



Building Energy Benchmarking and Performance Standards

T&E Worksession
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What is a Building Performance Standard?



- Establishes requirements for **existing** building to meet performance objectives across one or more quantitative measurements
- Complements building codes
- Applies to a large swath of public and private buildings over a certain size on preset dates (no trigger needed)
- Builds on an established energy benchmarking program that promotes data tracking and transparency and provides information to the jurisdiction

Why a Building Performance Standard?

- **Reduces GHG Emissions:** BEPS can reduce on-site fossil fuel use by up to 86% -- and **cut GHGs by up to 97% in covered buildings** with a 100% clean electricity grid
- **Economic Development:** There is potential for **\$279 billion+ investment** in upgrading U.S. buildings, yielding more than **\$1 trillion of energy savings over 10 years.**
- **Energy Equity:** Building improvements provide **healthier air, increase tenant comfort, and lower energy bills** for both owners and tenants while providing flexibility in compliance.
- **Grows Green Jobs:** Local contractors benefit from **new job opportunities** as energy assessments and on-site building upgrades must be done by local workforce.



BEPS Is an Emerging Policy Nationwide

The State of Building Performance Standards in the U.S.
March 2023



-  Passed BPS policy or program
-  Participant of National Building Performance Standards (BPS) Coalition
-  Both



Washington, DC
Montgomery County
Maryland

Montgomery County BEPS Law (Bill 16-21)

The County's BEPS Law, passed in April 2022, does the following:

- 1. Covers additional properties under the [Benchmarking Requirement](#)**
 - Drop square footage threshold to 25,000 gross square feet
 - Add multifamily and previously-exempted building types

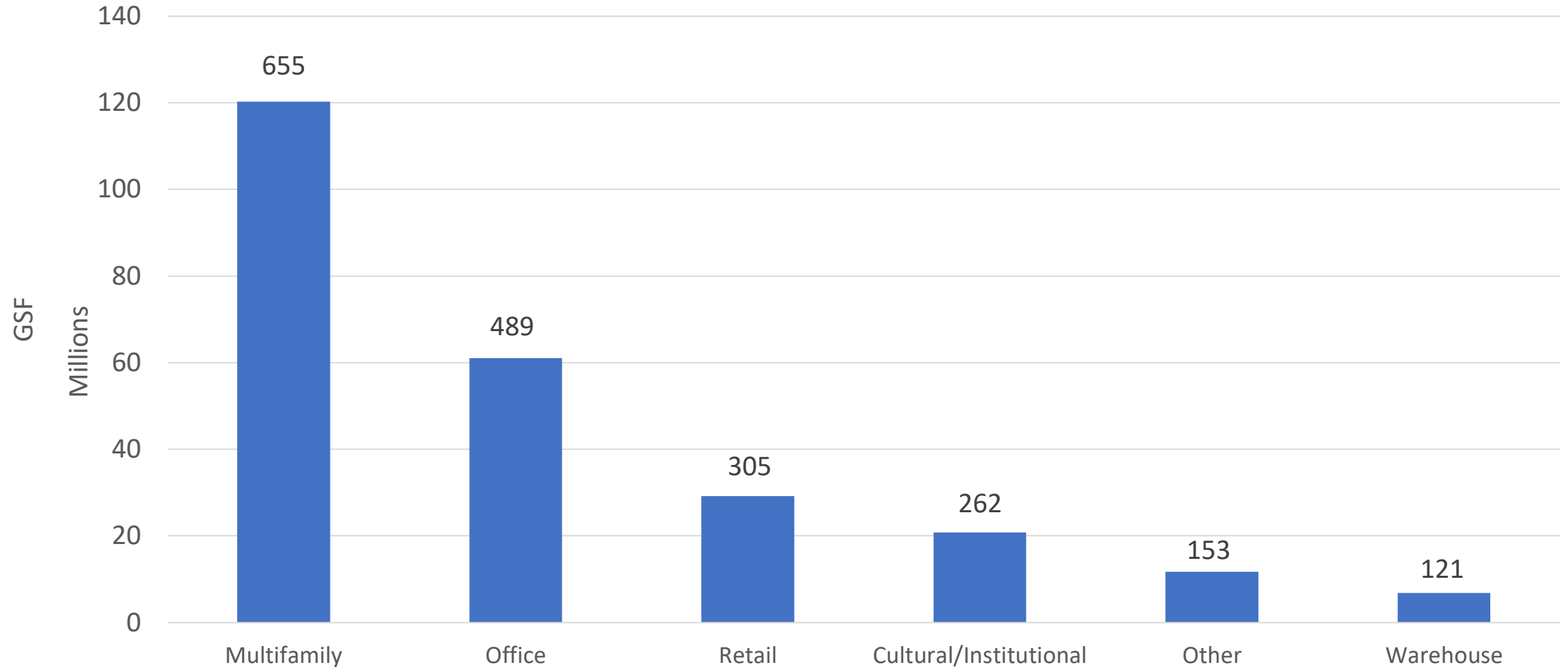
- 2. Creates Framework for [Building Energy Performance Standards \(BEPS\)](#)**
 - Require most buildings to become more energy efficient over time to meet long-term targets

