OFFICE OF THE COUNTY EXECUTIVE

Marc Elrich
County Executive

MEMORANDUM

January 12, 2024

TO: Andrew Friedson, President
Montgomery County Council

FROM: Marc Elrich, County Executive

SUBJECT: Executive Regulation 17-23, Building Energy Performance Standards

Executive Regulation 17-23, Building Energy Performance Standards implements Article 6, Building Energy Use and Benchmarking and Performance Standards, of Chapter 18A, Environmental Sustainability, of the Montgomery County Code. Key regulation items include:

- A final site energy use intensity standard for each building type,
- Parameters for a renewable energy allowance, and
- Requirements for a building performance improvement plan.

This Regulation was published in the County Register on November 1, 2023. Forty-six comments were received during the 30-day comment period.

As a result of the public comments, several changes to the regulations were proposed:

- Created new definitions of *cost effectiveness*, *economic infeasibility*, and *simple payback* to address the economic feasibility of a package of energy improvement measures.
- The regulations now define economic infeasibility and cost-effectiveness within in the context of a package of energy improvement measures and specify that the retrofit plan must consist of a package of cost-effective energy improvement measures that maximizes energy savings.
- Added a new definition of *under resourced buildings* and *local small business* as they have less stringent criteria for economic infeasibility as proposed.
- Addressed aspects of the Portfolio Manager benchmarking tool related to parking structures and swimming pools that alters how these property use types are factored into the final performance standards.
- Under 18A.43A.01.06 Mixed-Use Buildings, B, removed the limit on area-weighting from the three largest property types. Instead, the Department will calculate an area-

weighted final performance standard that averages final performance standards of each building type as calculated by the benchmarking tool, excluding parking.

- 18A.43A.01.08 Renewable Energy Allowance, A. Modified text to clarify that all electricity generated from onsite renewable energy systems will be granted a renewable energy allowance.
- 18A.43A.01.10 Building Performance Improvement Plan Submission removes the provision that building owners must be able to demonstrate definitively that they do not have the financial ability to implement the improvements needed to meet an interim or final performance standard after considering all possible incentives, financing, and cash flow resources available.
- 18A.43A.01.11 BPIP Evaluation by the Department, D was modified to require that the Director must provide the applicant with a written summary of the grounds for denying a submitted BPIP.
- 18A.43A.01.12 Demonstration of Compliance, D was revised to reflect that the building owner must submit a Certification of Completion (of the BPIP terms) to DEP for review and approval. If approved, the County will remove the covenant from the building record.

Please see the attached memo from Jon Monger, Director of DEP, providing an overview of this regulation.

By the terms of the Montgomery County Code, this Regulation must proceed under the Method 2 process for approval. As such, I am transmitting this Regulation to you for your approval.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Marc Elrich
County Executive

Jon Monger
Director

MEMORANDUM

January 10, 2024

TO: Marc Elrich, County Executive

FROM: Jon Monger, Director
Department of Environmental Protection (DEP)

SUBJECT: Executive Regulation 17-23, Building Energy Performance Standards

The Department of Environmental Protection is transmitting the attached Executive Regulation that implements Article 6, Building Energy Use and Benchmarking and Performance Standards, of Chapter 18A, Environmental Sustainability, of the Montgomery County Code, as modified by Bill 16-21.

The Building Energy Use and Benchmarking and Performance Standards law requires covered buildings to benchmark and report energy data to the County by June 1 each year and meet building energy performance requirements. The law stipulated building coverage as commercial and multifamily buildings 25,000 gross square feet and greater, provided timelines for when each covered building group must begin benchmarking and when they must meet interim and final performance standards, created a Building Performance Improvement Board of County-appointed stakeholder representatives, and broadly outlined the option for a building performance improvement plan for building owners that 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.

Per Bill 16-21, this regulation must be adopted under the Method 2 procedure, which requires approval by the County Council. This regulation was published in the County Register on November 1, 2023.

OVERVIEW OF KEY REGULATION ITEMS

This regulation further details several key aspects related to implementation of building energy performance standards:

- Final site energy use intensity performance standards by building type: The site energy use intensity (EUI) final performance standards use the "Zero Net Carbon (ZNC) methodology," a target-setting approach that aligns with the County's climate goals and ultimately will require

energy efficiency and efficient electrification in most building types[1]. A performance standard is proposed for each ENERGY STAR Portfolio Manager property type.

- Renewable Energy Allowance: Buildings will receive full credit for all electricity generated from onsite renewable energy systems, regardless of renewable energy certificate (REC) retention. The inclusion of "onsite renewable energy systems," as opposed to only onsite solar, will allow the program to accommodate new onsite renewable energy generation technologies (e.g., small wind turbines) that may be developed and utilized in the future.

- Building Performance Improvement Plans (BPIPs): Buildings with qualifying scenarios (including economic infeasibility or circumstances outside of owner's control) are eligible to submit BPIPs in lieu of compliance with a performance standard. The regulations define economic infeasibility based on an objective measure of the simple payback period of the energy improvement measures that would be required to meet an interim or final standard.

  For under-resourced buildings, including affordable housing, common ownership communities, non-profit owned buildings, and local, small business owned buildings, economic infeasibility exists when the simple payback of the energy improvement measure package required to meet the interim or final standard is more than 10 years. For all other buildings, economic infeasibility exists when the simple payback of the energy improvement measure package required to meet the interim or final standard is more than 25 years. The determination of the payback period must be made considering all possible incentives and including avoided penalties defined in program guidance at the time of BPIP.

  The regulations stipulate the components required of a BPIP which include:
  - An energy audit by a qualified energy auditor;
  - An assessment of replacement options for existing equipment that is planned to remain in service past the final performance standard date, the feasibility of electrifying fossil fuel combustion equipment, and onsite renewable energy systems; and
  - A retrofit plan identifying the cost-effective energy improvement measures to be implemented, the calendar year or qualifying event during which such energy improvement measures will be made, and the predicted annual energy savings resulting from implementing the energy improvement measures.

  The regulations also address how a BPIP will be evaluated for approval, as well as the process by which a building owner must demonstrate compliance with an approved BPIP through, among other requirements, recording the building performance improvement plan as a covenant in the County land records and annual reporting.

[1] For more information about the ZNC target setting methodology, reference the BEPS Technical Report available at https://www.montgomerycountymd.gov/green/energy/beps.html#bepsreport

BUILDING PERFORMANCE IMPROVEMENT BOARD

The Building Energy Use and Benchmarking and Performance Standards law established a Building Performance Improvement Board[2] made of up 15 voting members appointed by the County to advise DEP on implementation of building energy performance standards. The Board includes members representing utilities; providers of energy, engineering, operations, and building design services; affordable housing; market rate multifamily and commercial buildings; non-profit buildings; finance and investment; and climate advocates.

Beginning in October 2022, the Board began meeting bi-weekly to consider and provide recommendations on BEPS regulations. Though the Board did not always reach consensus on each subject, they produced a report, Building Performance Improvement Board Recommendations on Building Energy Performance Standards Regulations, which serves as the group's recommendations for the County's consideration, and is provided as Enclosure A.

COMMENTS RECEIVED

Pursuant to the process for regulations, this Executive Regulation was published in the November 2023 County Register, with a 30-day comment period. DEP received forty-six comments from a number of residents and industry groups. These comments are provided as Enclosure B to this memo.

Several comments posed questions or requested clarification rather than feedback; DEP responded to each of these. Comments generally provided feedback on the building performance improvement plan process and parameters of economic infeasibility; general cost and equity concerns (particularly for common ownership communities, but also commercial offices and other sectors); the renewable energy allowance; the final site energy use intensity standards (particularly for multifamily, older or class C commercial buildings, life sciences, hospitals, and where electrification is needed to meet the standards); and technical comments about adjustments for certain property uses.

Comments received in support of the regulations cite that BEPS is a key priority of the Climate Action Plan and the standards proposed are necessary and appropriate to make progress towards the County's climate goals, that sufficient flexibility has been provided for fair and equitable implementation, and that BEPS regulations would create many other important health and economic benefits for the County.

As a result of the public comments, several changes were made to the proposed regulations:

- Created new definitions of *cost effectiveness*, *economic infeasibility*, and *simple payback* to address the economic feasibility of a package of energy-efficiency measures.
- The regulations now define economic infeasibility and cost-effectiveness within in the context of a package of energy improvement measures and specify that the retrofit plan must consist of a package of cost-effective energy improvement measures that maximizes energy savings.

[2] Meeting materials available at https://www.montgomerycountymd.gov/green/energy/bpib.html

- Added a new definition of *under resourced buildings* and *local small business* to provide less stringent criteria for economic infeasibility as proposed.
- Addressed aspects of the Portfolio Manager benchmarking tool related to parking structures and swimming pools that alters how these property use types are factored into the final performance standards.
- Under 18A.43A.01.06 Mixed-Use Buildings, B, removed the limit on area-weighting from the three largest property types. Instead, the Department will calculate an area-weighted final performance standard that averages final performance standards of each building type as calculated by the benchmarking tool, excluding parking.
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- 18A.43A.01.12 Demonstration of Compliance, subsection D was revised to reflect that the building owner must submit a Certification of Completion (of the BPIP terms) to DEP for review and approval. If approved, the County will remove the covenant from the building record.

CONCLUSION

Executive Regulation 17-23 is necessary to implement Bill 16-21 enacted by County Council in April 2022. The regulations provide performance standards that align with the Resolution 18-974, Emergency Climate Mobilization adopted by County Council in December 2017 and resulting Climate Action Plan published in June 2021 which seeks to reduce greenhouse gas (GHG) emissions by 80 percent by 2027 and 100 percent by 2035. Buildings account for roughly half of communitywide greenhouse gas emissions, and building performance standards are a key strategy outlined in the County's Climate Action Plan to reduce emissions from commercial and multifamily buildings.

The proposed regulations consider a range of stakeholder opinions, both from the Building Performance Improvement Board and public comments, and provide flexibility for the roughly 1,900 buildings covered by law, which represent a wide swath of sectors, interests, and circumstances.

Enclosures: Enclosure A – Building Performance Improvement Board Recommendations on Building Energy Performance Standards Regulations
Enclosure B – Comments on Regulation from 30 Day Comment Period

ENCLOSURE A

BUILDING PERFORMANCE IMPROVEMENT BOARD RECOMMENDATIONS ON BUILDING ENERGY PERFORMANCE STANDARDS REGULATIONS

Building Performance Improvement Board Recommendations on Building Energy Performance Standards Regulations

August, 2023

Table of Contents

Building Performance Improvement Board Members

- Lawrence Carroll, Nonresidential building owner or manager representative
- Daniel Cleverdon, General public representative
- Mike Dieterich, Provider of energy efficiency, building resilience and/or renewable energy services or consulting representative
- Gregory Goldstein, Technical building design or operations professional representative
- Jill Goodrich, Owner or manager of affordable housing representative
- Luke Lanciano, Owner or Manager of multi-Family residential building containing market-rate units representative
- Adam Landsman, Provider of energy efficiency, building resilience and/or renewable energy services or consulting representative
- Amanda MacVey, General public representative
- Josh McClelland, Local electricity or natural gas utility representative
- Edward Musz, Local electricity or natural gas utility representative
- Sheena Oliver, Nonresidential building owner or manager representative
- Andrew Rivas, Nonprofit building owner or manager representative
- Rhett Tatum, Finance or investment professional representative
- Kevin Walton, Nonprofit organization dedicated to climate action, resiliency, public health, green building, economic development, or building decarbonization representative
- Julie Wolfington, Provider of facilities, mechanical, or similar engineering services representative

Ex Officio Members

- Lindsey Shaw, Department of Environmental Protection designee
- Bryan Bomer, Department of Permitting Services designee
- Dan McHugh (retired), Department of Housing and Community Affairs designee
- Michael Yambrach, Department of General Services designee

Department of Environmental Protection Staff Supporting the Board

- Emily Curley, DEP Staff Liaison
- Stan Edwards
- Lewis Morgante
- Cuiyin Wu

Background

The Building Energy Use Benchmarking and Performance Standards law established a Building Performance Improvement Board (BPIB or the Board) comprised of 15 voting members and Designees of the Department of Environmental Protection, Department of General Services, Department of Housing and Community Affairs, Department of Housing and Community Development, and Department of Permitting Services as ex officio nonvoting members of the Board.

The Board includes representatives of local electricity and natural gas utilities; providers of energy efficiency services and consulting; owners or managers of affordable housing; owners or managers of multi-family residential buildings containing market-rate units; nonresidential building owners or managers; nonprofit building owners or managers; technical building design/operations professionals; providers of facilities, mechanical, or engineering services; commercial/multi-family residential construction finance or investment professionals; and representatives of nonprofit organizations dedicated to climate action.

The first Board members were appointed in September 2022 and began holding bi-weekly meetings in October; these meetings were open to the public. The purpose of the Board is to generally advise the Department of Environmental Protection (herein known as the Department or DEP) on implementation of building energy performance standards (BEPS). As the County Executive must issue Method (2) regulations no later than December 31, 2023, the Board focused on recommendations on regulation topics:

1. Building type groupings;
2. Interim and final site energy use intensity performance standards for each building;
3. Building performance improvement plans;
4. Criteria for the renewable energy allowance in the performance.

Additional issues were addressed within the above topics. These included:

5. Managing unique situations, such as change in ownership or building type;
6. Complementary programs or policies, with particular attention to assistance or accommodations for challenged or under-resourced sectors, such as affordable housing, non-profit organizations, and small businesses.

Links to the agendas, meeting notes, and presentations from all meetings are listed in **Appendix 1** and are available on the BPIB webpage.

Note that many of these topics were discussed before the Maryland Department of Environment (MDE) issued draft regulations on the state's BEPS. As such, the Board generally discussed issues of alignment based on the language in the Climate Solutions Now Act of 2022, but at the time did not yet have MDE's draft regulations to reference.

This report serves as the stakeholder work group's recommendations for the County's consideration. Board recommendations are denoted by areas of consensus and non-consensus within each topic. Please note that participation in the process does not imply full member endorsement of any particular recommendation. The Board members look forward to continued support of the Montgomery County Government on the implementation of BEPS. Montgomery County Government staff are incredibly grateful for the time, energy, and expertise the appointed BPIB members provided during this process.

