

Seattle's Building Emissions Performance Standard (BEPS)

Laboratories – Focus Group 1

October 2, 2026



Seattle
Office of Sustainability
& Environment

Agenda

- **Welcome** (5min)
- **Introductions** (5min)
- **Focus group process** (5min)
- **Greenhouse Gas Intensity Targets (GHGITs) for laboratories** (45min)
 - Existing targets and alternative pathways for Laboratories (20min)
 - New calculation methodologies and GHGITs for Laboratories (10min)
 - Questions (15min)
- **Break** (5min)
- **Group discussions** (45min)
- **Closing remarks** (10min)

Who are we?



**Lattice
Energy***

**formerly SBW Consulting*

Lets hear a bit about you

- Name
- Organization
- Your role

- What is your favourite thing to do on a rainy Sunday?



Why are we here?

- Present the provisional Greenhouse Gas Intensity Targets (GHGITs) and alternative compliance pathways available for laboratories
- Present the new GHGIT calculation methodologies and their potential impacts on BEPS requirements
- **Get your feedback!**

Focus group sessions

- October 2, 2026 (2-4pm)
 - Existing (provisional) targets and flexibility options
 - Latest GHGI target analysis
- October 15, 2026 (2-4pm)
 - Discussions on compliance pathways and timelines

Charter Agreements

- **Recording for note taking** – We will record the meeting for note-taking only. A meeting summary PDF and the meeting slides will be posted on OSE's website
- **Mutual respect** - All working group participants and facilitators are respectful of each other. Members will value each other's time, listen when people are speaking, and speak kindly to each other.
- **Open-mindedness** - Members are open to new ideas and perspectives, and do not disregard ideas they disagree with.
- **Equity** - All members are treated fairly, both by the facilitation team and by one another. Efforts are made to eliminate any real or perceived barriers to participation.
- **Be present** - You reserved the time to be here. Avoid outside distractions as much as possible but take care of your personal needs.
- **Accountability for Accuracy** - When sharing data and information make sure it is accurate and be prepared to provide a credible reference.
- **Chatham House Rule** - Participants are free to use the information received in meetings but should not identify the speaker or their affiliation.

Introduction to the BEPS Rulemaking Process



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Seattle Climate Goal: Net-Zero by 2050

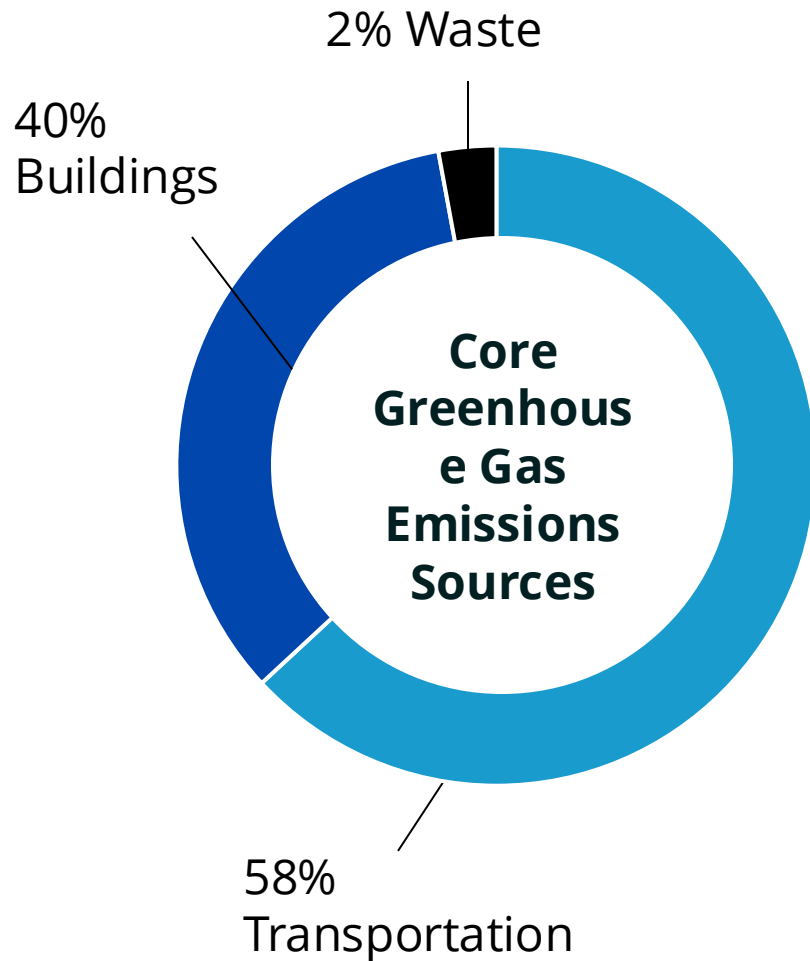


Emissions pollute our air, accelerate climate change, harm people's health and the environment, and disproportionately impact communities of color and people with lower incomes.