- 3. Creates a [Building Performance Improvement Board](#)**
 - 15 voting members to advise on BEPS regulations & implementation
 - Appointed in September 2022, first meeting October 2022

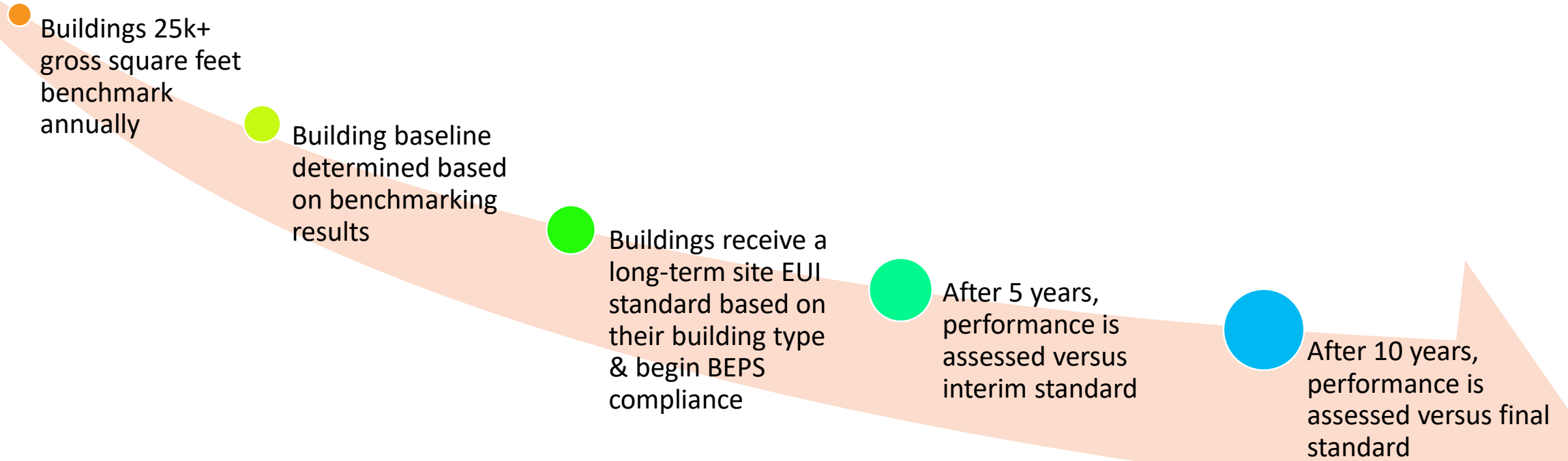
- 4. Requires the Executive to Develop Regulations**

Countywide Applicability

About 250 million sq ft, ~2,000 total buildings across Montgomery County covered by benchmarking/BEPS