Building Type Groupings

Per the BEPS law, "building type" means a category of covered buildings subject to the same final performance standards.

(b) *Building types.*

(1) No later than December 31, 2023, the County Executive must issue Method (2) regulations establishing building types for every covered building.

(2) Covered buildings within each building type must have shared characteristics that facilitate the implementation and enforcement of this Article. The Department may define one or more building types to be identical to ENERGY STAR property type categories.

(3) All covered buildings within the same building type category must be subject to the same final performance standards that facilitate the implementation and enforcement of this Article.

The Board considered building type groupings and other related issues as summarized below. Building type groupings were considered over several meetings in November 2022 and December 2022.

Building Type Groups

The Board considered property type groupings from the BEPS Technical Report (which relies on building groups outlined via the Commercial Building Energy Consumption Survey (CBECS) which includes 16 use types), from ENERGY STAR Portfolio Manager (ESPM) which includes 83 different property use types, and a custom grouping that blends CBECS and ESPM. Several points were raised by members on how to generally define building groups:

- Aligning building type groups with both the District of Columbia and the state of Maryland would aid owners with buildings in multiple jurisdictions.
- Using the larger number of groupings in the ESPM would minimize variation within each group, may be easier to identify the appropriate building group, and potentially better align with other jurisdictions.
- Alternatively, too many categories could be confusing and special considerations can be provided for outliers.

General Consensus

- The Board agreed it was important to set the building type groups at the start of BEPS, and not wait for more data to become available with increased benchmarking, as building owners need to have set targets to use for planning.
- The Board reviewed methodology to create BEPS building type groups. The suggested approach for creating building groups is to group buildings with shared characteristics in operations and energy use intensity.
- In creating a reference standard for each group, which serves as the basis for determining final site EUI targets, the suggested approach is to use the local median site energy use intensity (EUI) as the reference standard when available, e.g., where a large enough sample size exists (typically 8+ buildings). Site EUI measures the annual energy use per square foot per year of each building. DEP may reference Maryland-state-wide benchmarking data to supplement where few County buildings have reported. In the absence of a large enough/representative sample locally, the CBECS median site EUI adjusted to local climate, where possible, would be used as a reference.
- Appendix 2 contains board recommended building type groups

Non-Consensus

- Based on previously discussed building group types, some members expressed support for additional sub-groups for types like food sales/food service, bank branches, and automobile dealerships, but generally supported the overall methodology.

Adjustment Factors

The Board discussed criteria that could be applied in certain scenarios to adjust a building's BEPS target. Some believed that adjusting up front would leave savings opportunities on the table, e.g., if a building is operating 24/7, that may be a business need or a major opportunity for savings. However, the BPIP path will be available to owners where "circumstances out of the owner's control" prevent them from meeting the target. This, in general, obviates the need for specifically delineated custom adjustments. Further, without any information about specific circumstances in which a custom adjustment might be requested, it is difficult to create a list of appropriate adjustments.

General Consensus

The conversation settled on providing *limited* adjustment criteria and allowing for flexibility in the regulations such that DEP could add additional adjustment criteria if the benchmarking data or BPIPs point to such a need. These criteria could initially include building age, operating hours, special equipment, and metering configuration (landlord vs. tenant paid).

Mixed-Use Buildings

Some buildings consist of multiple property use types, e.g., a multifamily building with a ground-floor grocery store or an office building that also includes laboratory space. The Board reviewed how other jurisdictions are considering multiple building uses in target setting. The Board considered how mixed-use buildings may be treated in BEPS - both those classified as "mixed-use" in ESPM (i.e., no single property type makes up >50% of the total building GFA) and those that have one primary space >50% of floor area, but with one or more secondary spaces. In support of this, ESPM already provides the gross floor area for multiple property use types. However, at the time of publishing this report, this is currently limited to the three largest use types.

Board members also discussed having an option for building owners to request to include more than 3 property types in the target weighting if there are additional space types present that impact the building's site EUI target.

General Consensus

To address mixed-use buildings, the Board favored utilizing an area-weighted site EUI target based on percentage of gross floor area for each property type in the building multiplied by the site EUI target for each property type. The following items were moved to a vote related to mixed-use building treatment:

- The majority of members voted in favor of providing area-weighted mixed-use targets.
- The majority of members voted in favor of providing area-weighted mixed-use targets for all buildings with secondary spaces (not just those classified as "mixed-use" by ESPM).
- In terms of how to apply mixed-use targets, the majority members voted in favor of using a blended target based on the percentage of Gross Floor Area assigned to the largest three building types, like the Denver methodology, which is the data limit currently imposed by ESPM.

"Other" Buildings

The Board reviewed treatment of "Other" buildings, i.e., those that do not fall within the 80+ available property use categories in ESPM at time of publishing this report.

General Consensus

In terms of methodology for grouping and creating targets for these buildings, the Board generally agreed with DEP's suggested approach of:

- For buildings reported as "Other – Other", DEP will contact the building owner to re-assign the building or place it into a category if not clearly an "Other" CBECS property type. The building owner retains right to appeal the assignment—a process to be clarified in technical guidance.
- For truly "other" buildings, they should be handled on a case-by-case basis, with options provided by DEP, including:
  - Guidance on choosing the most appropriate property use type.
  - Area-weighting as with any mixed-use building if the building contains some uses that allow it.
  - A custom target based on the building's historical energy use and a target consistent with the methodology used for other buildings in the BEPS regulations.

Exemption Criteria: Manufacturing and Industrial

The Board reviewed the exemption criteria from the BEPS law, which is a building in which more than 50% of the total gross floor area is used for:

- Public assembly in a building without walls; or,
- Industrial uses where the majority of energy is consumed for manufacturing, the generation of electric power or district thermal energy to be consumed offsite, or for other process loads; or,
- Transportation, communications, or utility infrastructure.

The Board discussed the definition of "manufacturing" and the criteria by which DEP can verify whether the "majority" of energy is consumed by manufacturing and industrial process loads.

General Consensus

The Board suggested that the County explore further defining manufacturing and industrial uses in regulation or technical guidance and align with existing definitions, such as the State of Maryland's Sales and Use Tax Exemptions for Production Activities or land use definitions in the current County code. Among other "production activities" the State's guidance also includes, "Establishing or maintaining clean rooms or clean zones required by federal laws pertaining to manufacture of drugs, medical devices, or biologics."

The Board also generally advised that if >50% of the floor area is for a manufacturing or industrial use, it is likely that a majority of energy use in the building will be for a related industrial use. If <50% of the gross floor area is used for industrial, DEP could request more documentation such as Building Automation System (BAS) data, electrical in-line drawings, calculations about equipment loads, energy audits, or site visits to demonstrate that the majority of energy use is consumed by an exempted use. The Board recommended that DEP provide additional detail in technical guidance about the type of documentation that may be required.

Interim and Final Site Energy Use Intensity Performance Standards

Per the BEPS law, the Department must develop and implement building energy performance standards for covered buildings. The standards must:

1) Increase the energy efficiency of existing covered buildings and expedite the reduction of greenhouse gas emissions from the building sector;
2) Use normalized net site EUI as a performance metric wherever feasible or net site EUI if the Director determines that normalization is not practical as a performance metric;
3) Account for the renewable energy allowance in the performance metric;
4) Use the benchmarking tool to report building energy performance to the County; and
5) Utilize available data sources and best practices to establish interim and final performance standards.

No later than December 31, 2023, the County Executive must issue Method (2) regulations establishing final performance standards for each building type using the normalized site EUI performance metric wherever feasible or site EUI if the Director determines that normalization is not practical.

Following regulations, the Department must calculate interim performance standards for each covered building with the starting point set at the covered building's performance baseline and continuing to the final performance standard.

The BPIB focused on determining the most appropriate standard to use as a final site EUI target. Site EUI target topics were reviewed over several meetings from December 2022 to February 2023.

Background

The BEPS Technical Report laid out several methodologies for creating a site EUI target:

- **Energy Efficiency (EE) Target**: Sets a target such that all energy end uses are deeply optimized and tuned without impacting occupant use patterns. This target-setting method assumes a reduction from all fuels in the building (electricity and fossil-fuel end uses) such that typical buildings could maintain the use of fossil-fuel burning systems for typical end uses such as space and water heating but would minimize inefficiencies of those systems.
- **Zero Net Carbon Compatible (ZNC) Target**: Sets the target to a level simulating the electrification of fossil-fuel end uses using market-ready technology in an energy efficient building. Electrification is one of the deepest forms of energy efficiency since electric equipment operates at a much higher efficiency than fuel-fired equipment. This target was intended to be most compatible with Zero Net Carbon goals because it implicitly requires the elimination of most on-site fuel burning.
- **EE/ZNC Midpoint Target (Midpoint)**: This target type exemplifies how the site EUI targets can be chosen anywhere along this spectrum between the EE and ZNC targets. A mid-point target was calculated to identify the impact of splitting the difference between the two targets. This target could be achieved using a combination of energy efficiency measures and partial electrification, or electrification of some, but not all, fossil-fuel-driven systems.

The basic calculation methodology is to take the median site EUI for each building type group, estimate the site EUI of the electricity and combustion end-uses for each building type, and then to apply a standard reduction to each end-use for each building type. An example calculation to derive each target can be seen on page 186 in the BEPS Technical Report.

The Board primarily focused on the target-setting methodology rather than the site EUI numbers because the recommendation to form additional building type groups requires recalculation of targets based on the median for each new building type group. BEPS Technical Report sample targets are shown below for the most common building types:

	2019 Median			EE Target			ZNC - Target		
Performance Standards by Building Type [Site kBTU/SF]	Gas EUI	Elec EUI	**Site EUI**	Gas EUI	Elec EUI	**Site EUI**	Gas EUI	Elec EUI	**Site EUI**
Multifamily	38	24	**62**	33	20	**55**	0	35	**35**
Office	0	62	**63**	0	53	**53**	0	53	**53**
Warehouse and storag	0	19	**19**	0	16	**16**	0	16	**16**
Mercantile Retail (other	16	46	**62**	14	39	**53**	0	45	**45**
Lodging	38	49	**87**	34	41	**76**	0	58	**58**

Because the ZNC target projects efficiency gains from electrification, building types with the most on-site combustion today require the largest reductions to reach the ZNC target. For example, multifamily buildings had a median EUI of 62 in 2019, with 38 kBtu/sq ft representing gas end uses and 24 kBtu/sq ft representing electricity end uses. As a result, multifamily buildings were projected to need a 44% reduction on average to reach the ZNC target of 35. Offices, on the other hand, reported very low gas use in 2019. As a result, the ZNC target assumes less site EUI savings potential since there are few/no systems to convert from gas to electric. As a result, office buildings were projected to need a 16% reduction on average to meet the ZNC target of 53.

Much of the Board's discussion centered on the technical and economic challenges of combustion-dependent building types to rapidly electrify, as summarized below.

Interaction with State Goals

Initial discussions revolved around how the County EUI targets might align with the Climate Solutions Now Act of 2022, which requires that the Maryland Department of Environment (MDE) develop Building Energy Performance Standards. MDE must develop standards for buildings that achieve a 20% reduction in net-direct GHGs by 2030 (as compared with 2025 levels for average buildings of similar construction), net-zero direct GHGs by 2040, and to-be-determined site EUI targets (at the time of this discussion. Proposed site EUI targets have subsequently been issued). Three options were discussed:

- **No/little alignment**: County BEPS operates independently from the state program and building owners track requirements for both laws.
- **Some alignment**: Create County BEPS targets to prompt significant progress towards state's 2040 net zero direct GHG requirements. Methodology may differ in areas like building groups, reference standards, and target-setting.
- **Full alignment**: County adopts state site EUI targets such that County buildings meet targets earlier than the state deadline based on the compliance years in County BEPS.

General Consensus

Members agreed on an approach of "some alignment" for now and revisiting once state site EUI targets are finalized, given the many unknowns.

Site EUI Targets

The discussion on recommendations for the final EUI targets was wide-ranging. Discussion focused on the three potential targets described in the BEPS Technical Report, the Energy Efficiency (EE) Target, Zero-Net Carbon Compatible (ZNC) Target, and the EE/ZNC Midpoint (Midpoint) Target.

Member opinions on each of the target options are summarized below. Additional board member feedback on the individual targets can be found on slides 10 – 12 in the presentation for the February 1, 2023 meeting, as well as in the meeting notes from 12/7/2022 to 2/1/2023.

The Board initially began discussing the ZNC target, as this approach is most aligned with spurring net-direct GHG reductions. Discussion on the ZNC target was generally split amongst members. Several members expressed support for the ZNC target, which included:

- Achievable with existing HVAC technology, technologies are available to address building envelope efficiency in cost-effective ways,
- Technologies are available to install additional controls in tenant spaces (e.g., smart thermostats),
- Increased energy efficiency can help free up electrical capacity and may allow owners to avoid electrical upgrades and be more affordable, efficiency projects can provide real benefits to tenants both from reduced utility bills and from improved comfort and reliability,
- The BPIP and Renewable Energy Allowance can be used to offset challenges from a disconnect between feasibility on paper and that in the real world,
- Alignment with State climate goals,
- BEPS is a function the county-declared a climate emergency, so a zero-net carbon target is best in keeping with the spirit and intent of overall county goals.

Concerns with the ZNC target included:

- The real-world technical feasibility of a ZNC target may not always align with savings potential in buildings,
- The challenges with multifamily or leased buildings where tenant behavior is often difficult to predict and control and there is no payback to the owner for efficiency upgrades when tenants pay utility bills,
- Challenges to buildings with a large amount of natural gas heating,
- Electrification retrofits often have very high up-front cost and long return on investment (ROI) periods,
- Buildings where HVAC equipment has been replaced recently could make electrification or replacement technically and economically infeasible,
- Misalignment between high-level bids on the work that would need to be done and the actual costs,
- Additional costs that may be needed to upgrade electrical systems to support additional electric equipment in a building, and
- The limited penalty amounts for not complying compared to the actual costs of the upgrade.

The Energy Efficiency (EE) target also raised both positive and negative points. Points mentioned in favor included:

- This is the easiest to achieve while still being aggressive: it can be met by many buildings that make smart and targeted investments in the technology available over the next decade,
- Most projects will have a good return on investment, and

- This target may be better suited for multifamily buildings as there is the potential for the costs of more demanding targets to be transferred to tenants via rent increases.