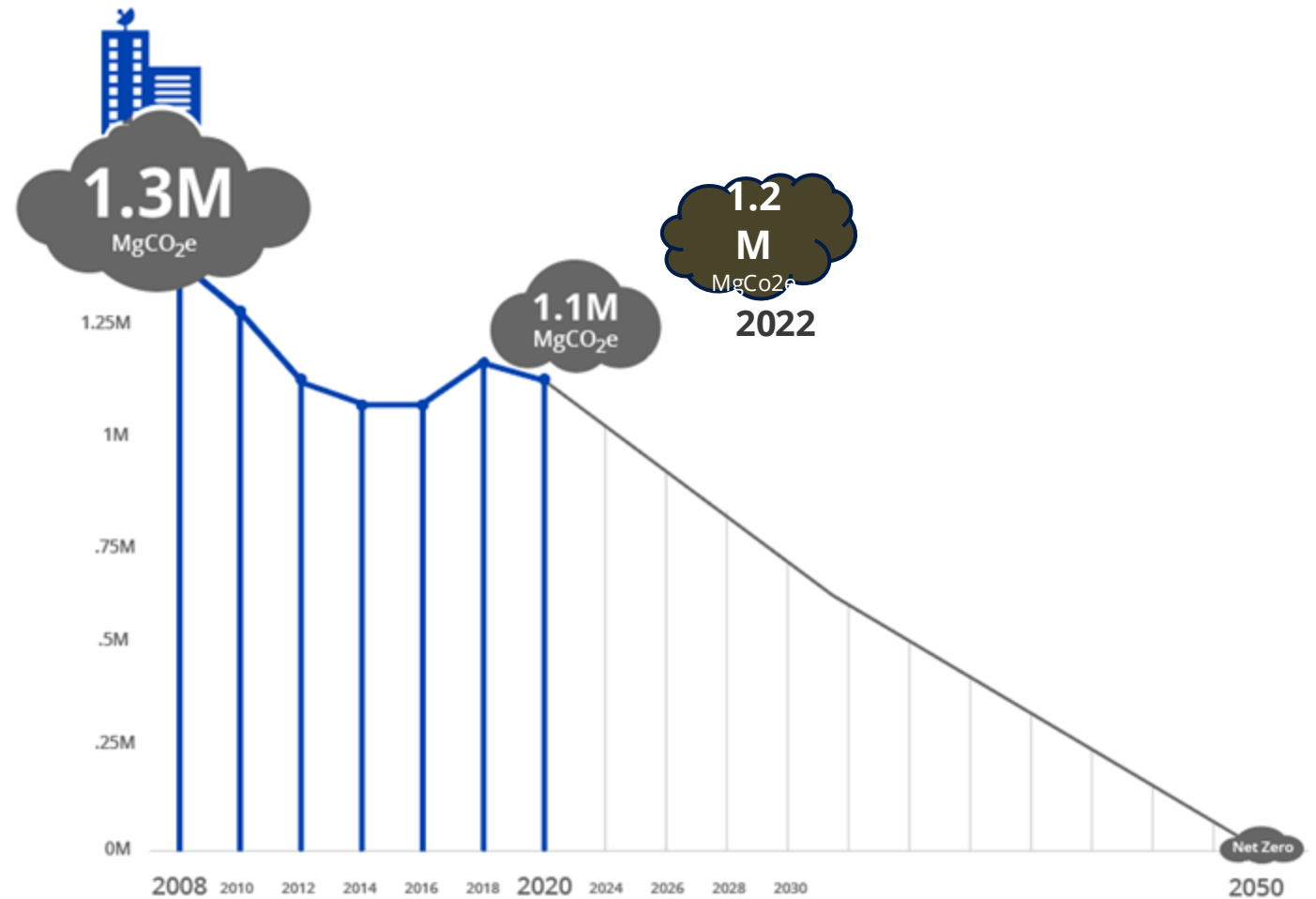


Net-zero emissions means that all energy sources used by a covered building have zero greenhouse gas emissions

Context – Seattle Greenhouse Gas Inventory



Source: 2022 Community Greenhouse Gas Emissions Inventory



Source: 2020 & 2022 Community Greenhouse Gas Emissions Inventory

What is a Building Performance Standard?

A **BPS** requires existing buildings to meet greenhouse gas emissions or energy performance targets by specific deadlines.

Decarbonization — another word for reducing emissions.



BEPS Rulemaking Overview

Per Seattle Municipal Code, a Director's Rule is the required next step to clarify an ordinance (e.g., timeline for exemptions requests, documentation required).

The Seattle BEPS law (SMC 22.925) has multiple rulemaking timeframes specified:

- ✓ The first BEPS Director's Rule – Covered about 95% of the law requirements and was signed in December 2025.
- ❑ Periodic Rule updates (addenda) for metric revisions and other select topics, like the finalizing laboratory target for 2031-2035.

Office of the City Clerk
E-signed 12/08/2025 08:27:36 PST
cityclerkfiling@seattle.gov

 **OSE**

Director's Rule 01-2025

Applicant: City of Seattle Office of Sustainability and Environment	Page: 1 of 80	Supersedes: NA
	Publication: 12/08/2025	Effective: 12/08/2025
Subject: Implementation of Building Emissions Performance Standard	Code and Section Reference: Seattle Municipal Code 22.925 Building Emissions Performance Standard	
	Type of Rule: Code Interpretation	
	Ordinance Authority: SMC 3.14.970	
Index: Ordinance - Procedural Requirements	Approved:  <u>Michelle Caulfield, Interim Director, OSE</u> Date	

2025 Final BEPS Director's Rule

BEPS Rule Periodic Updates

Rulemaking Topics Specified in BEPS Law (SMC 22.925)	By Dec 31 *By Oct 31
1st Director Rule (The Big lift needed to launch BEPS!)	Adopted Dec. 2025
2031-2035 Laboratory GHGIT, Emissions Factors for 2031-35, May revise Alternative Compliance Payment (ACP) cost for 31-35	2027
2036-2040 GHGITs; Emissions Factors for 2036-2040	2031
Revise Penalty Amounts for 2036-2040	2034*
2041-2045 GHGITs; Emissions Factors 2041-2045	2036
Revise Penalty Amounts for 2041-2045	2039*
2046-50 GHGITs; Emissions Factors for 2046-2050	2041
Revised Penalty Amounts 2046-2050	2044*

Stakeholder Engagement for this Rule

Stakeholder Engagement

- ☐ Technical stakeholder meetings
- ☐ Public webinar to share updates coming in the draft (Q2 2027)

Draft Rule Released for Public Comment

- ☐ Two-week formal public comment period (expected by Q3 2027)
- ☐ Final rule adopted and published no later than December 31, 2027

Upcoming BEPS Deadlines by Building Size

Size of Building	Verify Benchmarking, Submit GHG Report (By Oct. 1)	Meet GHGI Target, Verify Benchmarking, Submit GHG Report (By Oct. 1)
≥220,001 SF	2027	2031, 2036, 2041, 2046
90,001 to 220,000 SF	2027	2032, 2037, 2042, 2047
50,001 to 90,000 SF & district campus, portfolios, connected buildings	2028	2033, 2038, 2043, 2048
30,001 to 50,000 SF	2029	2034, 2039, 2044, 2049
20,001 to 30,000 SF	2030	2035, 2040, 2045, 2050

BEPS Requirements

Every 5 years:



Benchmarking Verification: Verify previous year's building energy use and GHG emissions (*beginning 2027-2030*)



GHG Report: Document current emissions performance & equipment, and actions to achieve targets (*beginning 2027-2030*)



Meet Greenhouse Gas Intensity Targets (*beginning 2031-2035*)



Achieve: Net-zero emissions (with narrow exceptions):

- *by 2041-2045 for commercial buildings*
- *by 2046-2050 for multifamily buildings*

BEPS is an Emissions Standard

Metric is Greenhouse Gas Intensity (GHGI)



Total annual weather normalized fuel use
for each energy source (in kBtu/year)
X
Emissions Factor of each energy source
(kgCO₂e/kBtu)
= total kgCO₂e/year

Building's total square feet (SF)
(excluding parking)

CO₂e is carbon dioxide emissions equivalent
Emissions Factor is the CO₂e associated with a unit of energy

PATH A: Most Buildings Will Meet Standard GHGIT

Building Activity Type	2031 - 2035	2036 - 2040 ¹	2041 - 2045 ^{1, 2}	2046 - 2050 ^{1, 3}
College/University	2.69	1.57	0	0
Data Center	1.43	0.83	0	0
Entertainment/ Public Assembly	1.18	0.69	0	0
Fire/Police Station	2.23	1.30	0	0
Hospital	4.68	2.73	0	0
Hotel	2.06	1.20	0	0
K-12 School	0.95	0.56	0	0
Laboratory	6.30	3.68	0	0
Medical Office	2.11	1.23	0	0
Multifamily Housing	0.89	0.63	0.37	0
Museum	2.11	1.23	0	0
Non-Refrigerated Warehouse	0.77	0.45	0	0

