets
as an Alternative
Compliance
pathway.**

Draft Policy Framework: Targets Pathway



An aerial photograph of Seattle, Washington, showing a dense urban landscape with a prominent multi-lane highway in the foreground. The entire image is overlaid with a semi-transparent blue filter. The text is centered in the upper half of the image.

Part 3: Seattle BPS Draft Policy Framework Compliance Timing

Draft Policy Framework - Compliance Pathway

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045										
Seattle Emissions Performance Standards: Nonresidential (Commercial) & Multifamily > 20,000 sq. ft. **DRAFT**																																		
Legislation	█																																	
Rulemaking		█	█							Each 5-year cycle: Benchmarking Verification & Planning																								
Program Implementation		█	█	█																														
Support/Incentives	█	█	█	█																														
Nonresidential (State Tier 1 Buildings)					Emissions Reductions					Meet Emissions Targets					Meet Emissions Targets					Achieve Net-Zero Emissions														
>220K					█					█					█					█														
>90-220K						█					█					█					█													
>50-90K							█					█					█					█												
Nonresidential (State Tier 2 Buildings)																																		
>30-50K								█					█						█					█										
>20-30K									█					█						█					█									
Portfolios / Campuses					█					█					█					█					█									
Multifamily (State Tier 2 Buildings)					Voluntary Action					Meet Emissions Targets					Meet Emissions Targets					Achieve Net-Zero Emissions														
>220K					█					█					█					█					█									
>90-220K						█					█					█					█				█									
>50-90K							█					█					█					█			█									
>30-50K								█				█						█					█		█									
>20-30K									█					█						█					█									
Affordable Housing (State Tier 2 Buildings)					Voluntary Action					Voluntary Action					Meet Emissions Targets					Achieve Net-Zero Emissions														
>220K					█					█					█					█					█									
>90-220K						█					█					█					█				█									
>50-90K							█					█					█					█			█									
>30-50K								█				█						█					█		█									
>20-30K									█					█						█					█									
Afford. Hsg. Portfolio							█					█							█					█										

Nonresidential Requirements: 2026 - 2030



Benchmarking verification



2026-2030: Buildings above GHGI target must reduce emissions by the lesser of the following:





- X% (e.g., 15%, final % TBD)
- By the % needed for the building to meet the GHGI target
- Opportunities for alternative compliance or extension based on circumstances



Planning to identify actions for achieving targets in 2031-2035

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Nonresidential (<i>State Tier 1 Buildings</i>)					Emissions Reductions				
>220K					■				
>90-220K						■			
>50-90K							■		
Nonresidential (<i>State Tier 2 Buildings</i>)									
>30-50K								■	
>20-30K									■
Portfolios / Campuses					■				

Nonresidential Requirements: 2031 - 2045

-  Benchmarking verification (each cycle)
-  Meet Emissions Targets 2031-2040
-  Planning to identify actions for achieving targets for following cycle
-  Achieve Net-Zero 2041-2045

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Nonresidential	Meet Emissions Targets					Meet Emissions Targets					Achieve Net-Zero Emissions				
>220K	■					■					■				
>90-220K		■					■					■			
>50-90K			■					■					■		
Nonresidential															
>30-50K				■					■					■	
>20-30K					■					■					■
Portfolios / Campuses	■					■					■				

Multifamily (Affordable & Market Rate) Actions: 2026 - 2030



Benchmarking verification



Voluntary GHGI action



Planning to identify actions for achieving targets

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Multifamily (State Tier 2 Buildings)	Voluntary Action								
>220K					■				
>90-220K						■			
>50-90K							■		
>30-50K								■	
>20-30K									■
Affordable Housing (State Tier 2 Buildings)	Voluntary Action								
>220K					■				
>90-220K						■			
>50-90K							■		
>30-50K								■	
>20-30K									■
Afford. Hsg. Portfolio							■		

Multifamily (Market Rate) Actions: 2031 - 2045



Benchmarking verification (each cycle)



Meet Emissions Targets 2031-2040



Planning to identify actions for achieving targets for following cycle



Achieve Net-Zero 2041-2045

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Multifamily	Meet Emissions Targets					Meet Emissions Targets					Achieve Net-Zero Emissions				
>220K	Light Green					Light Green					Dark Green				
>90-220K		Light Green					Light Green					Dark Green			
>50-90K			Light Green					Light Green					Dark Green		
>30-50K				Light Green					Light Green					Dark Green	
>20-30K					Light Green					Light Green					Dark Green

Multifamily (Affordable Housing) Actions: 2031 - 2045



Benchmarking verification (each cycle)