Points mentioned in opposition to using the EE target included:

- This does not push building owners far enough by allowing replacement of gas equipment with more efficient gas equipment versus electric heat pumps,
- Creates an equity issue for LMI households in developing a county policy that encourages continued use of fossil gas given the higher efficiency of heat pumps and utility rate forecasts of gas versus electricity, and
- The technology being employed to meet just this degree of energy efficiency may be obsolete relatively soon.

Specific discussion of the EE/ZNC midpoint was generally more limited. However, points mentioned in favor include:

- Serves as a compromise between the two options,
- Most existing buildings could meet this goal within reason, and
- The target is generally in agreement with a pathway that aligns with the state BEPS targets that are set several years past the final target BEPS date.

Points mentioned in opposition to the EE/ZNC midpoint include:

- This would be more difficult for older multi-family buildings to reach (similar argument to the ZNC target),
- May potentially make it challenging to maintain building ownership (similar argument to the ZNC target), and
- Questions on whether this does align enough with State goals.

In addition, multifamily housing was most often identified as a challenging building type for setting EUI goals. For example, a building may not reach its overall EUI if the residents control their own energy use for heating and cooling. In situations where there is a central system, the cost of the upgrades to reduce energy use may be transferred by the building owner to the individual renters and potentially challenge housing affordability. However, also noted were the available technologies to regulate tenant energy use even in multifamily housing with individual controls, and that incentives need to be available such that the costs of meeting the EUI targets do not substantially adversely affect rent.

There were extensive and detailed discussions on the appropriate EUI target for BEPS, held over 5 meetings. Site EUI targets evinced the greatest diversity of opinion of any topic covered by the Board.

For this reason, rather than a formal vote to produce a single final decision, the Board agreed to take an informal poll of the members' views, with the reporting of the poll results reflecting the diversity of opinion.

Some members supported one EUI target across all building types, while others suggested that some exceptions should be made based on specific building types.

The EUI options are listed in order of most to least support:

ZNC Target for all or most building types, exceptions as noted below – 8 total

- 6 - All building types
- 1 - EE/ZNC for multifamily buildings
- 1 - EE for multifamily buildings

EE/ZNC Midpoint Target for all or most building types, exceptions as noted below – 6 total

- 5 - All building types
- 1 - EE for multifamily and houses of worship; ZNC for County-owned buildings (courthouse, library, public order and safety, etc.); custom targets for laboratories and manufacturing/industrial facilities

EE Target for all building types – 1 total

Incentives

The Board noted that incentives would play a substantial role in addressing the economic feasibility of buildings meeting the EUI targets. These included federal tax credits such as those provided in the Inflation Reduction Act, County property tax credits, Montgomery County Green Bank financing and technical assistance, the Maryland Energy Administration incentives and low-interest loans, and EmPOWER Maryland incentives. Currently, EmPOWER focuses on the reduction of energy consumption, with the rebate structure designed to incentivize energy saving measures, equipment, and projects for both electric and gas customers. Starting in 2024, the EmPOWER framework will transition to focus on reducing GHG emissions, enabling the rebate structure to provide incentives for electrification and fuel-switching in addition to the conventional EmPOWER incentive offerings.

The Board recommends a range of incentive options that may be geared towards large building-wide projects, as well as modular, prescriptive measures. The combination of the two types of incentives would most effectively help building owners with differing investment criteria make the best energy efficiency investments. Multifamily is a key property use type where incentives help building owners improve a building's performance while limiting what costs would eventually be passed through to residents to make these projects work.

The Board voiced support for additional programs that do not exist today but would be helpful to building owners in reaching the BEPS targets. Those include owners' representative services that provide project management, help securing bids, technical support, and vendor coordination; significant incentives and technical support for affordable housing and moderately priced dwelling units (MPDUs) within market-rate properties; targeted electrification pilots for buildings that are hard to electrify, such as those with central boilers or steam systems.

One member noted that it is equitable for tenants of under-resourced buildings to reap the benefits of more energy efficient, modernized, and better functioning equipment, which would provide a healthier environment for the tenants. Ideally, funding and technical resources would be provided for under-resourced buildings. One solution to address the equity issue would be to make utility incentive funds need-based, though this would require additional effort to define and identify those who fall into that category. There will be a need to ensure that all potential applicants, including those falling into a needs-based category, have equal access to information and ability to apply for incentives. This member suggested that the County create some type of tax, perhaps based on property values or carbon footprint, to fund building improvements to multifamily and other under resourced buildings.

Under-Resourced Buildings

The BEPS law notes that "The Department may establish additional criteria recommended by the Building Performance Improvement Board for qualified affordable housing, non-profit buildings, and other buildings as appropriate."

In terms of additional building types to be considered under-resourced, one member recommended that common-ownership communities (like condominium and co-op buildings) should also be considered as a unique building type when it comes to BEPS. There is no data source to help determine if these buildings meet the naturally occurring affordable housing criteria, and they often have trouble accessing utility incentives, C-PACE financing, and County property tax credits. Though condo boards are not registered 501(c) non-profit entities, they are not profit-seeking enterprises and condos face significant technical and financial challenges in complying with BEPS. Individually metered condo and multifamily buildings must go through residential utility programs, which are then very difficult to coordinate amongst all residents. As condo buildings have no shared tax burden, they cannot utilize C-PACE or apply for commercial property tax credits.

One member noted that the law's wording of "other buildings as appropriate" suggests that additional criteria should be established to not just consider whole groups/types of buildings as under-resourced, but to also apply the criteria on a case-by-case basis to any building.

Another member suggested that offering an alternative compliance pathway for these buildings is preferable to providing them with a target adjustment or more time to comply. A forgiving alternative compliance path that allows under-resourced building owners to avoid penalties and show good faith by implementing feasible, cost-effective measures that are tied with the building's lifecycle, would be best.

No consensus was reached on how to define this building type or how they should be dealt with under BEPS.

Building Performance Improvement Plans (BPIPs)

Per the BEPS law, 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, based on guidelines established by regulation, the owner may submit a proposed building performance improvement plan to the Department for review and approval by the DEP Director in consultation with the Building Performance Improvement Board.

A building performance improvement plan must include:

1) documentation of economic infeasibility or other circumstances beyond the owner's control such that interim or final performance standards are not met;
2) a list of potential improvement measures, including engineering calculations of energy savings and a cost-benefit analysis of each potential improvement measure;
3) a plan and timeline for achieving energy improvements to the building's performance that will provide cost-effective energy savings based on guidelines established by regulation, including the

estimated savings to be realized by implementing all the cost-effective measures identified in the plan; and

4) procedures for correcting any noncompliance or deviation from the plan.

The owner must submit a building performance improvement plan to the Department at least 90 days before the deadline for submitting documentation of compliance with interim or final performance standards. If, after consulting with the Building Performance Improvement Board, the Director approves the building performance improvement plan, the owner must record the building performance improvement plan as a covenant in the County land records and deliver a certified copy of the recorded plan to the Department. After the DEP Director receives the certified copy of the recorded plan, the covered building will be deemed to be in compliance with the applicable interim or final performance standards as long as the owner fulfills the terms of the building performance improvement plan within the timeline specified in the plan.

The law also requires disclosure of covered building benchmarking and performance standards information at point of sale. Before a buyer signs a contract for the sale of a covered building, the seller must disclose to the prospective buyer that the building is subject to building energy performance standards, transfer the benchmarking property record and data verification documentation to the prospective buyer and provide the prospective buyer the building's performance baseline, interim and final performance standards, and building performance improvement plan, if applicable.

The Board considered several aspects of a building performance improvement plan: qualifying scenarios, timing, procedures for documenting a list of potential improvement measures, and verifying plan implementation. BPIP topics were reviewed over several meetings from February through April 2023.

Qualifying Scenarios

A BPIP can be pursued 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, based on guidelines established by regulation.

Circumstances Outside the Owner's Control

The Board considered qualifying scenarios that would constitute "circumstances outside the owner's control."

General Consensus

Members generally agreed with the qualifying scenarios adopted in other jurisdictions and discussed appropriate documentation that would be needed to demonstrate each situation.

Scenario	Recommended Documentation / Notes
Planning for end of equipment system life	Detail the equipment and age of each system, compare vs standard service life chart

Planning for major renovation / redevelopment	Detailed and specific documentation, with timelines, should be required as demolition can be "planned" for years in advance. Documentation could include documentation showing lease expiration dates; proof that leases are not being renewed; zoning change application; site plan approvals; design drawings.
Historic building	Proof of historic designation; detailed description of the unique limitations placed on the building and how that prevents it from meeting the EUI target
Benchmarking waiver (including financial distress)	Outlined in benchmarking waiver request. Would confer a one-year delay for the benchmarking period waived (e.g., waiver for interim BEPS year benchmarking means you have one extra year to meet the target)
Natural or man-made disasters	Documentation of disaster (e.g., fire, flooding) and impacts to building operations and finances
Change of building ownership where the new building owner will have difficulty in complying on time	Proof of sale of building and narrative explaining the new building owner's inability to comply on time (e.g., new owner purchases the building in 2028 and previous building owner did not make progress towards 2028 target).
Pending demolition	A benchmarking waiver is only available for the calendar year in which demo permit is received and would confer a 1-year delay for any period the waiver is granted; Demolition permit or documentation of planned, future demolition (members noted that there should be a set timeframe in which demolition would be a qualifying scenario, such as within the BEPS performance period or within 3 years of the interim or final standard.)
Planning for financing cycles	Description of the funding strategy that will be pursued to implement interim and final EEMs and/or retrofits to meet the savings target. Description should provide an estimate of the projected funding sources (e.g., property operating income, reserves, private financing, public financing) needed and the estimated costs to be incurred to meet the requirements. Though other jurisdictions only provide financing cycles as a qualifying scenario for affordable housing, one member noted that this can and should apply to market rate buildings as well.
Innovative approach to energy efficiency	Narrative from architect/engineer detailing the benefits of the innovation, the novelty of the project, demonstrate that the EEM has not been widely implemented by the local building industry, and why delays are anticipated and/or cannot be avoided.
Other reasons considered by DEP on a case-by-case basis	Could include limitations to buildings on a steam loop or other district system, or systems difficult to electrify. To be considered in conjunction with the Board

Economic Infeasibility

Economic infeasibility could occur because a building study shows that site EUI target is not technically feasible, when improvement measures to meet the target have high cost and low benefits, or when the owner lacks the needed capital to make improvements.

Members generally agreed that adopting an objective metric for economic infeasibility would be preferable to more subjective criteria. For example, these could include discount rate, savings to investment ratio, return on investment – with clear instructions on how to calculate and what to include in costs and savings. Several members noted, however, that the numbers used to determine these figures can be adjusted to meet specific criteria based on the building owner's goals.

Though buildings keep funds in reserves or operating budgets, members discussed that larger projects typically require financing and long-range planning to complete. Buildings need to continue to stay profitable and banks typically look at the financial benefit of the project in evaluating the financing.

One member noted that several other variables should be considered in determining "economic infeasibility," including:

- The time-value of money: dollars invested in year 1 are going to be worth more than the dollars from savings realized in years 2, 5 or 10.
- Impact on the cash flow and terminal value using a standard, 10-year discounted cash flow analysis, the capital costs, savings from reduced energy usage and incentives. To the extent that the capital investment associated with energy efficiency improvements doesn't pay for itself once the return requirements accounted for (the internal rate of return/discount rate) then the investor will have to pay less for the building. The same principles will apply to a building that is not being purchased—a real estate investment is still going to require a return.
- Recognize that larger improvements are likely to be financed and that the infeasibility analysis should account for the cost of that debt.
- Inflation will erode the value of the future savings dollars.
- The energy savings may not actually translate into reduced expenses or increased rents for the owner. In an owner-occupied building or building where the owner directly pays all the utility costs, the savings calculation is more direct. In a triple net lease, an owner should theoretically be able to charge more for rent when utility costs are lower, but this is not a guarantee. A full-service lease is going to lie somewhere in the middle.

General Consensus

Though members stated a general preference for a more objective measure of financial infeasibility, no concrete recommendation or consensus emerged on what kind of measure or how to calculate it.

The board generally agreed that while economic infeasibility is a crucial measure for BPIP applicability, it is very difficult to come up with one objective metric that would demonstrate economic infeasibility for all buildings. As such, there was general support to maintain flexibility and consider applications on a case-by-case basis. As applications are received and reviewed (in conjunction with the Board), best-practices can be established in technical guidance over time.

Timeline / Application Process

Though the BEPS law stipulates that the owner must submit a proposed BPIP to the Department at least 90 days before the deadline for submitting documentation of compliance with interim or final performance standards, the Board discussed overall phasing of the BPIP process.

Because BPIPs are only allowed under some qualifying scenarios (as discussed above), the Board discussed whether a pre-approval step should be added. For instance, a building owner would submit documentation outlining their qualifying scenario and receive approval to utilize the BPIP for BEPS compliance.

Similarly, though proposed BPIPs must be submitted at least 90 days before the interim or final performance standard deadline, members pointed out that taking the necessary steps to create a BPIP proposal – completing a building assessment, documenting potential improvement measures, including engineering calculations of energy savings and a cost-benefit analysis of each potential improvement measure, creating a plan and timeline for achieving energy improvements – may take a lot of time to complete. The suggestion was made that if a BPIP proposal is submitted close to the deadline, the owner should be able to include in the proposal work that has already been implemented to lower the building EUI, as an example of good faith efforts to comply with the BEPS law.

The suggestion was also made to include a thorough building data verification as part of the BPIP or BPIP application. For example, if a building is not accurately inputting their floor area in ESPM, their reported EUI could be significantly affected.

General Consensus
For the County's BPIP process, members generally agreed that having a two-part process would be beneficial. For instance, a building owner would submit documentation outlining their qualifying scenario and receive approval to utilize the BPIP pathway for BEPS compliance. This approach would provide more certainty for building owners that they qualify for the BPIP pathway before an owner undertakes more costly and in-depth audits or assessments of the building. It would also help to ensure that building owners start early enough to meet the BPIP submission deadline.