Building Activity Type	2031 - 2035	2036 - 2040 ¹	2041 - 2045 ^{1, 2}	2046 - 2050 ^{1, 3}
Office	0.81	0.47	0	0
Other	2.48	1.45	0	0
Recreation	3.22	1.88	0	0
Refrigerated Warehouse	0.98	0.57	0	0
Residence Hall/ Dormitory	1.16	0.68	0	0
Restaurant	5.73	3.34	0	0
Retail Store	1.03	0.60	0	0
Self-Storage Facility	0.31	0.18	0	0
Senior Living Community	2.11	1.23	0	0
Services	1.36	0.79	0	0
Supermarket/ Grocery Store	3.42	2.00	0	0
Worship Facility	1.20	0.70	0	0

Three Compliance Pathways for Flexibility

PATH A

Meet standard GHGIT or building portfolio/campus GHGIT at all 5-year intervals

Benchmarking Verification & GHG Report (All Paths)**

Meet standard GHGI Targets
Achieve Net Zero - 2041-2050



Emissions Deductions:

Emergency generators, district steam, and fossil fuel cooking, in-unit condo equipment, & more.*

PATH B

Comply with extension or basic alternate compliance

Extensions:

Extended timeline for low-income/rent housing, financial distress, new construction, high vacancy

Alternate Compliance:

- ACP payment (2031-2035)
- Multifamily prescriptive paths
 - Alternate GHGIT

PATH C

Custom timeline or targets due to hardship or unique circumstances



Decarbonization Plans:

- Net-Zero by 2050
 - Low-Emissions by 2050
- Require audit & cost analysis

Hardship Eligibility Criteria:

Historic status, seismic upgrade, or structural/electric upgrades

Exemptions: Electric only buildings (exempt from GHGI Targets)
Building demolition (all requirements)

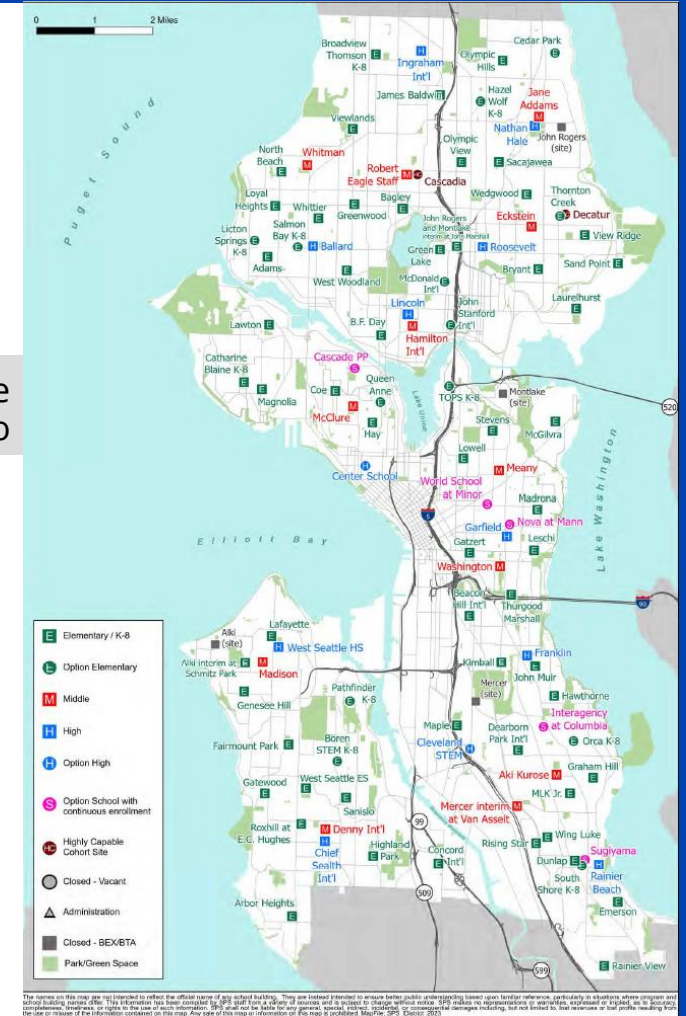
Path A Flexibility

Building portfolio, campus, connected buildings compliance allowed

- Aggregate GHGIT of all activity types in all the buildings.

Example: Group of laboratories may be eligible to comply as a building portfolio

End-use deductions (All Paths)



What are end use deductions?

What the ordinance says...

(SMC 22.925.120) “Building owners may **deduct the sum of the annual GHG emissions from the following end uses** from their compliance GHGI, for one or more compliance intervals.”



How are end use deductions factored into compliance GHGI?

ENERGY STAR Portfolio Manager Data	2019 Annual WN Energy Use (kBtu/yr)	2019-2025 Emissions Factors (kg CO2e/kBtu)	Annual GHG Emissions (kg CO2e/yr)
Electric	2,350,000	0.0058	13,630.00
Gas	2,200,000	0.053	116,600.00
Steam	0	0.081	0.00
Subtotal	4,550,000		130,230.00
Less Eligible BEPS End Use Deductions (TBD)	TBD	NA	TBD
Total	4,550,000		130,230.00
Total Gross Floor Area (excluding parking)			75,000 SF
		BEPS Compliance GHGI (kg CO2e/sf/yr)	1.74

PATH A: End Use Deductions that do not expire

Option	What	Who Can Use
Emergency Fossil Fuel Generators (h)	Emissions from this equipment, if it is captured in ESPM reporting.	Any covered building.
Emergency Backup Heat (i)	Emissions used for backup heat in cold conditions from this equipment.	Hospital and laboratory building activity types.
Electric Vehicle Charging Equipment (f)	Emissions from this equipment.	Any covered building with EV charging equipment metered with the building.
Communications Equipment (g)	Emissions from this equipment.	Any covered building with communications equipment (e.g., antennas, cell towers, etc.) unrelated to the primary building purpose.
Fossil Fuel Equipment in Residential Condo Units (e)	Emissions from equipment that is in the condo owner's unit (e.g., in-unit gas water heaters, gas stoves).	Multifamily building that is a residential condo or co-op that has individually owned units.

Note: Letters (e.g. (a)) denote where details are listed in [Section 12.06 End Use Deductions of the 2025 BEPS Directors Rule](#).