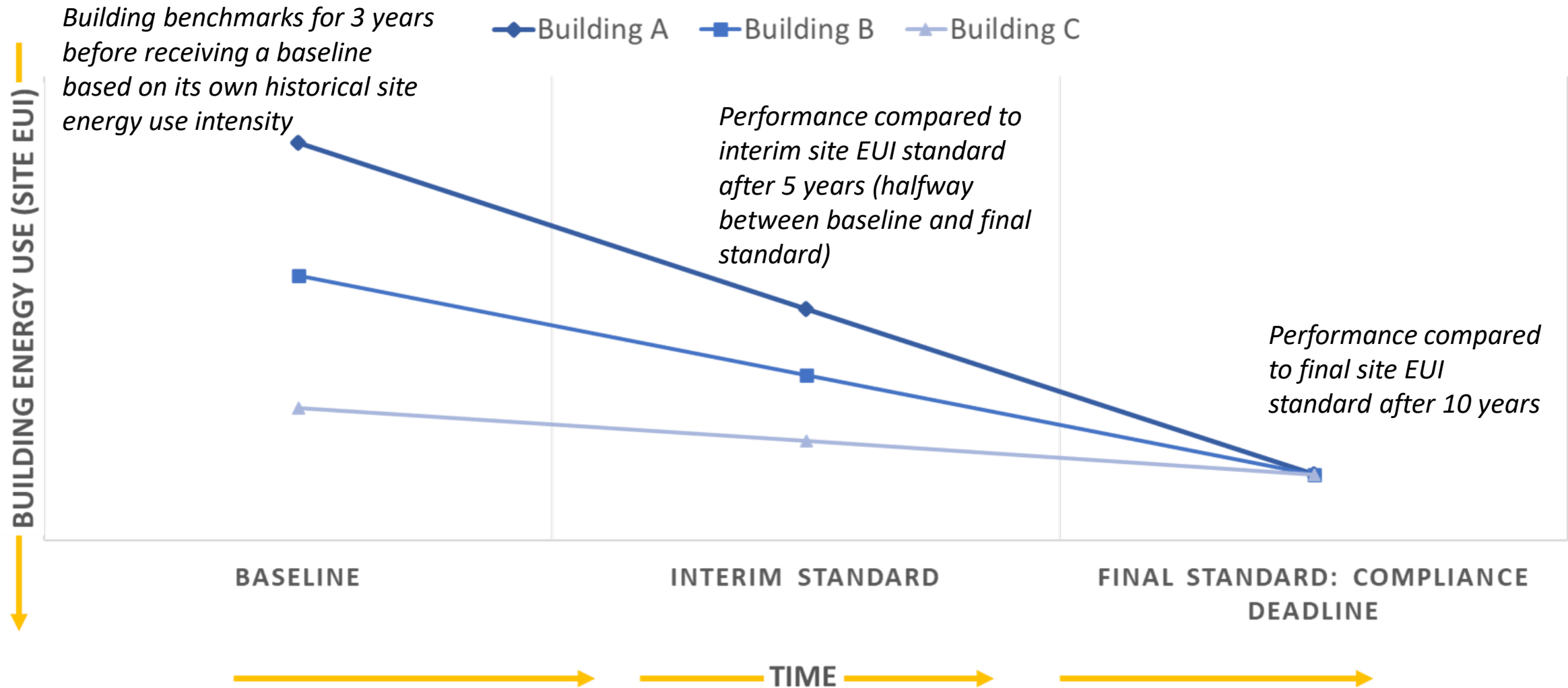


BEPS Process Overview



Law: Montgomery County BEPS

BEPS TRAJECTORY MODEL



Key Dates

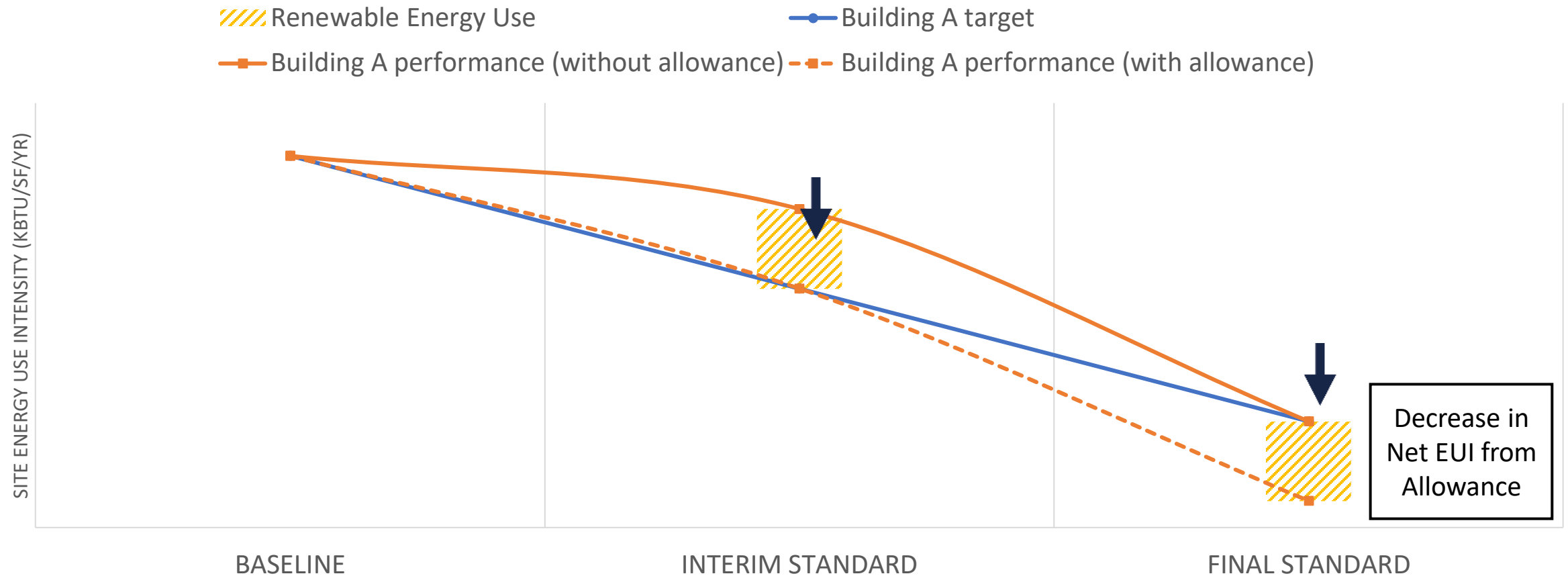
Building Group	First Benchmarking Deadline	Baseline Years	Interim Standard	Final Standard
County County-owned buildings 50k+	June 1, 2015	2018-2022	12/31/28	12/31/33
Group 1: Non-Residential >250k gsf	June 1, 2016	2018-2022	12/31/28	12/31/33
Group 2: Non-Residential 50-250k gsf	June 1, 2017	2018-2022	12/31/28	12/31/33
Group 3: Non-Residential 25 – 50k	June 1, 2023	2022-2024	12/31/30	12/31/35
Group 4: Residential >250k gsf	June 1, 2023	2022-2024	12/31/30	12/31/35
Group 5: Residential 25-250k gsf	June 1, 2024	2023-2025	12/31/31	12/31/36