Areas of Non-Consensus
Though members generally agreed that a two-part process would make sense, they were split on whether to recommend creating a deadline by which owners would need to apply for a BPIP and document their qualifying scenario. Some thought that an application deadline would be beneficial to owners so that they do not delay and are then left without time to plan. Others noted that some circumstances (e.g., change in ownership, economic infeasibility) may make it difficult to apply by a set deadline. Deadlines can also create bottlenecks among the building professional community if all covered building owners are seeking an audit or assistance at one time.

DEP staff noted that creating an additional BPIP application deadline in regulations may not be possible since the enabling law does not make mention of a required application date. As such, regulations could suggest but not require that owners apply early to qualify for a BPIP, perhaps with one of the June 1st benchmarking deadlines a year or two in advance of the building's interim or final target deadline.

Documenting Improvement Measures

Per the BEPS law, a Building Performance Improvement Plan must contain a "list of potential improvement measures, including energy savings & cost-benefit analysis."

The Board reviewed BPIP documentation requirements from other jurisdictions which include:

- **ASHRAE Level 2 Audit** – examines the building energy systems in detail to document potential energy-efficiency improvements with costs and paybacks of each measure. An ASHRAE Level 2 Audit is typically required by all jurisdictions with a custom/prescriptive BEPS compliance pathway.

- **Retrocommissioning (RCx) plan** – RCx is the process of fine-tuning building systems to ensure a building is running at its optimal performance. RCx is accepted by St. Louis in lieu of an audit once per building during the first two BEPS cycles.
- **Operations and maintenance (O&M) plan** – establishes schedules and best practices for building and system operations and maintenance. An O&M plan is required for all buildings in Washington State and for those seeking a timeline adjustment in Denver.

General Consensus
The ASHRAE Level 2 Audit requirements were generally considered reasonable and appropriate as the central requirement for documenting efficiency measures in a proposed BPIP. Members generally felt that an audit completed within a few years (e.g., 2-3 years before the BPIP proposal submission) could be used to create the BPIP.

Areas of Non-Consensus
Though members generally supported retrocommissioning as an important process, they were somewhat split on whether or how to require it as part of the BPIP. A few members noted that continuous commissioning / monitoring-based commissioning (MBCx) is preferable to retrocommissioning since it ensures that the building is not only tuned but also monitored and corrected as needed. One member recommended that only MBCx be accepted. Other members noted that RCx/MBCx is not applicable to some building types like multifamily or condo buildings where there are many unitized systems that are not connected to a building automation system (BAS), where central systems like steam boilers cannot be modulated/adjusted virtually, or where the BAS is basic or old, so should not be a required part of the BPIP. Other members noted that retrocommissioning would be documented as one of the efficiency measures during an ASHRAE Level 2 Audit if building conditions warrant it.

Similarly, though members generally felt that O&M plans are useful, there was no consensus on whether or how to require it as part of the BPIP. Some members again noted that O&M changes to save energy could be documented as part of the audit, rather than as a separate plan. Others felt that providing owners an O&M checklist to review would be more useful than each owner having to invent their own plan. One member noted that routine O&M should be standard procedure for most buildings and would be a good idea to require to ensure that best practices are documented and being followed by staff. Another noted that while ASHRAE provides a helpful framework and elements of an O&M plan, it is far more useful to have a plan that is not so technical and easier for facilities staff to read, understand, and implement. They recommended that if an O&M plan were to be required, it would be preferable to allow some flexibility in terms of the format and required elements.

Cost Effectiveness for Measures

In terms of cost effectiveness, it was noted that a BPIP can provide allowances for buildings where meeting the target is technically or financially infeasible. As part of this calculation, there should be a requirement for cost estimates for proposed BPIP measures to include financial measures like incentives or rebates that would help defray the costs.

Challenges were identified for determining the cost effectiveness for more complex projects, like electrification, which require in-depth engineering before going to bid to vendors. Further, given the level effort needed, vendors may be wary of providing detailed bids for proposed work or for which they are

unlikely to win the project. Nonetheless, it is important to focus on the real cost compared to a rough average or industry estimate.

In response to this challenge, members discussed that the proposed BPIP could commit to: a) measures that the building owner is clearly able to do and finance, and b) additional engineering and cost studies of some more complex measures so that the BPIP is more of a flexible, living document that changes as more information becomes available.

Regarding under-resourced buildings that submit a BPIB, one member had a concern about extending their timeline or allowing for only a small number of measures to be completed to be in compliance. This member noted that if a building is in a position where it needs an extensive number of upgrades to be more energy efficient, that likely means it has a degraded HVAC system, and therefore poor indoor air quality and high operating costs as well. Degraded HVAC systems are more prone to equipment failures which lead to uncomfortable, and more importantly, unhealthy air for tenants. In winter and summer especially, these conditions can be harmful for tenants. Delaying upgrades for these buildings (or allowing them to avoid deep retrofits) means these tenants must endure continued poor conditions and higher operating costs (e.g., utility bills if those are being passed to the tenant) for longer than resourced buildings that make sufficient upgrades on time. This is not equitable.

General Consensus
Similar to the discussion on economic infeasibility, the board generally agreed that while cost effectiveness is a crucial measure for BPIP execution, it is very difficult to come up with one objective metric that would demonstrate cost effectiveness for all buildings. As such, there was general support to maintain flexibility and consider measures on a case-by-case basis. As applications are received and reviewed (in conjunction with the Board), best practices can be established over time.

Verifying Implementation

The BEPS law says that if, after consulting with the Building Performance Improvement Board, the DEP Director approves the building performance improvement plan, the owner must record the building performance improvement plan as a covenant in the County land records and deliver a certified copy of the recorded plan to the Department. Further, “the covered building will be deemed to be in compliance with the applicable interim or final performance standards as long as the owner fulfills the terms of the building performance improvement plan within the timeline specified in the plan.”

However, the law does not provide detail on the approach to verify that the plan was implemented. The Board spent a few meetings discussing the best approach to verifying that the measures in the BPIP had been completed according to the Plan. The Board considered two primary methods of verifying that the owner has fulfilled the terms of the BPIP: performance monitoring and tracking measure installation.

Members in favor of the performance metric noted that tracking performance proves what was done and may be easier to track for DEP and building owners, as the data would come from the annual benchmarking report that is already being submitted. Additionally, it is in the owner’s best interest to ensure that savings persist after they have paid to install new efficiency measures to capture cost savings, improve the payback, and potentially capture property tax incentives. Those against this approach noted that the annual

benchmarking reports, which would be used to evaluate performance, would take a minimum of 18 months to assess as they need a full year of energy use and then are not reported until the following June.

Those in favor of tracking measure implementation noted that the BPIP is meant for building owners struggling to meet performance targets, and the BPIP is intended to be a measures-based alternative. Proving that measures were installed shows that they are trying to reduce energy use, but then are not penalized if post-implementation savings are not as high as predicted. The suggestion was made to allow owners to provide documentation that is easily accessible, like a signed contract, final paid invoice, or final approval permit to demonstrate that a measure was implemented. DEP noted that, in addition to demonstrated energy reductions, the County's Energy Efficient Property Tax Credit requires similar documentation to substantiate that an efficiency measure was installed, indicating that this is already a validated procedure. The County could also retain the option to "audit" measures or complete a site visit to verify in some circumstances. One member suggested that building owners with BPIPs could be required to report annually on installed measures, potentially by June 1st with the benchmarking reports. Those against using a measure implementation approach argued that a performance-based approach is more in line with the spirit of the BEPS law and that focusing only on installing measures could leave savings on the table. There was also concern regarding whether DEP had the administrative capacity to carry out these verification options.

As there was not a clear consensus the verification approach, the breakdown of support for each option is shown below. The majority of members supported an approach primarily centered around tracking measure installations, with many preferring additional performance monitoring to help verify that measures were implemented per the plan.

1) **Performance monitoring**: Recalculate a new site EUI target that would result if all of the agreed-upon measures in the plan were completed, and then track annual benchmarking data to see if the building has met (or come near) the new site EUI target. Members preferring this option: **0**
2) **Tracking measure installation**: Owners report back to verify that each agreed-upon measure was implemented according to the BPIP timeline. Members preferring this option: **4**
    - One member that primarily supported option 2 would also be supportive of option 4 if it was not punitive for building owners.
3) **Performance monitoring with measure installation tracking if target not met**: Recalculate a new site EUI target that would result if the agreed-upon measures in the plan were completed and track annual benchmarking data to see if the building has met the new site EUI target. If the building did not meet the new target, the owner could provide proof that all measures were installed and then demonstrate compliance. Members preferring this option: **1**
4) **Tracking measure installation with performance monitoring to verify**: Owners would report when agreed-upon measures were implemented, with DEP monitoring performance via annual benchmarking reports based on expected savings. If performance varied significantly (e.g., site EUI was 25% higher than expected), owners would need to re-validate their EEM (to assure that the measure was installed correctly, operated as designed, not overridden, etc.). Members preferring this option: **7**

Two **(2)** members were in support of whatever option provides the most flexibility for building owners, between options 2, 3, and 4. One of these members noted that if options 3 and 4 are overly complicated,

they would prefer option 2 as a more straight-forward approach. One **(1)** member did not provide a recommendation.

Renewable Energy Allowance (REA)

Per the BEPS law, DEP must develop and implement building energy performance standards for covered buildings that must account for a renewable energy allowance in the performance metric. Further, the law defines normalized net site energy as the site energy use by the covered building normalized for weather and other characteristics within the limits of the capabilities of the benchmarking tool and normalized for other factors as determined by the Department minus energy generated from the renewable energy allowance.

Though the law is clear about inclusion of a renewable energy allowance, regulations must provide additional detail to outline types of renewable energy and ownership structures that are allowed to be counted towards the performance metric and BEPS compliance.

The Board considered several aspects of a renewable energy allowance as they relate both to onsite renewable energy options and offsite renewable energy options. REA topics were reviewed over several meetings from April to June 2023.

Background

DEP had engaged ICF to complete a report titled Allowance for Renewable Energy Technical Report and Recommendations. This report provides information on determining how a renewable energy allowance should be defined and implemented within BEPS regulations and had involved several stakeholder feedback sessions to solicit input on a range of REA options.

The Board was provided this report to review, and attention was called to stakeholder consensus that had emerged from that report.

Onsite Renewable Energy Considerations

Members were asked their opinion on whether onsite renewable energy should be considered as part of the REA. General discussion included remarks that BEPS is about building performance and that overly crediting renewable energy discourages energy efficiency. Though renewable energy is a “clean” source, the cleanest source is the avoided energy that was not wasted through inefficiency, so there is a concern on how to appropriately balance efficiency while encouraging renewable energy use in the BEPS program.

General Consensus

The majority of members were in favor of including onsite renewable energy in the REA, with two abstaining. As such, the Board continued discussions on the renewable energy allowance (REA) and questions about how to credit on-site renewable energy and opted to do polling on related questions:

Renewable Energy Produced vs Consumed

On the question of whether owners should get credit for renewable energy produced or consumed, members were polled for the following options:

- Option 1 (ICF report stakeholder consensus): All onsite electricity generated will receive allowance, including exported power: **7**
- Option 2: Credit only for renewable energy used onsite, does not include exported power: **4**

General Consensus: A majority of those that responded were in favor of providing a REA irrespective of how much of their power output is consumed at the building or exported to the local utility. However, a concern was noted that overly crediting renewable energy may discourage energy efficiency. Though renewable energy is a "clean" source, the cleanest source is the avoided energy that was not wasted through inefficiency, so it is important to appropriately balance efficiency while encouraging renewable energy use.

Renewable Energy Credit (REC) Retention

Members had differing views about the question of allowing REA regardless of REC retention. Members were particularly concerned about the potential to double-count benefits when selling RECs and getting credit towards compliance and that those RECs could also be used to help others achieve compliance if offsite renewable energy is provided an allowance.

Another issue the board discussed is ensuring that the REA and REC treatment aligns with the International Green Construction Code. Potential changes to the Green Code may require level 1, 2, and 3 alterations to meet code at the time of alteration. If these buildings are then required to add or procure renewable energy, DEP/DPS should carefully coordinate to ensure constancy in requirements and determine whether undertaking required actions for code compliance should also provide credit under BEPS.

Those more in favor of providing a credit regardless of REC retention noted that it is beneficial to give building owners every reason to deploy solar. Additionally, some building types like worship facilities and other non-profits and condo buildings may be less financially able to retain/retire RECs because of their challenge in obtaining tax credits to offset the cost of installations.

On the question of whether owners need to retain RECs to get a REA, members polled for the following options:

- Option 1 (ICF report stakeholder consensus): Allowance should apply even if onsite RECs are sold or transferred: **7**
- Option 2: Owner must retain RECs to take credit: **3**
- Option 3: Some building types (e.g., under-resourced buildings) may count onsite energy regardless of REC retention, while others must retain RECs for credit: **1**

General Consensus: A majority of those that responded were in favor of providing a REA regardless of REC retention.

Fractional Onsite Renewable Energy Allowance

A few members pointed out the difficult balance of incentivizing onsite renewable development but not at the cost of neglecting energy efficiency upgrades. One proposal to value energy efficiency more highly than renewable energy is to provide less than full credit for onsite renewable energy (e.g., 1 kBtu of onsite renewable energy = 0.5 REA).

Others felt that many owners will still have a lot of efficiency work to do and that fully crediting onsite renewable energy would help to incentivize local renewable energy development and provide additional co-benefits like decarbonizing the electricity supply, supporting the local economy, and supporting local industry and installers

One member proposed that an REA could be allowed to help fulfill a certain portion of the BEPS target but not be used as the sole strategy to reach the site EUI target (e.g., if a building needs to reduce site EUI by 20, the REA allowed could be capped at 20% to reduce the net site EUI by 4, but the rest would need to come from building efficiency improvements).

On the question of what kind of allowance should be given for onsite renewable energy, members polled for the following options:

- Full credit (1 kBtu = 1 REA): **9**
- More than full credit (e.g., 1 kBtu = 1.05 REA): **0**
- Less than full credit (e.g., 1 kBtu = 0.50 REA): **2**

General Consensus: A majority of the Board supported full credit for onsite renewable energy.

Offsite Renewable Energy Considerations

Members were asked their opinion on whether offsite renewable energy should be considered as part of the REA.