PATH A: End Use Deductions that do expire

Option	What	Who Can Use	Valid Until
District Energy Contract in Place from Provider (j)	Emissions from district energy provided steam, hot water and/or chilled water.	Any covered building with a contract in place before June 1, 2024. (e.g., CenTrio customer)	2035
Fossil Fuel High-intensity Process Equipment (c)	Emissions from this equipment. Such as autoclaves, humidification, etc.	Hospital and laboratory building activity types.	2040
Fossil Fuel High-intensity Laundry Equipment (d)	Emissions from this equipment. Washer, dryers, etc.	Hospital and hotel building activity types.	2040
Fossil Fuel Cooking Equipment (a)	Emissions from cooking equipment (e.g., gas stoves, grills).	Any covered building.	2040
Fossil Fuel Dishwashers in Food Service (b)	emissions from dishwashing equipment if they are included in the metered energy use	Any covered building.	2040

Note: Letters (e.g. (a)) denote where details are listed in [Section 12.06 End Use Deductions of the 2025 BEPS Directors Rule](#).

Path B Flexibility

Extensions (5-year interval)

Meet Standard GHGIT with an extension

- New construction
- Financial distress (pre-existing)
- High vacancy (greater than or equal to 35%)
- Change of ownership (1-year ext.)
- Low-income, low-rent housing and human service uses
- Low Income Housing: Pre-established Refinancing Date Conflict

Alternative Compliance

Alternate GHGIT (baseline to target)

- High emissions buildings, nonprofit building portfolios

Multifamily Prescriptive Path

- Convert hot water or HVAC equipment to heat pump or in-unit electric resistance (per code)

Alternative Compliance Payment

- 2031-2035 only
pay in 2031-35, not before then!



Path C Flexibility

Custom Decarbonization Compliance Plans

Enables up to nine more years from 2041–2050 to meet **net-zero** or **low emissions** by 2050.

District Campus Decarbonization Plan:

For campuses with district
energy

Customizable and flexible for individual buildings*:

- Buildings with **extenuating circumstances** that make meeting the compliance schedule or standard GHGIs **a significant hardship**.
- **Apply to demonstrate eligibility & submit documentation** as early as March 15, 2027 to one-year before compliance deadline
- **Submit Decarbonization Plan for approval** (no later than 6 months prior to compliance deadline in 2031-35 (April 1))

*except City of Seattle Public Schools

PATH C: Decarbonization Compliance Plan Extenuating Circumstances (Hardships)

NET-ZERO BY 2050

Per BEPS (SMC 22.925.100)...

- a) Substantial alteration
- b) Seismic upgrades of unreinforced masonry (URM) buildings
- c) Significant electrical infrastructure upgrades**
- d) Equipment vested under Seattle Energy Code before 2024 that has not yet reached the end of its useful service life**
- e) Non-interruptible operations in laboratory or healthcare**
- f) Lease precludes owner access to equipment
- g) No practicable low and zero GHG emissions alternatives**

Note: Details of documentation required to demonstrate eligibility is in [Section 15.01 of the 2025 BEPS Directors Rule](#).



PATH C: Decarbonization Compliance Plan Extenuating Circumstances (Hardships)

LOW EMISSIONS BY 2050

Per BEPS (SMC 22.925.100)...

- a) Net-zero infeasible in low income multifamily
- b) Historic buildings
- c) Characteristic of the building precludes electrical capacity upgrade**
- d) Characteristic of the building precludes structural capacity upgrade**
- e) Incremental cost of net-zero creates financial distress
- f) No practicable zero GHG emissions alternative**

Note: Details of documentation required to demonstrate eligibility is in [Section 15.02 of the 2025 BEPS Directors Rule](#).



Emphasizing Support Before Enforcement

360-day grace period after compliance deadline before any fines are issued.

Director may reduce GHGIT penalty if no more than 20% above target.

Director has authority to **mitigate fines** and to **establish grace periods** for penalties for all buildings.



History with Energy Benchmarking and Building Tune-ups

Greater than 95% compliance, mostly due to extensive outreach and compliance support!

Other jurisdictions offer similar compliance paths

What other regions do :

- Variations in end-use deductions and expiry timelines
 - Backup power is only exempt for hospitals (Boston)
 - Deductions for solar, storage, time of use, biofuels and cogeneration (NYC)
- Alternative compliance payments
 - Affordable Housing Reinvestment Fund (NYC)
 - Equitable Emissions Investment Fund (Boston)
- Renewable Energy Certificates (Boston, NYC) - Preempted by BEPS
- Power Purchase Agreements (Boston, NYC – 10% max)
- Trading schemes (Tokyo, NYC study - equity implications)

Seattle BEPS offers

Emissions Deductions:

Emergency generators, district steam, and fossil fuel cooking etc.

Portfolio Compliance:

Aggregate GHGI for portfolio, campus and connected buildings

Extensions:

Extended timeline to maintain essential services, or for high vacancy

Alternate Compliance:

ACP payment (2031-2035)
Alternate GHGIT

Custom Decarbonization Plans

Allows up to 9 extra years to meet net zero or low emissions by 2050

Questions?



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Laboratory GHGI Targets - Revised Technical Analysis



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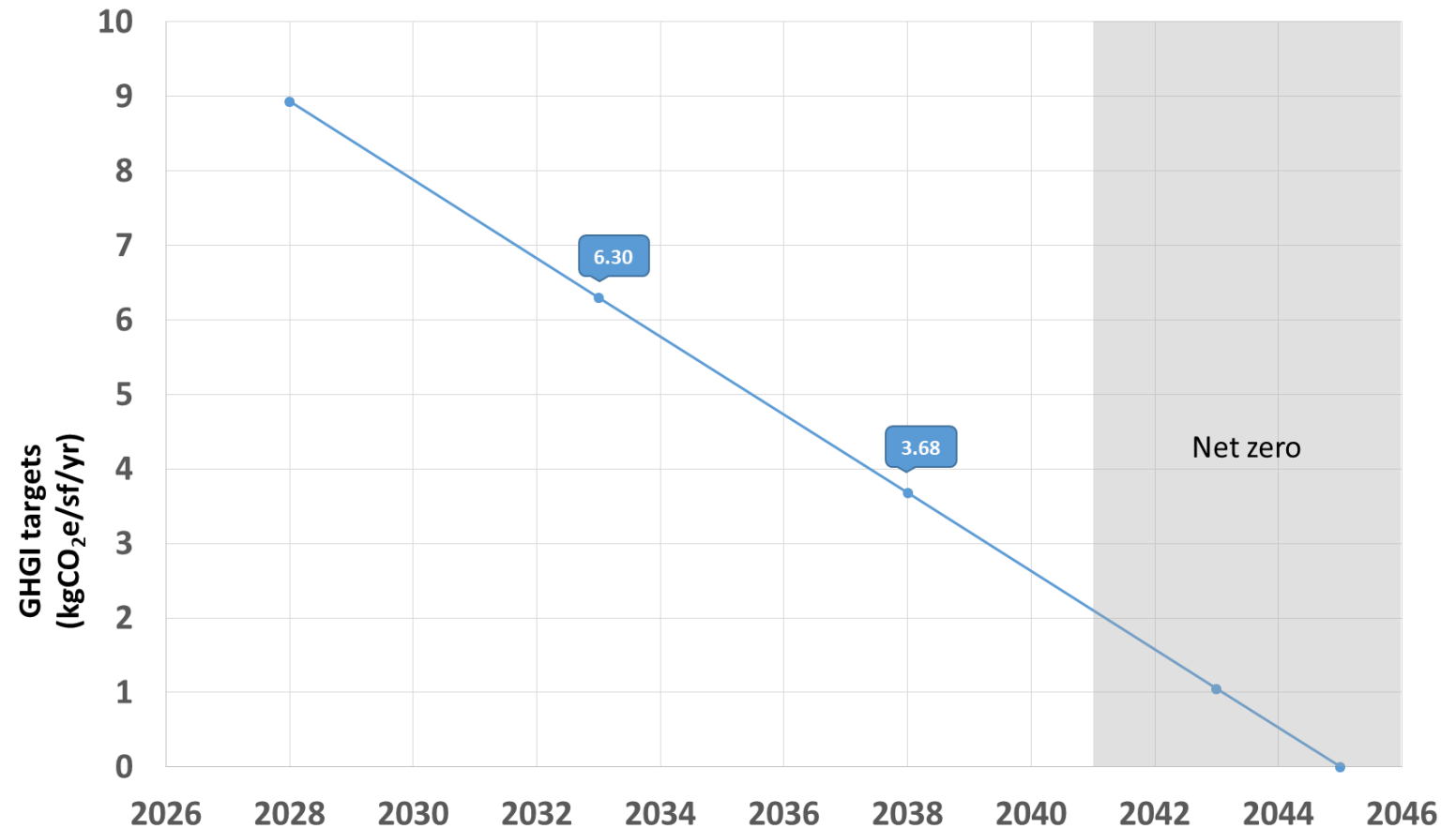
Original Calculation Methodology