Regulation: Performance Standards

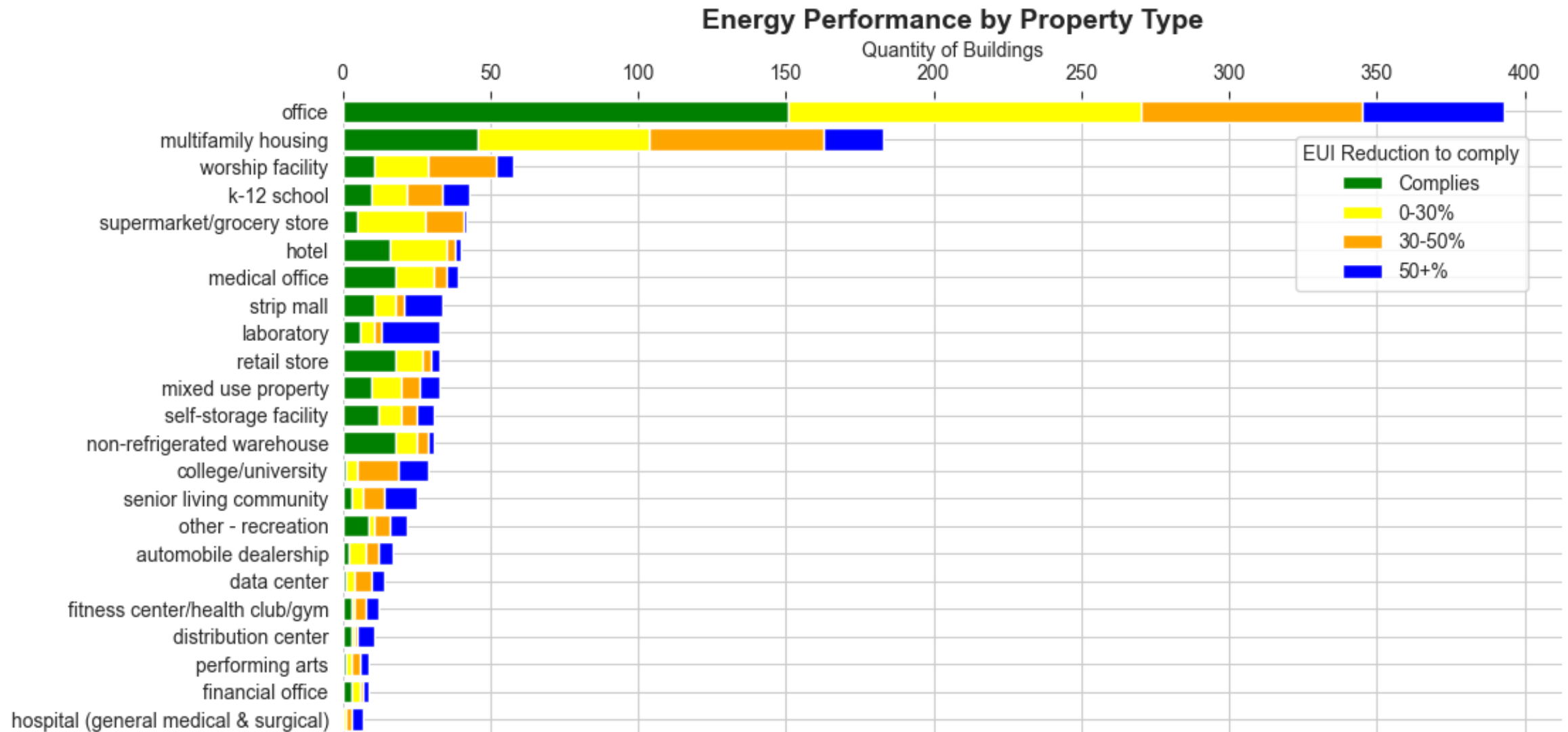
- Regulations establish a final site energy use intensity performance standard for each ENERGY STAR Portfolio Manager property type
 - Area-weighted standards for mixed-use buildings (*a building that contains two or more property types*)
 - Adjustments for parking and heated swimming pools
- Standards set utilizing Zero-Net Carbon Compatible (ZNC) methodology outlined in the [BEPS Technical Report](#)

BEPS Renewable Energy Allowance

- Building performance is measured in **normalized net site energy use intensity (EUI)** which gives credit for the renewable energy generated onsite
- Regulation states that the renewable energy allowance will credit all electricity generated from onsite renewable energy systems.