A member cautioned that credit should not be provided for renewable energy that is a result of overall utility grid decarbonization, rather the renewable energy allowance should apply to private systems that are additional to the utility grid.

Another member cautioned possible equity issues with financially capable entities that could buy RECs as a way out of compliance while those with limited funds would not have access to this pathway.

One member noted that giving some credit for offsite renewable energy could keep more buildings out of the BPIP pathway, which is likely to be administratively burdensome. If they are nearing the performance target, an offsite REA would provide some flexibility for the owner to secure offsite RECs to close the gap.

Others remarked that tracking can be complicated. For instance, a tenant may purchase a contract with a solar provider for community solar. In this case, the consumption provided from the solar may not be reflected in the aggregated electricity feed and tracking/reporting the purchased amount can be very difficult to summarize and report.

In reference to whether offsite renewable should be considered in the REA, polling from the Board members reflected:

- **Option 1 – Yes: 10** *(some with caveats)*
    - One member suggested that if offsite renewables are included, they should be counted only after all building efficiency measures have been maximized.

    - Another member suggested that offsite renewable could be included, but that building owner would need to go through the BPIP compliance pathway.
    - One member wanted to highlight that offsite renewable energy options should include both electric and gas options in the REA.
- **Option 2 – No: 3**

General Consensus: A majority of members were in support of providing some kind of offsite renewable energy allowance.

After this initial poll, the Board discussed additional considerations for offsite renewable energy, including technology options, location, and contract terms and types – and whether those considerations are the same or different for under-resourced buildings, as well as whether there should be a cap/limit on how much offsite renewables should be allowed to be credited towards BEPS compliance.

Types of Acceptable Offsite Sources

Related to offsite renewable technologies, members discussed various options that included: only solar and wind, aligning with the technologies eligible under the Maryland RPS requirements, or adding to the technologies eligible under the Maryland RPS requirements by including renewable natural gas/agricultural waste as a methane source.

An argument was made for using the Maryland RPS, as this would be the simplest criteria. Also, as that list could change over time, the county's approved list would then also update as the views changed of what should be included. One member suggested that limiting the list to solar and wind would serve to put pressure on industry to expand this resource.

On the question of what energy sources should be eligible for REA credit if offsite renewables are allowed, members polled for the following options:

- **Option 1**: All Maryland RPS Tier one sources count as qualified renewable energy sources (includes solar, wind, qualifying biomass, methane from a landfill or wastewater treatment plant, poultry litter-to-energy, waste-to-energy, and refuse–derived fuel): **7**
    - If the County aligns with RPS Tier one sources, it would also need to credit any source that is added to the RPS Tier one sources in the future as amended by the State. Similarly, it could no longer credit any sources that were removed from the list.
- **Option 2:** Alignment with Maryland's RPS Tier 1 sources, with exclusions for combustion (e.g., Qualifying Biomass, Methane from a landfill or wastewater treatment plant, Poultry litter-to-energy, Waste-to-energy, and Refuse–derived fuel): **0**
- **Option 3:** County-developed list of qualified renewable energy sources (e.g., only solar and wind): **5**
    - Three members preferred a more limited list (e.g., only solar and wind)
    - Two members preferred an expanded list beyond Maryland RPS to include MRETS credits (certified renewable natural gas credits).
- **Abstain: 1**

General Consensus: Slight majority in favor of aligning with Maryland RPS Tier 1 sources.

Location Criteria

RECs can be obtained from anywhere in the country (e.g., wind farm in Iowa) but many policies (e.g., RPS) place narrower geographic boundaries (e.g., in the same electricity market or state) on what RECs will count towards policy achievement. The County will need to determine what, if any, limits to place on the location of the projects creating RECs that are eligible for the REA.

Related to locational boundaries of offsite renewable energy, members discussed various options that included: Maryland and/or Montgomery County only, or some gradient of allowable locations that would value renewable energy generated closer to Montgomery County more highly than renewable energy generated further away—but still providing some value greater than zero for offsite renewable energy.

As many members were previously in favor of using the list of Maryland RPS sources to determine what resources/technologies qualify for REA, members discussed also accepting whatever the RPS limits for locational boundaries. The Maryland RPS requires that renewable energy credits must be derived from a source that is located in the PJM Region. Renewable energy credits may come from outside the area described above if the electricity is delivered into the PJM Region.

Like onsite renewable energy, potential changes to the Green Code may require level 1, 2, and 3 alterations to meet code at the time of alteration. If these buildings are then required to add or procure renewable energy, DEP/DPS should carefully coordinate to ensure constancy in requirements and determine whether doing required actions for code compliance should be provided credit under BEPS. DPS staff noted that the code is likely to allow offsite renewable energy within PJM to count on a one-to-one basis and RECS from outside the PJM are likely to be discounted.

A member emphasized that encouraging more in-county and instate renewable development is a political decision to support local renewable development and economic activity. Another member added that members should be clear on the intention of using offsite RECs and to move forward with options that serves the intent.

In terms of sources and location, the general consensus of allowing Tier 1 sources within a defined service territory aligns with existing County code, Sec. 52-14. Fuel-energy tax which describes fuel tax exemptions from renewable sources:

(4) The tax does not apply to energy that is generated from a renewable source located:

(A) in the County and either used on the site where it is generated or subject to a net energy metering agreement (as defined in state law) with a public utility; or

(B) in the same electric service territory in Maryland as the subscriber using the energy and subject to a virtual net energy metering agreement (as defined in state law) with a public utility.

Renewable source means a "Tier 1 renewable source" as defined in Section 7-701(l) of the Public Utilities Article of the Maryland Code or any successor provision.

General Consensus:

Members were generally supportive of aligning with the Maryland RPS and/or the code locational boundaries and credit rather than creating a custom location factor for BEPS.

Rather than focusing on placing a location factor on RECs, members discussed instead placing a cap on the amount of off-site renewable energy that would be allowed to be credited toward the site EUI. See Limiting the Offsite Renewable Energy Allowance.

Procurement Criteria

RECs can be also procured in many ways. The contract type and duration can influence the type of benefits being conveyed. The County needs to determine what kind of contract types and durations are eligible for REA.

The Board preferred either having no procurement factor (especially if a cap is placed on offsite renewable energy) or aligning with International Energy Conservation Code (IECC) procurement factors.

It was noted that the procurement factors in the energy code could change when the building codes are updated in future 3-year cycles, further complicating that option. In general, members felt that a simple approach would be appreciated by building owners and managers.

Some initial discussion about transaction types/contract length occurred, specifically around what happens to renewable energy contracts when a building is sold, and the due diligence required on renewable energy contracts during the sale of a building as it relates to BEPS compliance.

Members also discussed contract length of REC purchases. With performance only being evaluated at the interim and final performance period, they discussed what period RECs purchases should cover – whether just the 12-month period being benchmarked, or a longer duration. Most members agreed that REC purchases should cover the full calendar year being reported on and assessed for interim and final targets.

Some members were concerned that the law, as written, does not require building owners to maintain the interim site EUI between the interim and final period, nor after the final target. As such, owners could purchase a large number of RECs for the 12-month interim and final performance years to meet their EUI targets without first reducing site EUI through increased energy efficiency. They cited this as another reason that the offsite renewable energy allowance should be capped.

General Consensus

Rather than focusing on placing a procurement factor on RECs, members discussed instead placing a cap on the amount of off-site renewable energy that would be allowed to be credited toward the site EUI. See Limiting the Offsite Renewable Energy Allowance. The Board generally supported either having no procurement factor (especially if a cap is placed on offsite renewable energy) or aligning with procurement factors established in the energy code.

Limiting the Offsite Renewable Energy Allowance

A few members again pointed out the balance of crediting offsite renewable energy investments at the expense of energy efficiency upgrades.

Rather than a complex set of location and procurement factors, members instead discussed placing a cap on the amount of off-site renewable energy that would be allowed to be credited toward the site EUI. This issue was raised, in part, due to there being currently a number of buildings that cover all their electricity use with offsite RECs. Such buildings might be able to use these RECs in an REA to offset all their electricity and not need to do any work to decrease their EUI.

Members were basically split on whether to put a cap on offsite renewable energy:

- **In favor of a cap**: 5
    - Two members advocated for a 10% cap
    - One member supported a "low" cap
    - Two members supported a cap but include flexibility based on the specific case
- **In favor of no cap**: 5

Several members who were opposed to a cap thought that if there was a cap, then there should be flexibility on the location or type of REC that was included.

General Consensus:
The Board generally agreed that if offsite renewable energy is only given a small allowance, there may not be much need to carefully track offsite renewable energy contracts and locations outside of what Portfolio Manager already captures. For instance, if the offsite REA is capped at 10%, the County may opt to be less strict on verifying details about these contracts.

A cap was generally favored instead of a discount on certain type of RECs as it seemed simpler and more straight forward, but members argued for flexibility to modify the cap in some circumstances, especially for under-resourced buildings or if an owner is pursuing a BPIP.

Under-Resourced Buildings

Lower-resourced building owners almost certainly sell SRECs if they host solar energy generation onsite to boost onsite renewable energy economics and may be more likely to engage in a solar PPA (no up-front cost of installation). These owners may also not have the means to purchase offsite green power (where there are no incentives or payback like for efficiency or on-site renewable projects). One member reiterated that paying for RECs does not provide any payback or add value to the building compared to similar investments in energy efficiency and reiterated that efficiency should be the first strategy to comply.

Stakeholders engaged via the ICF report suggested the allocation of additional resources for under resourced buildings, such as technical assistance, and options for additional pathways to support their BEPS compliance.

Members supported maximum flexibility for under-resourced buildings, perhaps exempting them from a cap on an off-site REA and reiterated the need for incentives that help offset the up-front costs of fuel switching measures.

Appendix 1: BPIB Agendas, Presentations, and Notes

Agenda, full meeting minutes, and each meeting's presentation are available below. Items are grouped according to the primary topic for each meeting.

BEPS background

- October 12, 2022: Agenda | Minutes | Presentation
- October 26, 2022: Agenda | Minutes | Presentation

Building type groupings

- November 9, 2022: Agenda | Minutes | Presentation
- November 16, 2022: Agenda | Minutes | Presentation

Interim and final site energy use intensity performance standards for each building type

- December 7, 2022: Agenda | Minutes | Presentation
- December 21, 2022: Agenda | Minutes | Presentation
- January 4, 2023: Agenda | Minutes | Presentation
- January 18, 2023: Agenda | Minutes | Presentation
- February 1, 2023: Agenda | Minutes | Presentation

Building performance improvement plans

- February 15, 2023: Agenda | Minutes | Presentation
- March 1, 2023: Agenda | Minutes | Presentation
- March 15, 2023: Agenda | Minutes | Presentation
- April 12, 2023: Agenda | Minutes | Presentation
- April 26, 2023: Agenda | Minutes | Presentation
-

Criteria for the renewable energy allowance in the performance metric

- April 12, 2023: Agenda | Minutes | Presentation
- April 26, 2023: Agenda | Minutes | Presentation
- May 10, 2023: Agenda | Minutes | Presentation
- June 7, 2023: Agenda | Minutes | Presentation

Appendix 2: Building Type Final Group Recommendations

The Board voted on a final recommended building grouping, including addressing special cases as relayed in the discussions. The majority of Board members approved the final building group type to be recommended to the County (Table 1).

BEPS Draft Group Type	Portfolio Manager Type
K-12 School	K-12 School
College/University	College/University
Other Education	Adult Education Other – Education Vocational School
Preschool/Daycare	Pre-school/Daycare
Grocery	Supermarket/Grocery Store Wholesale Club/Supercenter
Food Sales & Service	Food Sales Food Service
Bar/Nightclub	Bar/Nightclub
Restaurant	Other - Restaurant/Bar Restaurant
Healthcare Inpatient	Hospital (General Medical & Surgical) Other - Specialty Hospital
Healthcare Outpatient	Ambulatory Surgical Center Medical Office Outpatient Rehab/Physical Therapy Urgent Care/Clinic/Other Outpatient Veterinary Office
Lodging	Hotel Other - Lodging/Residential Residence Hall/Dormitory
Healthcare Lodging	Senior Living Community Residential Care Facility
Enclosed Malls	Enclosed Mall
Strip Shopping Centers	Lifestyle Center Other – Mall Strip Mall
Other Retail	Automobile Dealership Retail Store
Multifamily	Multifamily Housing
Bank Branch	Bank Branch
Office	Financial Office Office

BEPS Draft Group Type	Portfolio Manager Type
Data Center	Data Center
Laboratory	Laboratory
Manufacturing/ Industrial Plant	Manufacturing/Industrial Plant
Other	Other
Recreation	Bowling Alley Fitness Center/Health Club/Gym Ice/Curling Rink Other – Recreation Swimming Pool
Entertainment/Public Assembly	Convention Center Social/Meeting Hall Indoor Arena Stadium (3 types) Movie Theater Museum Other - Entertainment/Public Assembly Performing Arts
Library	Library
Courthouse	Courthouse
Public Order and Safety	Fire Station Other – Public Services Police Station
Prison/Incarceration	Prison/Incarceration
Religious Worship	Worship Facility
Service	Other – Services Personal Services (Health/beauty, dry cleaning, etc) Repair Services (vehicle, shoe, locksmith, etc)
Warehouse and Storage	Distribution Center Non-Refrigerated Warehouse Self-Storage
Refrigerated Warehouse	Refrigerated Warehouse

ENCLOSURE B

COMMENTS ON REGULATION FROM 30 DAY PUBLIC COMMENT PERIOD

From: Clark Maier <CMaier@LPC.com>
Sent: Wednesday, November 1, 2023 4:57 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: MCER NO. 17-23: Building Energy Performance Standards Regulation

[EXTERNAL EMAIL]

What provisions will be made to lessen the adverse impact the current "remote work" environment is having on buildings/landlords whose Energy Star scores are falling because of the lack of physical occupancy in their buildings? Energy Star's current metrics do not give any consideration or allowance to buildings' Energy Star scores even though the buildings must, by contract lease, maintain heating/cooling levels regardless of the number of employees that show up during office hours, yet the vastly reduced numbers physical at the building over a given period is counted AGAINST the building's Energy Star score.