Voluntary emissions reductions 2031 -2035



Planning to identify actions for achieving targets in following cycle



Meet Emissions Targets starting 2036-2040



Achieve Net-Zero 2041-2045

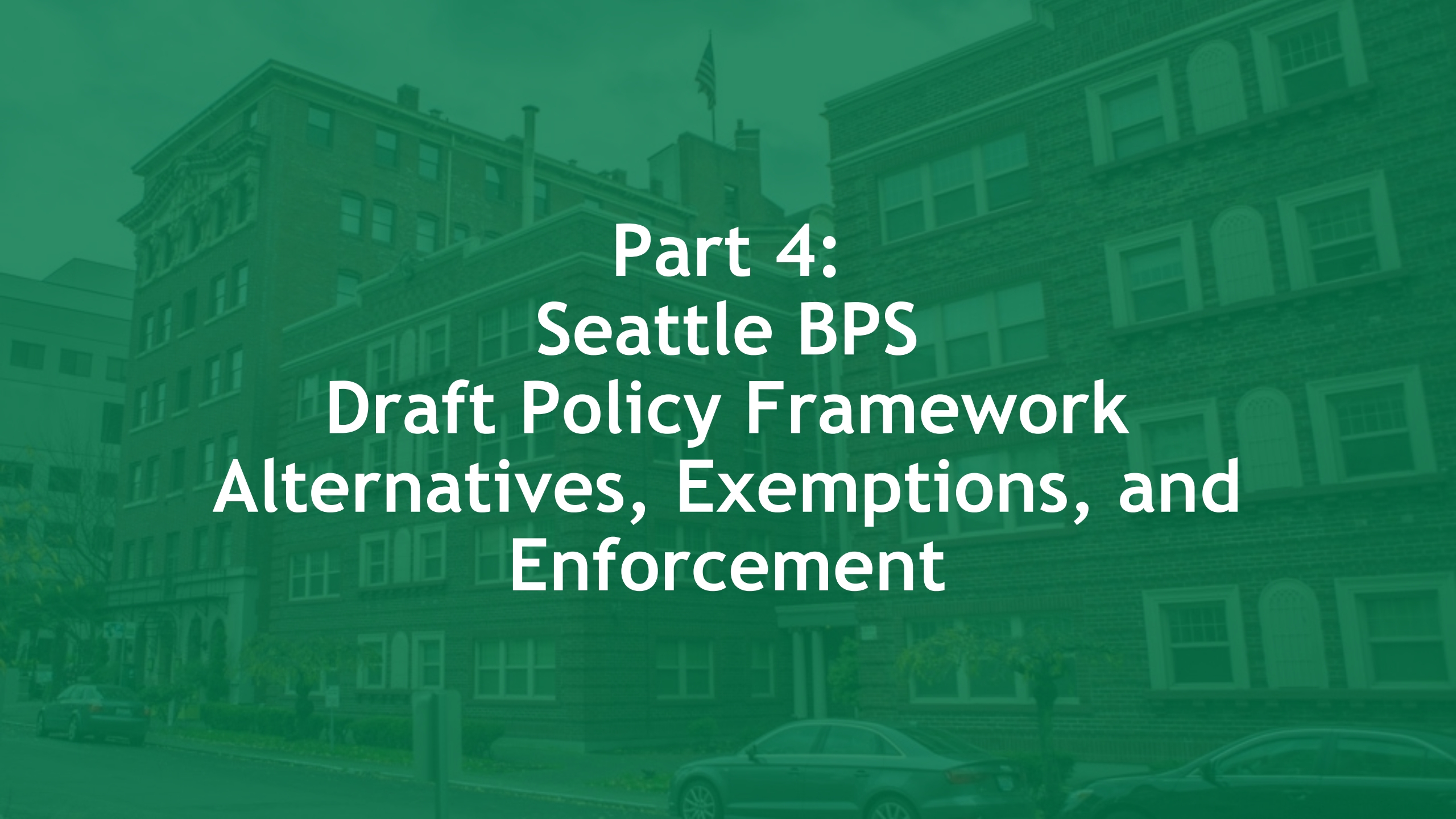
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Affordable Housing	Voluntary Action					Meet Emissions Targets					Achieve Net-Zero Emissions				
>220K	Light Green					Light Green					Dark Green				
>90-220K		Light Green					Light Green					Dark Green			
>50-90K			Light Green					Light Green					Dark Green		
>30-50K				Light Green					Light Green					Dark Green	
>20-30K					Light Green					Light Green					Dark Green
Afford. Hsg. Portfolio			Light Green					Light Green					Dark Green		

Poll:

If you are a building owner, staff or manager, how well (or not) does the BPS timeline for net-zero emissions by 2045 align with your organization's existing commitment to reduce emissions?