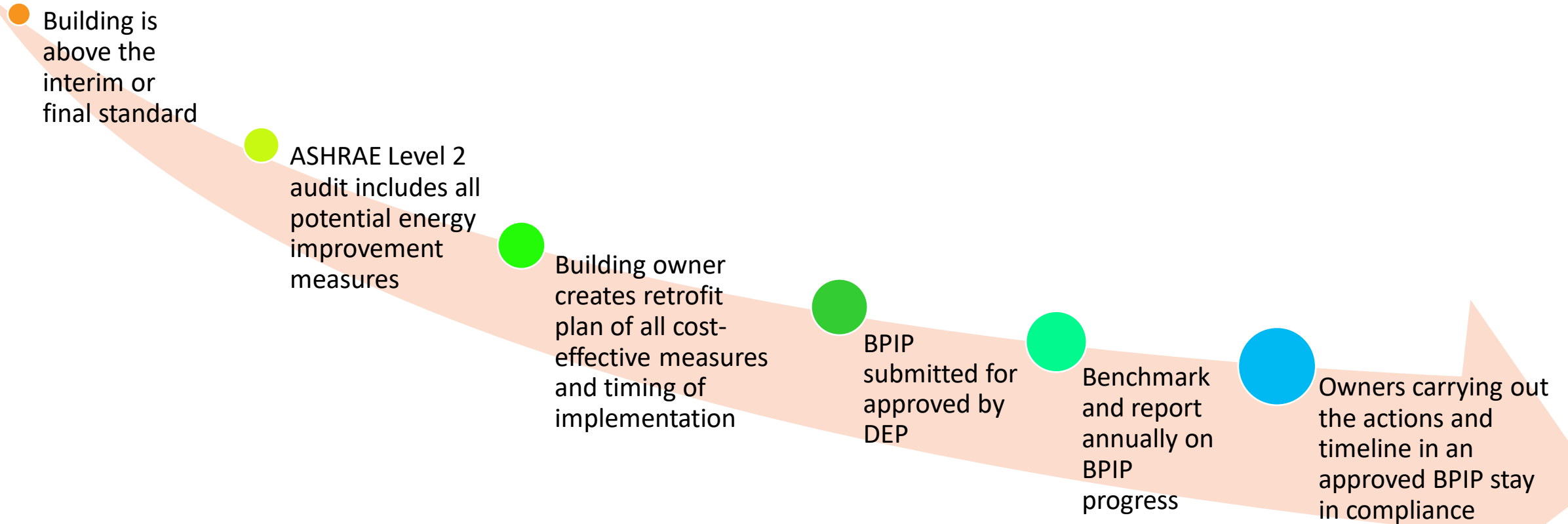
CY 2022 Benchmarking Site EUI vs Proposed Targets by Building Type



Law: Building Performance Improvement Plan (BPIP)

- Purpose of BPIP is to provide flexibility and ensure all buildings are making progress, within economic and technical constraints
 - “If a covered building owner cannot reasonably meet one or more of the applicable interim or final performance standards due to economic infeasibility or other circumstances beyond the owner’s control, the owner may submit a proposed building performance improvement plan to the Department for review and approval by the Director in consultation with the Building Performance Improvement Board.”
- Once approved, building owners files BPIP as a covenant in the County land records
- Owners carrying out the actions and timeline according to an approved BPIP will be compliant with the BEPS law