LINCOLN PROPERTY COMPANY

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TOP WORK PLACES 2019-2023 The Washington Post

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From: Energy
Sent: Thursday, November 2, 2023 8:55 AM
To: Clark Maier <CMaier@LPC.com>
Subject: RE: MCER NO. 17-23: Building Energy Performance Standards Regulation

Hi Clark,

Thank you for your comment.

One point of clarification is that while Washington, DC is using ENERGY STAR Score as the BEPS metric that buildings must achieve each cycle, Montgomery County's BEPS utilizes a long-term site energy use intensity standard.

While we instruct benchmarkers to keep their ENERGY STAR Portfolio Manager inputs current and accurate as far as hours of operation and workers on the man shift, site EUI is not recalculated/adjusted

based on any of these factors, it merely reflects annual energy use on site, per gross square foot of building area.

Thanks,

Emily Curley, LEED AP O+M, CEM
Building Energy Performance Programs Manager
Montgomery County Dept. of Environmental Protection
office: 240-777-7707

From: Steffens, Todd <TSteffens@loringengineers.com>
Sent: Wednesday, November 1, 2023 8:09 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: MCER NO. 17-23

[EXTERNAL EMAIL]

This proposed legislation does not specify any penalties for non-compliance. What happens if a building owner does not submit any building energy performance improvement plans and makes no effort to reduce building Site Energy Use Intensity?

Todd Steffens, PE, CEA, CBCP, LEED AP
Vice President
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On Nov 2, 2023, at 9:29 AM, Energy <Energy@montgomerycountymd.gov> wrote:

Hi Todd,

Thanks for your comment. The regulations build on the code, ARTICLE 6. BUILDING ENERGY USE BENCHMARKING AND PERFORMANCE STANDARDS, which specifies some aspects of the law, including Penalties and Enforcement. Any violation of this Article is a Class A violation.

I hope that helps. If you have further comments based on this information please feel free to submit additional comments.

Thank you,

Emily Curley, LEED AP O+M, CEM
Building Energy Performance Programs Manager
Montgomery County Dept. of Environmental Protection
office: 240-777-7707

From: Steffens, Todd <TSteffens@loringengineers.com>
Sent: Thursday, November 2, 2023 9:57 AM
To: Energy <Energy@montgomerycountymd.gov>
Subject: Re: MCER NO. 17-23

[EXTERNAL EMAIL]

Thanks for the clarification. From reading this, it appears that the maximum fine for a civil class A infraction is $750? In dealing with Washington DC's BEPS regulations, they have fines of $10/SF which can add up to significant fine amounts. In these buildings we already have problems attempting to convince owners to make the necessary improvements to bring their buildings into compliance, and these fines are in the hundreds of thousands of dollars.

With fines of $750, how would we build a business case for building owners in Montgomery County to invest the millions of dollars in energy improvement projects necessary for their buildings to come into compliance with this proposed regulation?

Sent from my iPhone

Todd Steffens, PE, CEA, CBCP, LEED AP
Vice President
D. 202-742-1446
M. 703-915-3465
TSteffens@loringengineers.com
Loring Consulting Engineers, Inc.

From: Meghan McAvoy <MMcAvoy@ghtltd.com>
Sent: Wednesday, November 15, 2023 10:08 AM
To: Energy <Energy@montgomerycountymd.gov>
Cc: Jeffrey Salay <JSalay@ghtltd.com>
Subject: MoCo BEPS - Public Comments

[EXTERNAL EMAIL]

Hi Montgomery County,

Upon reviewing the Executive Regulations for BEPS implementation, GHT has the following comments:

1. If a project's energy performance is better than the final standard at the time of baseline setting but the energy use increases at the interim, would they still be considered in compliance if the EUI remains lower than the standard? (i.e. a commercial office building has a site EUI of 50 in the baseline year but that increases to 54 during the interim year – the project is still below the final standard of 55 but the energy usage is not a straight-line reduction)
    a. Would a project need to submit a BPIP in the above situation?
2. Confirm Gross Floor Area – is the definition aligned with ENERGY STAR?
3. For mixed use buildings, is it acceptable to use inside (rentable square footage) as opposed to wall-to-wall measurements for the gross floor area of different space types within the building?
4. Deadlines
    a. The first interim date is listed as December 31, 2028 and the regulations indicate that BPIPs are due 90 or more days before the deadline. Building owners will not receive bills through end of December until January.
        i. Is the deadline for the BPIP in September with estimated performance for end of the year?
        ii. Is the deadline the typical benchmarking report date that would include full prior year data?
        iii. Is interim reporting a separate process from annual benchmarking? Or, for compliant teams, would submission of annual benchmarking be enough to demonstrate compliance?
5. Is kBTU based on calendar year? Previous 12 months? Based on multiple years?
6. What methodology will be used to weather-normalize the site EUI and what is the timeline for weather-normalization?
7. Onsite renewable energy allowance – Does the property owner need to retain environmental attributes associated with the energy produced onsite in order for it to count toward the allowance?
    a. May they sell RECs associated with the generation?
    b. Are PPAs or leasing agreements permitted?
8. The regulation indicates standards will be demonstrated using the benchmarking tool. Is that Energy Star Portfolio Manager?

Regards,

GHT Limited
Meghan McAvoy, LEED AP BD+C, O+M, WELL AP, Fitwel Amb., ActiveScore AP, TRUE Advisor
(she/her)

Director of Sustainable Programs
703.243.1200 office | 703.248.3801 direct

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From: Energy
Sent: Tuesday, November 28, 2023 9:39 AM
To: Meghan McAvoy <MMcAvoy@ghtltd.com>
Cc: Jeffrey Salay <JSalay@ghtltd.com>
Subject: RE: MoCo BEPS - Public Comments

Hi Meghan,

Thank you for your comments and sorry for the delay. Answers to your questions:

If a project's energy performance is better than the final standard at the time of baseline setting but the energy use increases at the interim, would they still be considered in compliance if the EUI remains lower than the standard? (i.e. a commercial office building has a site EUI of 50 in the baseline year but that increases to 54 during the interim year – the project is still below the final standard of 55 but the energy usage is not a straight-line reduction) Yes, they would still be in compliance at the interim period

   a. Would a project need to submit a BPIP in the above situation? No
2. Confirm Gross Floor Area – is the definition aligned with ENERGY STAR? Yes

3. For mixed use buildings, is it acceptable to use inside (rentable square footage) as opposed to wall-to-wall measurements for the gross floor area of different space types within the building? For reporting mixed-use buildings, the building's total gross floor area must still be reported such that the property types reported sum up to the building's total GFA.
4. Deadlines
    a. The first interim date is listed as December 31, 2028 and the regulations indicate that BPIPs are due 90 or more days before the deadline. Building owners will not receive bills through end of December until January.
        i. Is the deadline for the BPIP in September with estimated performance for end of the year? The deadline is "at least 90 days before **the deadline for submitting documentation of compliance with interim or final performance standards**." So the deadline would be ~March 1 (90 days before the June 1 reporting deadline).
        ii. Is the deadline the typical benchmarking report date that would include full prior year data?
        iii. Is interim reporting a separate process from annual benchmarking? Or, for compliant teams, would submission of annual benchmarking be enough to demonstrate compliance? Submission of annual benchmarking will be used to gauge compliance with interim and final targets.
5. Is kBTU based on calendar year? Previous 12 months? Based on multiple years? kBtu and other performance metrics are based on a full calendar year of reported benchmarking data. For instance, benchmarking reports due June 1, 2023 summarize CY 2022 kBtu and other metrics.
6. What methodology will be used to weather-normalize the site EUI and what is the timeline for weather-normalization? DEP will rely on ENERGY STAR Portfolio Manager tool provide weather-normalized site energy use and weather normalized site EUI. This is done automatically within Portfolio Manager and is available as part of the metrics that DEP collects from benchmarking reports.
7. Onsite renewable energy allowance – Does the property owner need to retain environmental attributes associated with the energy produced onsite in order for it to count toward the allowance? No
    a. May they sell RECs associated with the generation? Yes
    b. Are PPAs or leasing agreements permitted? Yes, provided that the renewable energy is physically located on the building or building site
8. The regulation indicates standards will be demonstrated using the benchmarking tool. Is that Energy Star Portfolio Manager? Yes

Emily Curley, LEED AP O+M, CEM
Building Energy Performance Programs Manager
Montgomery County Dept. of Environmental Protection
office: 240-777-7707

From: William Castelli <wcastelli@rwllaw.com>
Sent: Wednesday, November 15, 2023 4:59 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: benchmarking

[EXTERNAL EMAIL]

I had a quick question regarding the benchmarking regulation 17-23.

In setting final performance standards, the regulations cite both Automobile/vehicle dealership as well as "vehicle repair services."

Does the automobile/vehicle dealership include the showroom as well as service bays for car repairs and the "vehicle repair services" is just an auto repair service with no sales?

Thanks,

Bill

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From: Energy
Sent: Monday, November 20, 2023 8:17 AM
To: William Castelli <wcastelli@rwllaw.com>
Subject: RE: benchmarking

Hi Bill,

The building types are based on ENERGY STAR Portfolio Manager's definitions of these properties.

EPA defines these as follows:

- **Vehicle Dealership:** Vehicle Dealership refers to buildings used for the sale of new or used light-, medium- and heavy-duty cars and trucks. Gross Floor Area should include all space within the building(s), including sales floors, offices, conference rooms, **vehicle service areas**, parts storage areas, waiting rooms, staff break rooms, restrooms, hallways, and stairwells. Gross Floor Area should not include any exterior spaces such as vehicle parking areas.

- **Repair Services (Vehicle, Shoe, Locksmith, etc.):** Repair Services refers to buildings in which some type of repair service is provided. Examples include vehicle service or repair shops, shoe repair, jewelry repair, locksmiths, etc. Gross Floor Area should include all space within the

building(s), including sales floors, repair areas, workshops, offices, parts storage areas, waiting rooms, staff break rooms, hallways, and stairwells.

Since the “vehicle dealership” space already includes vehicle service areas, then yes, the “repair services” would just be an auto repair service with no significant sales. (Note, however, that even the repair services definition says to include “sales floors” but this would be more of the visitor greeting/cashier area in that case).

Hope that helps. Thanks,

Emily Curley, LEED AP O+M, CEM
Building Energy Performance Programs Manager
Montgomery County Dept. of Environmental Protection
office: 240-777-7707

From: Elizabeth Greenberg <elizabeth.greenberg@gmail.com>
Sent: Saturday, November 18, 2023 12:25 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: MCER No. 17-23 Proposed Montgomery County Department of Environmental Protection Regulation Building Energy Performance Standards Regulation

[EXTERNAL EMAIL]

Thank you for providing an opportunity to comment on MCER No. 17-23, Building Energy Performance Standards Regulation. The proposed standards state that a building can be released from some of the requirements by demonstrating economic infeasibility and to do this, building owners must "be able to demonstrate definitively that they do not have the financial ability to implement the improvements needed to meet an interim or final performance standard after considering all possible incentives, financing, and cash flow resources available. The Director may also require third party validation of economic infeasibility before BPIP approval."

This requirement to definitively prove financial inability to implement required changes seems to have been written with the assumption that a building has one owner or a small number of owners. There is no guidance offered on how a condominium, where each apartment has a different owner, would be able to show financial hardship. Condominium management and boards do not have any way to collect information on the financial standing of all their owners to determine how large a special assessment (a special assessment would almost certainly be needed to meet the requirements of this regulation) would create an economic hardship for owners. Collecting and documenting the income and assets available to each unit owner to demonstrate what is and is not affordable is infeasible and not supported under any current condominium laws or regulations. How do you propose that condominiums demonstrate financial hardship?

According to the EPA, households living in multi-family homes use half the energy of households living in single-family homes. Additionally, multi-family homes are often located in areas that are walkable and have good public transit, such as Friendship Village where I live, which leads to further savings in energy use.

https://www.epa.gov/sites/default/files/2014-03/documents/location_efficiency_btu.pdf

Given the lower energy usage of households residing in multi-family buildings, it is not clear to me why this legislation is targeted at multi-family households and not single-family homes which use significantly more energy. I think that the county should be encouraging people to move to multi-family buildings in transit-friendly neighborhoods, rather than discouraging them by placing additional cost burdens upon the residential buildings that according to the EPA are currently most climate friendly.

If you continue with this policy of targeting multi-family buildings, I urge you to put a reasonable cap on the amount of expenditure per unit required by each condominium building to meet these standards and require buildings to demonstrate financial inability to implement improvements (something that it will likely be impossible for condominium buildings to demonstrate as discussed earlier) only if they want to go below that cap. When thinking about this cap, I also urge you to keep in mind that many residents of older multi-family buildings in Montgomery County are retired people on fixed incomes or low and moderate income people who have chosen to move to an older multi-family building because they cannot afford a single-family house or a condominium in a new building that was constructed to meet current energy standards. Displacing them in the name of greater energy efficiency from a building that is already more energy efficient than a single-family home would be particularly insensitive of a county that has stated many times that expanding the supply of affordable housing is a high priority.

Elizabeth Greenberg

4515 Willard Ave. Apt. 2004S

Chevy Chase, MD 20815

240-687-7313

elizabeth.greenberg@gmail.com

From: David Churchill <david@davidchurchill.com>
Sent: Sunday, November 19, 2023 12:06 AM
To: Energy <Energy@montgomerycountymd.gov>
Cc: Lattner, Edward <Edward.Lattner@montgomerycountymd.gov>
Subject: Comment on MCER NO. 17-23

[EXTERNAL EMAIL]

To: Department of Environmental Protection

Dear Emily Curley,

I read through the proposed regulation on building performance standards and believe that there is a major flaw with the proposed wording of 18A.43A.01.10 (B-1.a)

"for economic infeasibility, building owners must be able to demonstrate definitively that they do not have the financial ability to implement the improvements needed to meet an interim or final performance standard after considering all possible incentives, financing, and cash flow resources available. The Director may also require third-party validation of economic infeasibility before BPIP approval."

My comment is that it would be an impossible task to consider "all possible incentives, financing, and cash flow resources available."

While it would be beneficial to research incentives, possibilities might include a multitude of federal programs, the entire sector of philanthropy, and the sum of assets of all owners in the condominium. However the scope of this task as stated is unreasonable and probably impossible. Building's management should not have to quantify things outside of the direct financial support that has been granted or the association's own budget.