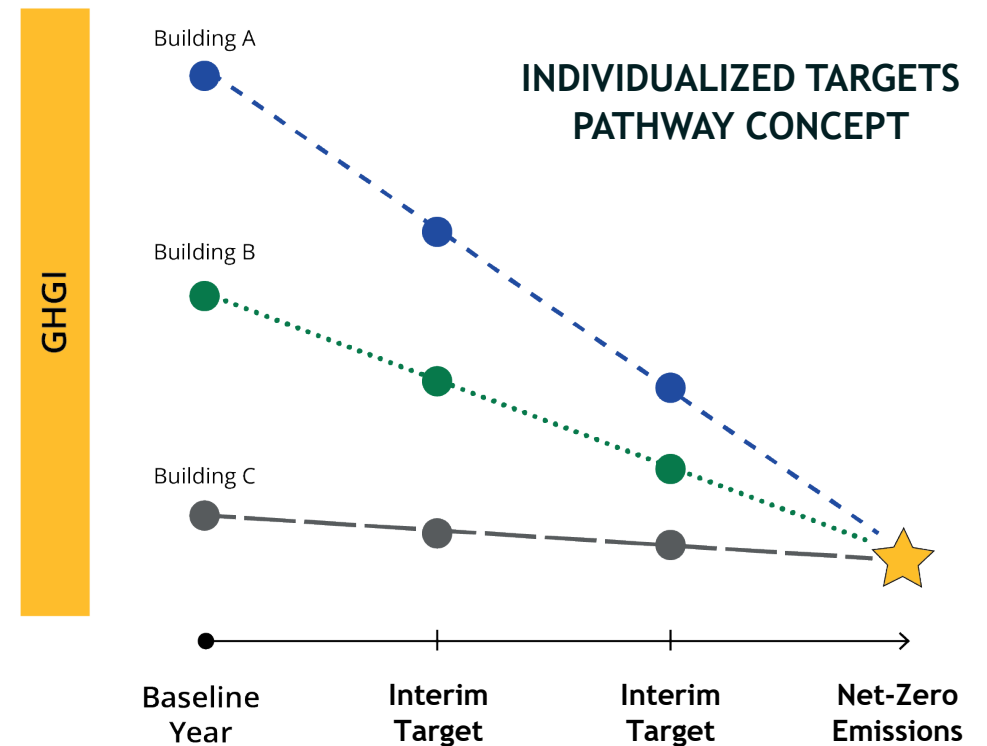
Q&A:
**What clarifying questions
do you have?**



**Part 4:
Seattle BPS
Draft Policy Framework
Alternatives, Exemptions, and
Enforcement**

Proposed Alternative Compliance (Details TBD in Rulemaking)

- Individualized Targets Pathway
 - Start at building's own baseline and set interim targets based on that to net-zero.
- Building Portfolio / Campus Compliance
 - **Portfolio:** Multiple buildings with the same long-term owner (e.g. public entity or nonprofit).
 - **Campus:** Multiple buildings on district system or jointly metered.
 - Emissions target applied in aggregate and prorated by building types.
 - Portfolio/campus compliance expected in first year of each compliance cycle.



Proposed Alternative Compliance (Details TBD in Rulemaking)

- Prescriptive options in lieu of meeting interim emissions targets.
 - **Potential Examples:**
 - Multifamily: Replace central gas domestic hot water system with electric heat pump system.
 - Small Commercial (20-50 ft²): Replace gas rooftop unit (RTU) with heat pump.



Potential Alternative Compliance (Details TBD in Rulemaking)

- Equivalent emissions reductions or equitable transition investment.
 - E.g., Payment into a Climate Investment Fund, based on the Social Cost of Carbon as established by WA State.



This Photo by Unknown Author is licensed under CC BY-NC-ND.

Extensions, Exemptions & Accommodations (Details TBD in Rulemaking)

- For certain buildings such as:
 - Severe financial hardship
 - Historic properties
 - Buildings with unreinforced masonry (URM)
 - Pending demolition
- For certain uses or equipment such as:
 - Cooking equipment
 - Process loads
 - Emergency generators




1999 Nisqually earthquake damage. USGS photo.

Enforcement

- Failure to report.
 - Benchmarking verification and planning step.
- Failure to meet emissions reduction % or emission performance target.
 - Building floor area and GHG impact to be considered in calculation.





Poll:
**How could payments into a
Climate Investment Fund be used
for decarbonization efforts in
buildings?**



Q&A:
**What clarifying questions
do you have?**

Upcoming opportunities to shape the policy.

- This recording and presentation will be posted at seattle.gov/building-performance-standards.
- Send comments after this meeting to cleanbuildings@seattle.gov.
- During the City Council legislative process, once it is introduced.
- During the rulemaking process (after legislation is passed).



Thank You for Attending

City of Seattle Office of Sustainability & Environment

seattle.gov/building-performance-standards

cleanbuildings@seattle.gov



Seattle
Office of Sustainability
& Environment