BPIP Process Overview

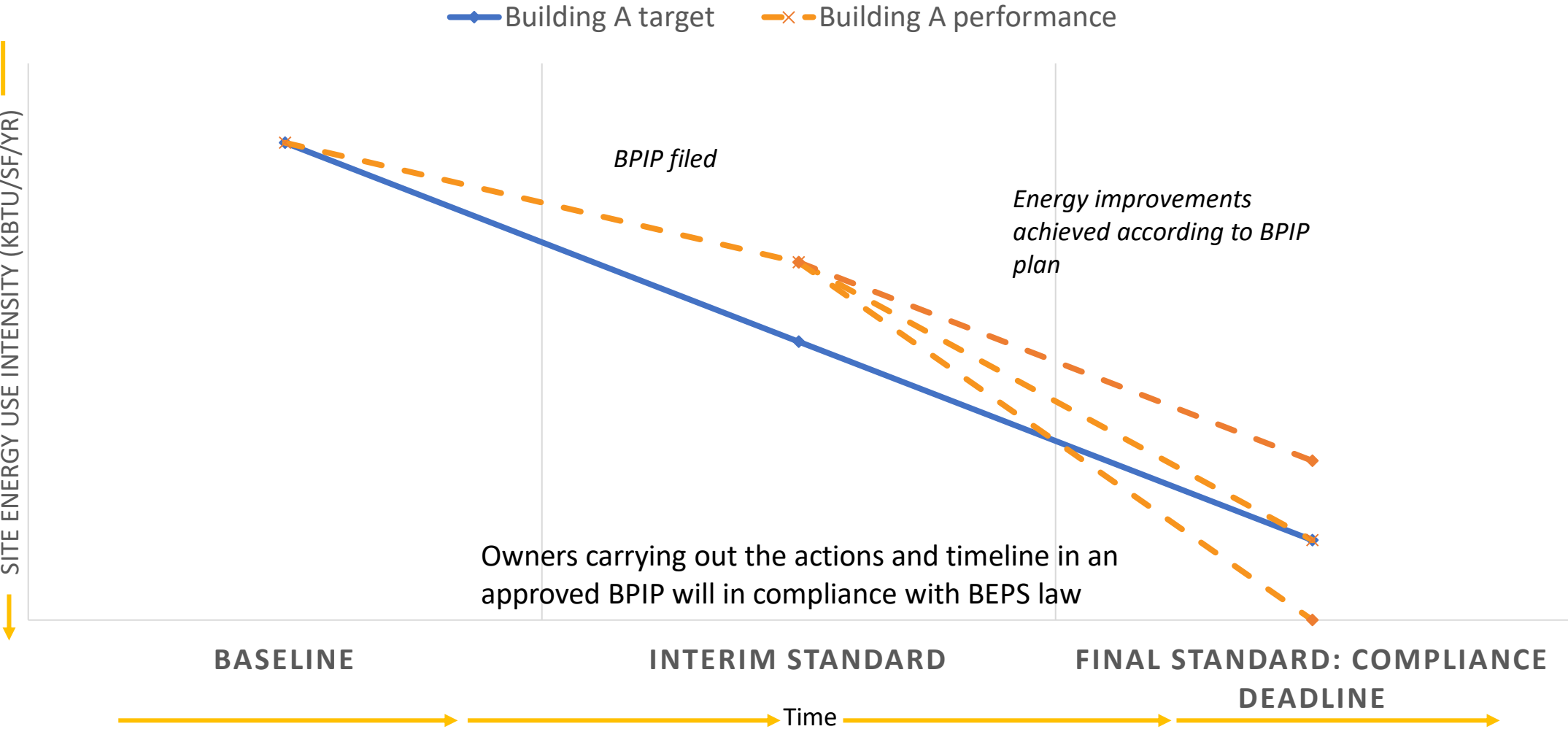


Regulation: Economic Infeasibility / Circumstances Beyond the Owner's Control

- Regulations define economic infeasibility based on the simple payback period of the energy improvement measures that would be required to meet the BEPS:
 - **Under-resourced buildings:** Package of measures with a simple payback of **10 years** or more
 - Qualified affordable housing building
 - Common ownership community
 - Non-profit-owned building
 - Local, small-business-owned building
 - **All other buildings:** Package of measures with a simple payback of **25 years** or more
- Circumstances outside the owner's control may include characteristics inherent to the building or the building's operations or may involve timing events in the building's equipment lifecycles, occupancy, or financing cycles

Building Performance Improvement Plans (BPIPs)

NEED FOR BUILDING PERFORMANCE IMPROVEMENT PLAN



County Penalties

- Any violation of this Article is a Class A violation
- Class A violation ([Section 1-19](#))
 - Civil citations carrying fines of \$500 for the initial offense and \$750 for repeat offenses.
 - [Section 1-20](#) notes “(c) Each day any violation of County law continues is a separate offense”
- Class A violation applies to failure to submit benchmarking reports, failure to meet interim or final BEPS standards, and/or failure to follow through on BPIP

Available Support



County Tax Incentives

Energy performance property tax credit for new and existing buildings



EmPOWER MD

Utility incentives: staff O&M training, building tune ups, equipment



Montgomery County
GreenBank

Your partner for clean energy™

Financing, C-PACE, and technical assistance offered by [Montgomery County Green Bank](#)



Maryland Energy Administration

- Grants, financing, CHP, EV charging, solar, resiliency hubs, (coming) Clean Energy Hub



Federal Incentives

- Tax credits/deductions e.g. 179-D, Investment Tax Credit

Background: MD Climate Solutions Now Act



The MD General Assembly passed the Climate Solutions Now Act in April 2022.