I would suggest that this be reworded to say "for economic infeasibility building owners must be able to demonstrate definitively that projected retrofitting costs exceed 10% of the building's operating budget or the ROI of the project exceeds a ten-year window and that the county or state has not funded the property with a program sufficient to make the needed improvements."

I live in a large condominium built at the end of the 60s. The association has modernized all of the central systems with new high-efficiency industrial pumps, heaters, and chillers. Variable speed drives allow HVAC systems to be controlled so that energy expended for the system precisely meets the demand and we currently operate very efficiently, especially compared to if we lived in 800 single-family houses.

County leaders have told me that want to keep housing in transit-centered communities affordable so that our elderly neighbors and those on lower incomes can thrive. I consider our building and condo association to have a long history of prudent spending and we have a healthy reserve with miollions saved up for the upcoming projects. But even so, we have a very hard time affording all of the necessary system replacements plus the newly mandated sprinkler system retrofit.

I have directly asked our representatives in state and county government to find resources for building modernization and no one has been able to help us identify funds available right now that we could use to help us improve the building's infrastructure.

-David Churchill, Chevy Chase MD

From: Brian Beddow <brianbeddow@gmail.com>
Sent: Tuesday, November 28, 2023 10:30 AM
To: Energy <Energy@montgomerycountymd.gov>
Subject: Comment on MCER No. 17-23

[EXTERNAL EMAIL]

I am Brian Beddow, a condo owner and Board Member in Mica Condominium at 1220 Blair Mill Road, Silver Spring MD.

I write with extreme concern for the financial well-being of all owners at the Mica Condominium in response to MCER NO. 17-23. Our building was built in the 1960s when gas use was common. Asking us to retrofit this building to meet 21st century standards is unfair and cost prohibitive to many individual owners . I recommend you allow condominium buildings to opt out of this onerous requirement.

I echo Larry Bernard's points that have already been sent, but are listed here for convenience:

1. Like the sprinkler mandate, condominiums and cooperatives are being treated in the same manner as buildings with a single owner, rather than what they really are, which is an economically diverse community of single-family homes that are safer, more efficient, and have lower greenhouse gas emissions than single-family houses. Our owners include people with modest financial resources -- seniors on fixed incomes, first-time home buyers, and families. We cannot deduct the cost of compliance with government mandates from our taxes (and for people who have little income, a deduction would be worth very little), and we cannot increase revenue from our real estate by raising rents.
2. I reside in a condominium in which there are several hundred units. Each unit has a separate deed and land record. If we enter into a BPIP, it is not feasible to record several hundred covenants. Another method of memorializing the BPIP must be provided, such as inclusion in reserve studies.
3. If covenants are recorded and subsequently terminated, the County should be required to file a release of the covenant, or provide a certified copy of a release for each unit so the unit owner can record the release.

4. Showing economic infeasibility "definitively" will be difficult for a condominium or coop. It would be burdensome and a violation of people's privacy for management to determine the economic situation of each owner in order to establish economic infeasibility "definitively." Third-party verification would be very expensive and difficult.

5. It is not clear what infeasibility means for a common ownership community. For example, is economic infeasibility established if 50, or 25, of our owners would have to declare bankruptcy if they were assessed an amount sufficient to pay for their allocated share of the costs of meeting all the BEPS standards? Would we have to raise the assessment high enough to cover the amount allocable to those who cannot afford the payments, which would cause those who can afford larger payments to pay more than their share, and cause the bankruptcy of still more owners?

6. "Infeasibility" should be something well short of personal bankruptcy or bankruptcy of our associations.

7. An objective standard should be established that is sufficient for a presumptive showing of economic infeasibility for a condominium. Economic infeasibility could be defined as an amount that would cause condominium assessments to increase by an amount that would not be permitted under the County's rent stabilization law if condominium fees were rent payments, i.e. the increase in the Consumer Price Index for All Urban Consumers for the Washington-Arlington-Alexandria (CPI-U) + 3%, capped at 6%.

8. The characteristics of "circumstances outside the owner's control" should be defined more clearly. With enough money, there is very little that is outside an owner's control in any building, but measures should not be required if they are unaffordable, would make no economic sense even if owners were able to afford the measures, or provide marginal benefits at an exorbitant expense. One factor that should be considered, in addition to affordability, would be to look at the payback period or rate of return, as the Steven Winter Associates study did (although economists might have a more economically sensible measure). Measures that do not have a reasonable payback period (much less than 50 years, the payback period for the "large, old, multifamily building in the study) or a rate of return that is higher than 2%, could be considered "outside the owner's control."

From: Lawrence Bernard <lawrence.b.bernard@gmail.com>
Sent: Monday, November 20, 2023 2:34 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: Comments on BEPS, Recording Covenants, and Economic Infeasibililty (MCER NO. 17-23)

[EXTERNAL EMAIL]

1. Like the sprinkler mandate, condominiums and cooperatives are being treated in the same manner as buildings with a single owner, rather than what they really are, which is an economically diverse community of single-family homes that are safer, more efficient, and have lower greenhouse gas emissions than single-family houses. Our owners include people with modest financial resources -- seniors on fixed incomes, first-time home buyers, and families. We cannot deduct the cost of compliance with government mandates from our taxes (and for people who have little income, a deduction would be worth very little), and we cannot increase revenue from our real estate by raising rents.
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Steven Winter Associates study did (although economists might have a more economically sensible measure). Measures that do not have a reasonable payback period (much less than 50 years, the payback period for the "large, old, multifamily building in the study) or a rate of return that is higher than 2%, could be considered "outside the owner's control."

Lawrence B. Bernard

4515 Willard Avenue, Apt. 1804

Chevy Chase, MD 20815

From: Lawrence Bernard <lawrence.b.bernard@gmail.com>
Sent: Thursday, November 30, 2023 4:21 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: BEPS MCER 17-23 Target for Multifamily Buildings

[EXTERNAL EMAIL]

Good afternoon,

I have submitted an earlier comment on various issues in the proposed regulation. This comment relates solely to the target of 37 kBtu/sq.ft. for multifamily buildings.

The target seems to have been set without consideration of the differences among multifamily buildings. Modern multifamily buildings were built with the high cost of energy as an important factor in the design and materials, and although meeting the target will still be costly, for new buildings, it will perhaps be affordable. Buildings constructed in the 1960s were built when energy costs were a minor concern. Aggregating all multifamily buildings into a single category puts a very heavy compliance burden on owners in older buildings, especially older condominium and cooperative buildings.

On page 52, the Steven Winter Associates study recognizes the inherent bias in aggregating short multifamily buildings, new tall multifamily buildings, and old tall multifamily buildings:

These groupings may have distinct performance limits due to existing equipment and building layout. A single building performance standard for the entirety of multifamily buildings may be appropriate, ***as long as it considers the highest EUI threshold of these three groups.***

The target numbers in the proposed regulation suggest that the Department did not consider the highest EUI threshold of old tall multifamily buildings in setting the standard for multifamily buildings. Furthermore, the building that was used in the Steven Winter study as the model for large, old multifamily residential buildings had undergone a renovation within the previous decade, had double-pane windows that had been recently installed, and room for solar panels on the roof (and uses solar heating for water). Despite these energy-saving measures, the building still used substantially more energy than the newer buildings in the study.

There are at least 80 high rise buildings in Montgomery County that were built before 1974. Some, and perhaps many, have original single-pane windows. We have looked into solar panels and been told that there is insufficient space available on our roofs to make the installation of solar panels a sensible measure; I know of another that got the same advice, and there are probably many others for which solar panels would not make sense. Many have never undergone a major renovation like the model tall old multifamily building in the Steven Winter study.

The energy target was expensive and not economically sensible for the subject building, with a very long payback period and a very low rate of return. For many other buildings, the payback period will be never, and the rate of return probably well less than zero.

The standards should be revised to separate large old buildings from newer buildings, and to make allowances for the differences among the buildings. This is especially important for condominium and cooperative owners, who should be in a separate category, because many will not be able to afford the cost our associations will incur in meeting these stringent standards. The fairest treatment would be to treat us like what we really are economically, which is a collection of single-family homes, although we are much more energy efficient and have far lower greenhouse gas emissions than single-family homes.

Lawrence Bernard

November 20, 2023
To: Department of Environmental Protection ATTN: Emily Curley
2425 Reedie Dr
Wheaton, MD 20902

Comments from the Montgomery County Climate, Energy, and Air Quality Advisory Committee regarding the proposed Building Energy Performance Standard Regulations for Commercial and Multifamily Buildings

Montgomery County's Climate, Energy, and Air Quality Advisory Committee ["the Committee"], an advisory committee to the County Executive and County Council, supports approval of the regulations on Building Energy Performance Standards (BEPS) proposed by the Department of Environmental Protection (DEP).

I. Implementing an effective BEPS program is a strong priority of the Montgomery County Climate Action Plan.

In response to the climate emergency, Montgomery County developed a Climate Action Plan to chart a path for addressing the crisis. This plan identifies BEPS as among the programs with the greatest potential impact to reduce greenhouse gas emissions. (e.g., Tables 30, 33). Commercial buildings account for 26 percent of the county's greenhouse gas emissions. To meet the County's ambitious goal of reducing emissions, the County must dramatically improve the energy efficiency of its commercial buildings. The proposed BEPS regulations provide a regulatory framework for achieving these reductions in public and private building energy use in the County.

Building owners largely control the equipment, operations and energy efficiency of the properties they own. Given the climate emergency and the contribution of buildings to that threat, regulations that require owners of the largest buildings in the County to make reasonable long-term decisions about their equipment and operations to control their energy use (and thus their excess emissions) are critical to achieving the County's climate goals.

II. The proposed BEPS regulations reflect a full airing of cost and other issues by the varied stakeholders in Montgomery County who would be affected by them.

The Building Energy Performance Standards legislation (Bill 16-21) created a Building Performance Improvement Board (BEPS Advisory Board) with 15 voting members to advise on developing BEPS regulations. This body includes a wide range of stakeholders affected by a BEPS program, including owners/managers of affordable housing, owners/managers of multi-family residential buildings, nonprofit building owners/managers, etc. The Board met more than 20 times to provide input and advise the Department on the approach embodied in the proposed regulations and issued a report outlining areas of consensus and non-consensus. Thus, a diligent effort was made to address fully and at length the key issues of concern to the stakeholders.

III. The proposed BEPS regulations provide flexible mechanisms to achieve compliance for under-resourced buildings.

Some owners of buildings subject to BEPS likely will have legitimate difficulties meeting compliance goals. The proposed regulations fully recognize this reality and provide a reasonable and flexible path forward. When building owners cannot reasonably meet the 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 DEP. The proposed regulations lay out the requirements for such a plan. Owners carrying out the elements in the approved alternative plan will be considered "in compliance." Thus, the proposed regulations are flexible and, when necessary, allow a case-by-case approach to improving building energy efficiency.

Moreover, as the Montgomery County Green Bank has attested, the Green Bank offers financial products to secure energy savings improvements to buildings and to leverage energy savings to support repayment of the financing. Thus, existing programs facilitate compliance with the BEPS program.

IV. The proposed BEPS regulations provide a reasonable option for incorporating meaningful investments in renewable energy.

The focus of BEPS is on improving energy efficiency, because the cleanest energy is the energy never used. The proposed BEPS regulations, however, would allow the building owner to meet compliance standards by subtracting out renewable energy that is both generated and used on-site from total energy used. This means that clean energy generated at the building site for the building's use is given credit against the performance standards. The proposed regulations do not allow purchasing Renewable Energy Credits (RECs) to offset a building's energy use. If such RECs were allowed to offset energy use, both the building that generates the clean energy and the purchaser of the RECs could end up using the same clean energy to offset energy use in two different buildings. Moreover, not all RECs have equally beneficial impacts on emissions. Thus, expanding the type of offsets for clean energy permitted would necessitate additional departmental staff to evaluate the nature of the RECs being used and would further complicate implementation of the program.

V. In addition to reducing emissions, the proposed BEPS regulations would create many other important health and economic benefits for the County.

An effective BEPS program will cut energy costs, accelerate economic investment in the County, and reduce air pollutants. DEP has determined that BEPS can yield enormous monetary savings over 10 years. The reduction in air pollutants is expected to help ameliorate important medical conditions (e.g., asthma) and increase tenant comfort.
BEPS would also create jobs at various skill levels - for laborers, energy auditors, electricians, roofers, and engineers, all of which are local, not geographically remote, jobs.

In conclusion, the proposed BEPS regulations provide a thoughtful approach to reducing building emissions and will help the County reach its climate goals. These proposed regulations constitute a reasonable and flexible plan for cutting emissions while addressing the immediate cost impact on building owners and managers. The Committee urges the County Council's approval of the proposed regulations to implement the BEPS program.

From: Marianne Mulcahey <MMulcahey4@outlook.com>
Sent: Monday, November 27, 2023 2:57 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: Comment re: Building Energy Performance Standards

[EXTERNAL EMAIL]

Dear Ms. Curley:

Attached are my comments to the County's proposed Building Energy Performance Standards.

Thank you for your consideration and your work on this issue.

Marianne Mulcahey

5500 Friendship Blvd., Apt. 1416

Chevy Chase, MD 20815

202 210 1656

Thank you for the opportunity to comment on the Building Energy Performance Standard (BEPS), regulations that would implement Article 6, of Chapter 18A, Environmental Sustainability. I support the County's goal to make substantial progress toward reducing energy consumption and greenhouse gas emissions. However, the proposed rules may create unintended consequences for condominiums that threaten their viability as affordable housing and naturally occurring retirement communities. The rules could ultimately force these homeowners into single family homes, which would only increase carbon emissions.

Recommended Amendment to the Proposed Rule

An important feature of the proposed regulation is the flexibility that allows buildings in developing Building Performance Improvement Plans tailored to their particular features. I recommend that the proposed rules be amended to allow additional flexibility for high-rise multi-family buildings that are organized as condominiums and are not privately owned apartment buildings or commercial buildings. Condominiums should be placed in their own category - "Other – Condominium" because these buildings have characteristics and are organized in a way that will make it difficult for their resident homeowners to comply with new standards and adopt new technologies without incurring debilitating costs. An attainable final performance standard should be established that acknowledges that multi-family communities generally produce fewer emissions than communities of single family homes and that is suitable to the unique characteristics of condominiums. Without this modification, the proposed rules may ultimately increase the cost and availability of modestly-priced, affordable housing in a very expensive community.