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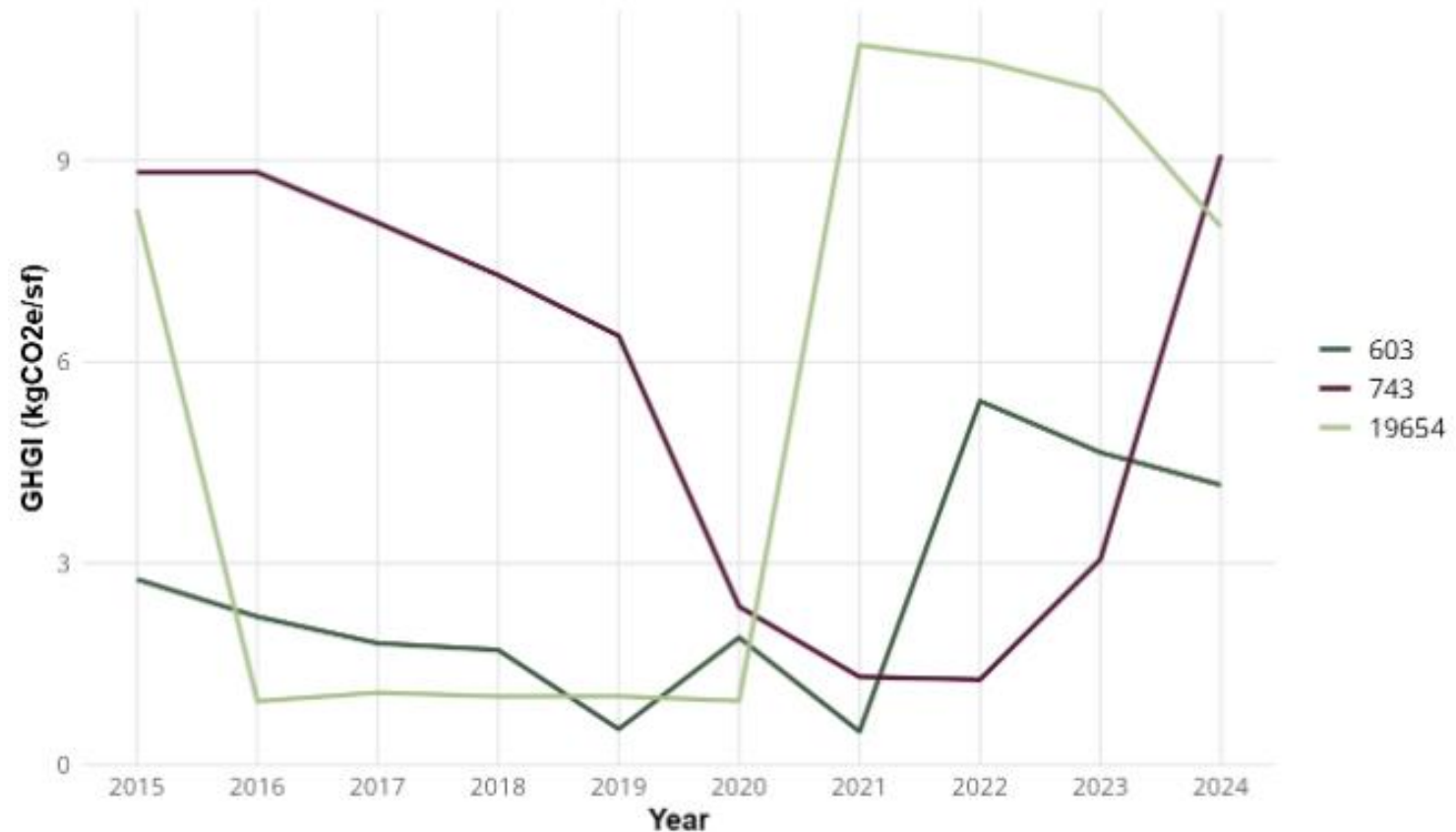
**formerly SBW Consulting*

- Lawrence Berkeley National Laboratory 2019 data
- Calculate the floor area weighted GHGI
- Mean GHGI = baseline
- Baseline year 2028
- Interpolate to zero for 2045



Revised Laboratory GHGI Targets

- Initial targets set in 2019
 - Concerns from laboratory stakeholders
 - 3 of the laboratory buildings showed unusual usage data in 2019
- Review the technical analysis