Requires:

- Commercial and multifamily buildings 35,000+ sq ft to begin benchmarking in 2025
- Covered buildings to achieve net-zero direct greenhouse gas emissions by January 1, 2040
- Covered buildings to meet site energy use intensity targets by building type by January 1, 2040

Next steps:

- Draft regulations appeared in the December 15, 2023, edition of the Maryland Register for public comment
- MDE is aiming for final adoption of regulations in 2024

Summary

- Proposed performance standards are **consistent with County climate goals**.
- **Long term timeline** allows time for planning and implementation of efficiency measures.
- Regulations developed with **Building Performance Improvement Board** input.
- **Building Performance Improvement Plan** accommodates challenging situations while assuring emission reductions.
- **Supporting Resources**, including the Montgomery County Green Bank, utility incentives, and State and Federal support, will assist buildings with compliance.
- **Alignment with State BEPS** will get buildings on the right track to meet those requirements.

Where Can I Go For Help?

Resources

- Benchmarking and BEPS helpdesk staffed by DEP – Energy@MontgomeryCountyMD.gov
- Montgomery County [Benchmarking](#) & [BEPS](#) websites
- Maryland Department of Environment [BEPS website](#)
- Green Bank Technical Assistance Program [application](#)

Additional Questions?

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DEPARTMENT OF
**ENVIRONMENTAL
PROTECTION**

Benchmarking/BEPS Law and Regulations

	Established by law...	To be further defined via regulations...
Building Coverage	Commercial & multifamily 25k+ gsf	
Metric	<ul style="list-style-type: none"> • Site energy use intensity (EUI) • Mention of renewable energy allowance towards achieving BEPS targets 	<ul style="list-style-type: none"> • Numerical site EUI performance standard for each building group • Detailed guidance for renewable energy use as a consideration for credit towards BEPS
Timeline	<ul style="list-style-type: none"> • 3 years of benchmarking data to inform a baseline • Long-term targets with interim check ins every 5 years 	Extensions or adjustments for under-resourced buildings like affordable housing, non-profit owners
Alternative Compliance Path	Building Performance Improvement Plan (BPIP) for circumstances outside of building owners' control	<ul style="list-style-type: none"> • Format and elements required in BPIP • Definition of "economic feasibility" and other parameters that would necessitate a BPIP • Extensions or adjustments for under resourced buildings like affordable housing, non-profit owners
Advisory Board	Building Performance Improvement Board established	Report on regulation recommendations created in July 2023

Comparison of State and County BEPS



	MD	Montgomery County
Coverage	35,000+ sq ft	25,000+ sq ft
Benchmarking	Beginning 2025, annually by June 1 deadline, using ENERGY STAR Portfolio Manager	Phased in by building group, annually by June 1 deadline, using ENERGY STAR Portfolio Manager
Direct GHGs	20% reduction by January 1, 2030, net-zero by January 1, 2040	n/a
Site EUI	(Regs propose) trajectory model with baseline in 2025, Interim targets in 2030 and 2035, Final target in 2040. Targets by building type.	Trajectory model with baseline = avg of 2 highest site EUIs out of baseline period, interim target 5 years after baseline (in late 2020s/early 2030s), final target 10 years after baseline (in mid 2030s), phased in by group. Targets by building type.
Renewable Energy Allowance	n/a	Onsite renewable energy, credited towards performance metric
Alternative Compliance Path	Annual “alternative compliance payment” no lower than the social cost of carbon for GHG emissions above the target	Building performance improvement plan
Penalties	Options for civil or administrative penalties for exceeding site EUI target, beginning in 2030 (in additional alternative compliance payments for emissions above the target)	Class A Violation
Available Support	<ul style="list-style-type: none"> • EmPOWER programs • Maryland Energy Administration <ul style="list-style-type: none"> • (Future) Clean Energy Hub • (Future) IRA based funding • Federal tax credits & incentives 	Same as state + <ul style="list-style-type: none"> • MC Green Bank – technical assistance, subsidies, financing • County Tax Credits – property tax credits for improved performance in existing buildings • DEP staff / helpdesk