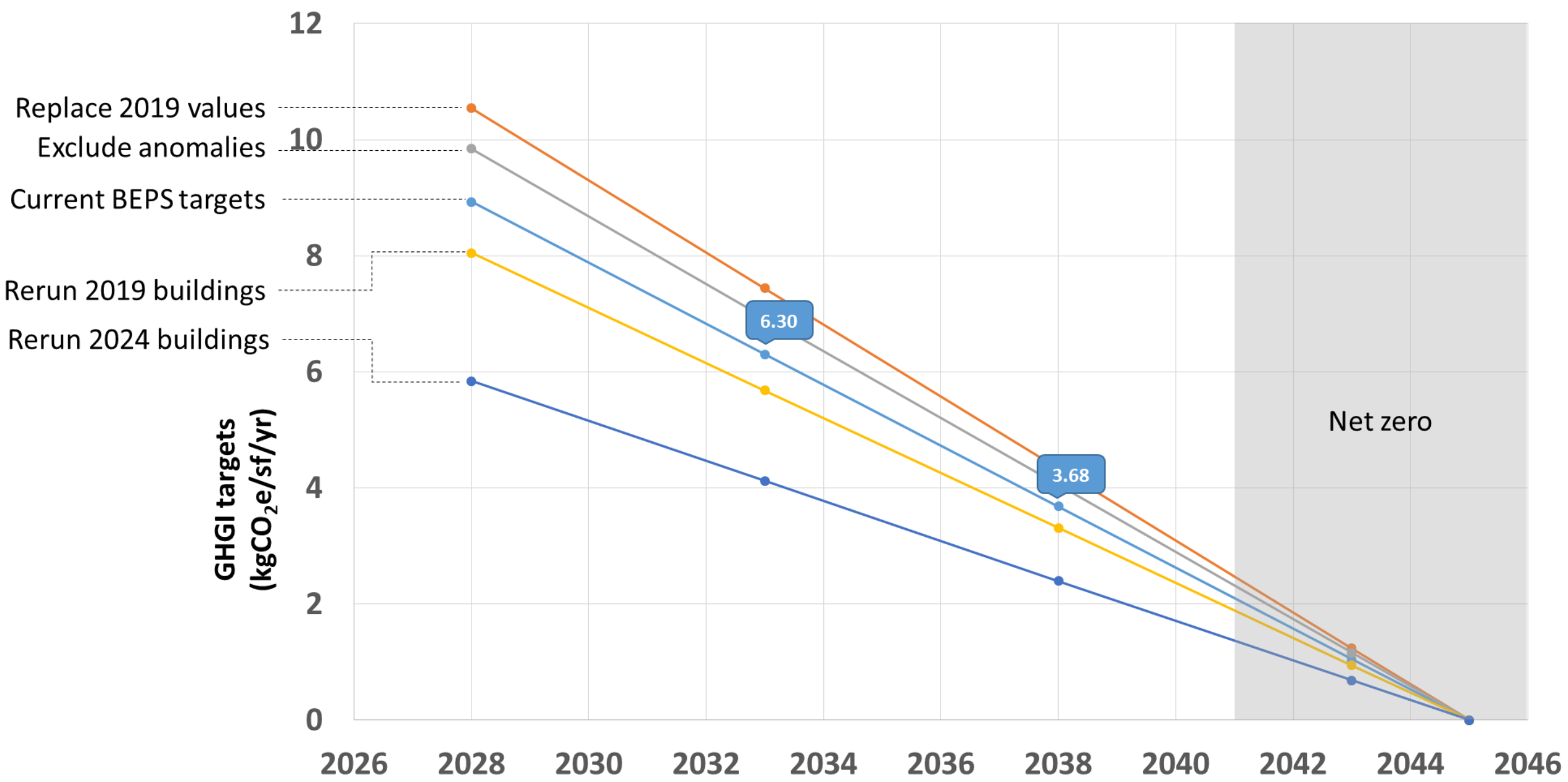
Calculation Methodology - Revised

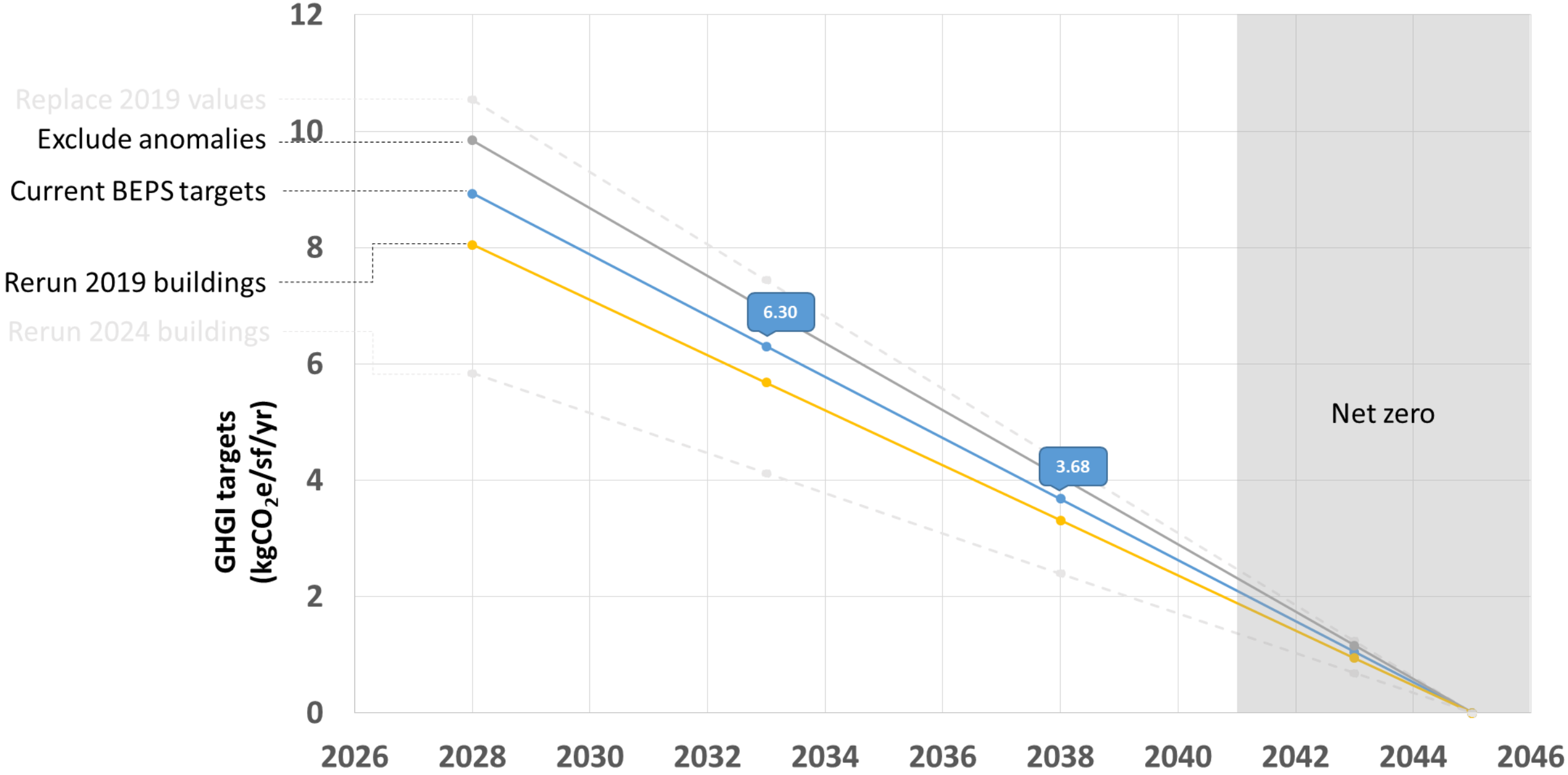
2019 Target Refresh

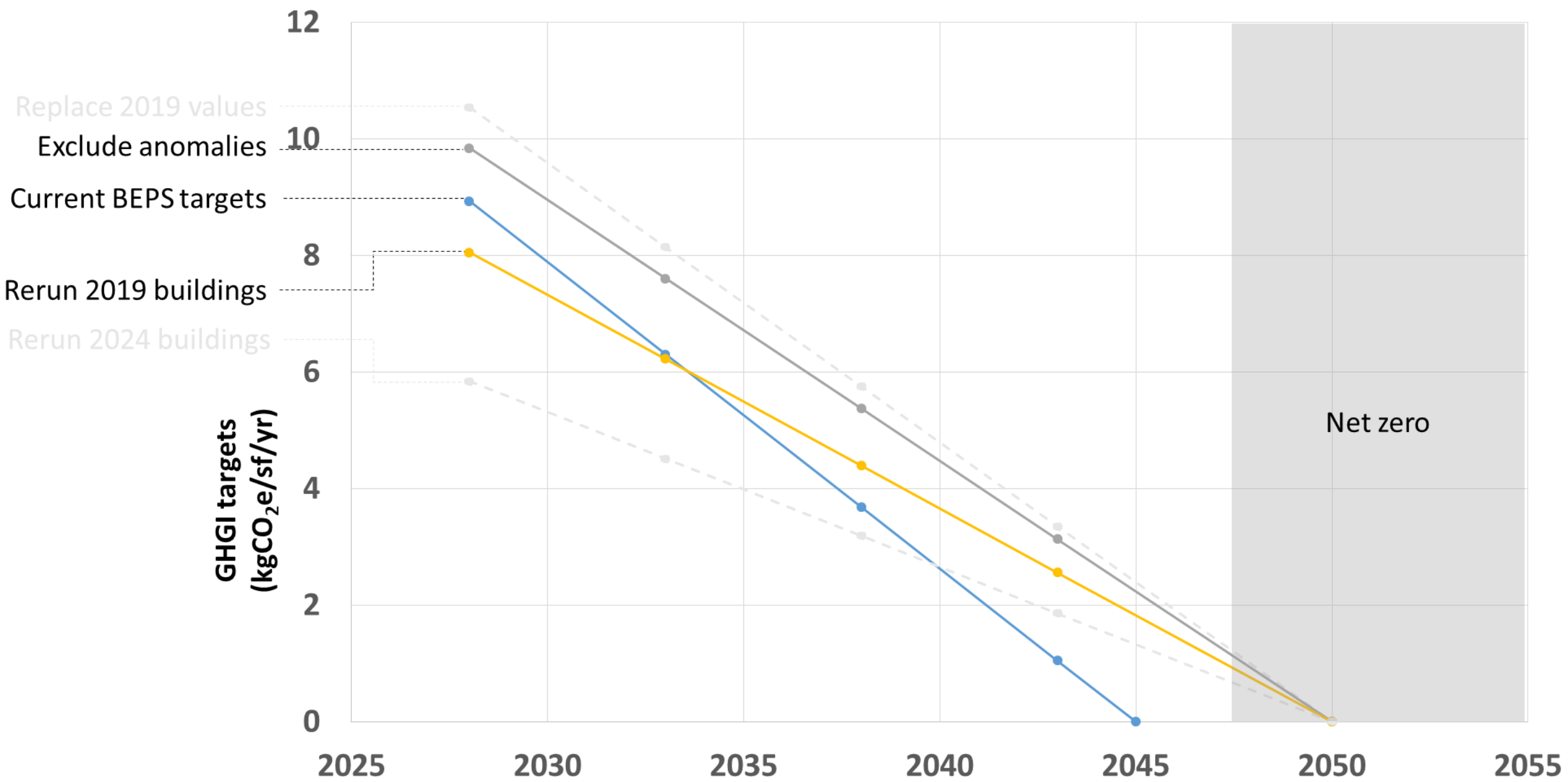
- **Replace** 2019 values with values based on trends or average values from more representative years
- **Exclude** anomalies

2024 Target Refresh

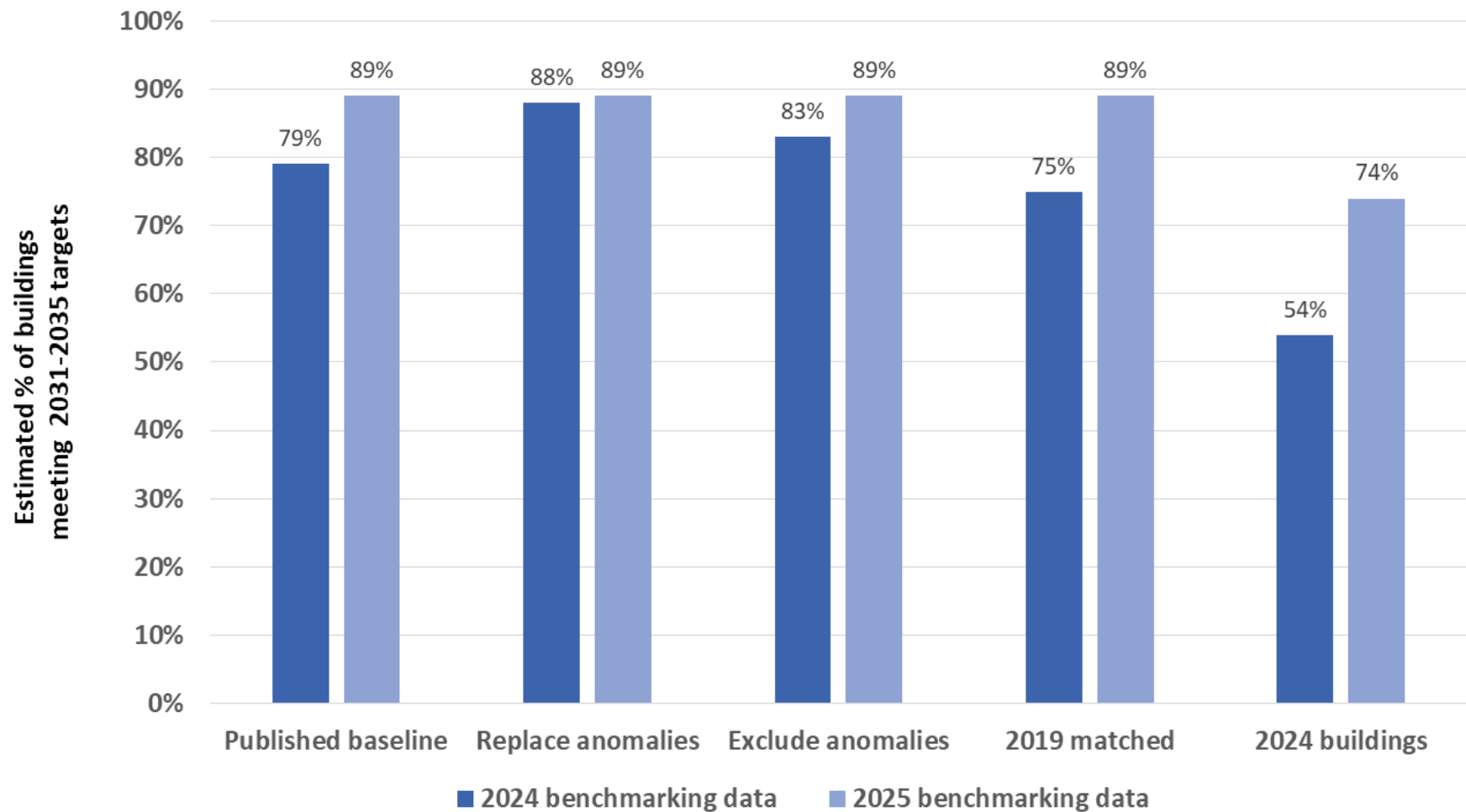
- **Rerun** analysis using 2024 data (2024 buildings – more labs)
- **Rerun** analysis using 2024 data (2019 buildings only)

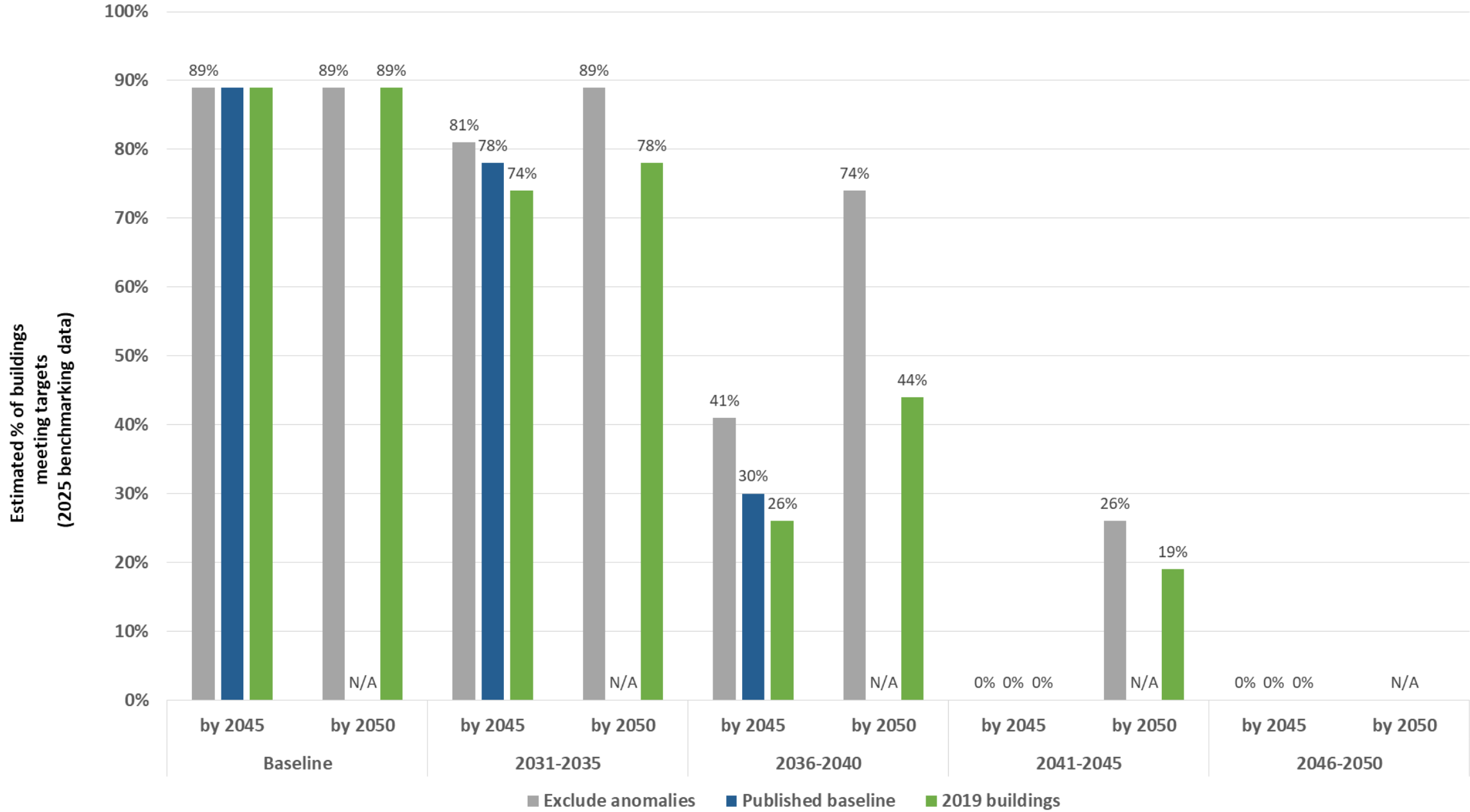






Projected % of buildings meeting targets





Feedback on analysis

Do these results surprise you or not? **Why?**

What might explain **lower GHGI targets** based on more recent benchmarking data?

Quick break!



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Discussion



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Discussion 1

Zoom poll + discussion

Which flexibility options do you think are **most relevant** for laboratories, and why?

Emissions Deductions:

Emergency generators, district steam, emergency back-up heat etc.

Portfolio Compliance:

Aggregate GHGI for portfolio, campus and connected buildings

Extensions:

Extended timeline to maintain essential services, or for high vacancy

Alternate Compliance:

ACP payment (2031-2035)
Alternate GHGIT

Custom Decarbonization Plans

Allows up to 9 extra years to meet net zero or low emissions by 2050

Discussion 2

Are there **unique circumstances, not addressed** by the flexibility options?

Emissions Deductions:

Emergency generators, district steam, and fossil fuel cooking etc.

Portfolio Compliance:

Aggregate GHGI for portfolio, campus and connected buildings

Extensions:

Extended timeline to maintain essential services, or for high vacancy

Alternate Compliance:

ACP payment (2031-2035)
Alternate GHGIT

Custom Decarbonization Plans

Allows up to 9 extra years to meet net zero or low emissions by 2050

Discussion 3

What other flexibility options (if any) are needed to help laboratories meet the 2031-2035 target?

2036-2040 target?

Net zero by 2045?

End of meeting survey

Labs Focus Group Feedback