The Willoughby of Chevy Chase

I have resided at The Willoughby of Chevy Chase since 1986, first as a tenant, and ultimately an owner. The Willoughby is a 24-story condominium with over 800 units, occupying an intersection in Friendship Heights. The Condominium has two entrances: 1) 4515 Willard Avenue (447,733 square feet); and 2) 5500 Friendship Boulevard (744,244 square feet), according to the Department of Environmental Protection's (DEP) Private Building Inventory. The Willoughby was constructed in the 1960s and organized as a condominium in 1982.

In the Willoughby, each homeowner owns there unit, but also has joint ownership interest in the common areas - lobbies, elevators, hallways, stairways, outer walls and windows, and all the safety and operational systems

(electric, heating, cooling, plumbing, etc.) and shares a financial obligation for their upkeep, maintenance and replacement.

There are different types of units within the Willoughby, including efficiencies, studios, one-, two-, and three-bedroom units. Many owners are retired individuals on fixed incomes or those who are aging in place, workers, students, first-time homeowners or those who have downsized from single family homes. Residents chose to live in the Willoughby because it is located in a walkable community with access to public transportation, bike paths, parks, restaurants and grocery stores. Many residents do not own cars as they can walk, bike and take public transit. Many bought units in the Willoughby because the cost of single family homes is unattainable in the surrounding communities and does not fit their budgets.

The Need for Regulatory Relief

Under the proposed regulations, the County is attempting to reduce greenhouse gas emissions by requiring energy use reductions only from multifamily and commercial buildings, mirroring the State law. Condominiums have been placed in a category that does not recognize this type of ownership and produces specific and unfair challenges for condominiums that do not impact other types of buildings.

Reducing emissions from multi-family buildings is more difficult than reducing emissions from commercial buildings. While multi-family buildings may use more energy and produce more emissions than offices and other commercial buildings, this is in part due to the ability of offices and commercial buildings to reduce energy usage after work hours, weekends or holidays. Under the proposed rules, there are higher reduction targets for multi-family buildings than office or commercial buildings that fail to consider that residential buildings must provide heat and cooling to every unit 24/7 and provide cooking facilities in every unit 365 days out of the year.

Commercial apartment buildings may have the ability to pay for building improvements by increasing rent, claiming tax losses, or obtaining commercial loans. Condominium owners live in their units and do not have the same resources. Improvements are paid by the owners, typically through special assessments. Increased cost to meet regulatory requirements can put individual owners into financial distress and ultimately affects the overall financial health of the condominium.

Challenges facing condominium homeowners to reduce emissions are more complicated than those facing other multi-family building owners. The owners of apartment buildings can make uniform, practical decisions to reduce emissions, take loans to pay for improvements over time and recover costs by passing them on through rental increases. Unlike condominiums, the management has access and control over the apartments. In condominiums, homeowners own and have control of their units with some restrictions imposed under the bylaws and own common elements jointly. Unlike other commercial buildings and other multifamily buildings, condominiums are limited in their ability to order uniform modifications within the units that could reduce energy usage without amending the bylaws in a vote by unit owners. Amending the bylaws is a process regulated by law and can take up to a year. The common elements (hallways, stairs, etc.) can be more easily be modified and provide an easier, but limited path, to energy reductions.

Due to construction and building designs that did not contemplate the need to reduce greenhouse gases, older multi-family buildings are not easily adapted to energy saving technologies. Compliance will create the need for massive investment by homeowners who did not anticipate these costs. For example, a recommendation may be to reduce carbon emissions by requesting that condominium homeowners replace gas stoves with electric stoves. All 800+ kitchens in the Willoughby have gas stoves. Installing electric stoves is forbidden in the bylaws because the building's electrical system cannot safely support electric stoves. Another challenge is that individual units are not metered or have thermostats to regulate temperature. We cannot individually lower temperatures in the winter months, or raise them in the summer months. The proposed rules would force buildings like the Willoughby to make costly major changes to electric, heating and cooling systems, and to insulation and windows.

These improvements will be paid for by the homeowners and will require some homeowners to take substantial loans to upgrade units that are already mortgaged.

The expense of these improvements will compete with the costs of replacement/update of aging systems as well as other upgrades required by county regulations. For example, the Willoughby is in the process of replacing its fire alarm system at an estimated cost of $8 million, approximately $10,000 per unit. The building has also received an initial estimate for the installation of a required sprinkler system with a minimum cost of more than $20 million that could cost over $40,000 for some units.

The financial health of a condominium is dependent on the ability of all homeowners to pay their share of the condominiums expenses. We pay monthly condo fees that supports the operation of the building and builds the reserve. Capital investments, especially unplanned projects not accounted for in the long-term budget, must be paid for through special assessments to each homeowner. The assessment is calculated by the size of the unit, so that those who own homes with smaller square footage pay a lesser amount and homeowners with larger units pay a larger amount. If a substantial number of homeowners fail to pay the assessment, the debt must be managed by the building and could place the building into financial distress. Individual homeowners can have liens placed against their homes and fall into financial crisis.

The flexibility in the regulation is helpful in addressing challenges in compliance, but it is unclear how a condominium will qualify for a Building Performance Improvement Plan (BPIP) that allows additional time to reach the interim and final goals. While the proposed rules recognize that buildings may fail to meet the BEPS and allows these buildings to develop BPIPs, it is not clear how a condominium will prove "economic infeasability" to qualify for this remedy. The proposed regulations require "building owners" to "demonstrate that they do not have the financial ability to implement the improvements needed to meet an interim or final performance standard".

The Willoughby has hundreds of homeowners and investors. How would this be measured? Would it require the condominium to show that a high percentage of owners had been unable to pay special assessments to support the improvements necessary to reduce emissions? Would building reserves, usually set aside for emergencies, be required to be completely depleted? Failure to qualify could result in putting the building into further economic distress and burden the condominium with loans and interest payments. If a condominium is judged to be unable to meet its regulatory obligations it may harm its ability to obtain credit, as well as the ability of the homeowners or potential homeowners to obtain loans or mortgages.

The proposed regulations also require that to obtain a BPIP, the owners consider "all possible incentives, financing and cash flow resources available." It is unclear how a condominium would demonstrate that it has met that requirement. Would it require proof that the condominium had applied for all available government loan programs? Would it require the condominium to show proof that lenders had rejected its applications? Negative financial information that is made public could make our building unattractive to home buyers and force sales to investors who would likely withdraw the units from the market and offer them as rental units.

The Willoughby is likely to need some sort of low-cost loans or grants to reach compliance, as well as expert advice in identifying technology that will result in emission reductions. I would recommend that the County continue to provide financing and incentives for emissions reductions. Condominiums are generally governed by community-minded individuals that may lack the experience and technical knowledge necessary to move multi-family buildings toward compliance. Financing and incentives are particularly important because the Willoughby will be competing for loans and grants against commercial buildings and other multi-family buildings, including affordable housing, nursing and other care homes, senior living communities, medical facilities, schools and adult education buildings that have more obvious needs.

Allowing a separate category and emission reduction target for condominiums will acknowledge that multifamily buildings are already more efficient than communities of single family homes. Studies have found

that the average suburban home produces more than double the emissions of households in multi-family buildings. In large, populated urban areas, where denser forms of housing exist, vehicle ownership rates are lower, the typical muti-family home produces roughly 50% below the average single family home. The Willoughby is situated in Chevy Chase, Maryland, where the size of single family homes has increased as smaller, older two to three bedroom homes have been replaced by mega-mansions with multiple garages for their multiple vehicles. The County's proposed regulation mirrors State legislation and imposes no requirement to lessen energy consumption on single family homes. It is unfair that condominium homeowners are the only homeowners required to bear an unreasonable burden to further reduce emissions.

Setting a specific standard for condominium homes that distinguishes these homes from commercial and apartment buildings is a practical step that will allow us to contribute to emissions reductions without imposing unrealistic costs. In fact, these imposed costs may actually force some condominium homeowners to relocate to single family homes or apartments in more rural (affordable) settings ending the benefits of a car free existence. According to DEP's private building inventory, there are 122 condominiums in Montgomery County or less than 20 percent of multifamily buildings (649). It seems reasonable that the county could research and establish a reasonable and affordable standard for condominium buildings of varying ages and design.

Excessive burdens placed on condominium owners could limit the availability and raise the cost of affordable housing in Montgomery County. In October 2023, the median listing single family home price in Montgomery County, MD was $555,000 (up 5 percent from 2022) and $1,200,000 in Chevy Chase. The median listing price of a condo was $279,000 in the county. Recent sales in the Willoughby range from $179,000 (314 square feet) to $712,000 (2,482 square feet; 2 units combined). Condominiums provide affordable housing and the opportunity of home ownership, but have unique challenges. It seems worthwhile to modify the proposed rule to allow the DEP to work with these homeowners to protect senior citizens and working families.

From: Jesse Clarke <jesse.clarke@gmail.com>
Sent: Monday, November 27, 2023 3:32 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: Comments on MCER No. 17-23

[EXTERNAL EMAIL]

I am Jesse Clarke, a condo owner and Board Member in Mica Condominium at 1220 Blair Mill Road, Silver Spring MD.

I write with extreme concern for the financial well-being of all owners at the Mica Condominium in response to MCER NO. 17-23. I implore you not to move forward with a mandate that has the potential to bankrupt multiple owners. While the attempt to reduce gas usage may be noble, it is not possible for our 1960s building to be converted without extreme measures that are cost-prohibitive to the point of financial ruin. The building was designed and built to use gas while it was legal, and this simply cannot be undone or "switched out".

I echo Larry Bernard's points that have already been sent, but are listed here for convenience:

1. Like the sprinkler mandate, condominiums and cooperatives are being treated in the same manner as buildings with a single owner, rather than what they really are, which is an economically diverse community of single-family homes that are safer, more efficient, and have lower greenhouse gas emissions than single-family houses. Our owners include people with modest financial resources -- seniors on fixed incomes, first-time home buyers, and families. We cannot deduct the cost of compliance with government mandates from our taxes (and for people who have little income, a deduction would be worth very little), and we cannot increase revenue from our real estate by raising rents.
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8. The characteristics of "circumstances outside the owner's control" should be defined more clearly. With enough money, there is very little that is outside an owner's control in any building, but measures should not be required if they are unaffordable, would make no economic sense even if owners were able to afford the measures, or provide marginal benefits at an exorbitant expense. One factor that should be considered, in addition to affordability, would be to look at the payback period or rate of return, as the Steven Winter Associates study did (although economists might have a more economically sensible measure). Measures that do not have a reasonable payback period (much less than 50 years, the payback period for the "large, old, multifamily building in the study) or a rate of return that is higher than 2%, could be considered "outside the owner's control."

From: HJordanVPE@aol.com <HJordanVPE@aol.com>
Sent: Monday, November 27, 2023 12:13 PM
To: Curley, Emily S. <Emily.Curley@montgomerycountymd.gov>
Subject: Building Performance Standards - Parking with respect to GFA

[EXTERNAL EMAIL]

We have a question relative to the relationship for garage parking and the Gross Floor area computation.

Background

A. The Proposed Energy Performance Standards provided the following information.

18A.43A.01.07 Demonstration of Compliance

C. The performance metric is normalized net site EUI and accounts for the renewable energy allowance, using the following formula: EUINN = (EUN – REA)/GFA
EUINN is the weather normalized net site EUI, expressed in kBtu per square foot.
EUN is weather normalized energy use, expressed in kBtu.
REA is the renewable energy allowance, expressed in kBtu
GFA is the covered building's gross floor area

B. A document provided additional information on the definition of gross floor area.

MAY 2023 DRAFT FOR STAKEHOLDER REVIEW 1
Title 26 DEPARTMENT OF THE ENVIRONMENT Subtitle XX
BUILDING ENERGY PERFORMANCE STANDARDS
Chapter 01 Definitions and Documents Incorporated by Reference

(26) Gross floor area.

(a) "Gross floor area" means the total building square footage measured between the principal exterior surfaces of the enclosing fixed walls of a building.

(b) "Gross floor area" consists of all areas inside the building, including but not limited to lobbies, tenant areas, common areas, meeting rooms, break rooms, the base level of atriums, restrooms, elevator shafts, stairwells, mechanical equipment areas, basements, and storage rooms.

(c) "Gross floor area" **does not include** exterior spaces, balconies, bays, patios, exterior loading docks, driveways, covered walkways, outdoor play courts (e.g., tennis, basketball), **parking**, the interstitial space between floors (which house pipes and ventilation), and crawl spaces.

(d) "Gross floor area" is not the same as rentable space, but rather includes all areas inside the building(s).

C. Floor Area, Gross. This is the official term from the 2018 International Building Code (IBC), Chapter 2, Floor Area, Gross is "**the floor area within the inside perimeter of the exterior walls**…"

Discussion

There seems to be a disconnect between the definition of GFA as to what it encompasses and item 26 (c) relative to "does not include…. parking". In the context of Building Energy Performance Standards, "Parking" could be defined as all parking, outdoor parking, garage parking in a stand-alone garage building, and garage parking within the interior walls of a building used for other purposes. The question being raised is the gross floor area exclusion "does not include ……parking" an absolute term or can the parking area inside the perimeter of the exterior walls can be included as part of the gross floor area of a building? Currently, item 26 (c) states no parking in absolute terms. However, items 26 (a)(b) & (d) seem to allow for parking areas within a building.

Conclusion

With respect to Multifamily housing, we are asking if square footage of the interior parking areas of a building can be included in the GFA. If garage parking within a building is not included in the computation of the GFA, can it be assumed that all utility services for the parking area within the building can be excluded from the kBtu calculations.

Submitted by
Henry Jordan
Director, Leisure World Community Corporation

From: Paul Borissow <paul@bauer.energy>
Sent: Monday, November 27, 2023 6:10 PM
To: Energy <Energy@montgomerycountymd.gov>
Cc: awilliams@greaterbethesdachamber.org
Subject: CORRECTED: Joint Letter Regarding Building Energy Use & Benchmarking Performance Standards

[EXTERNAL EMAIL]

Dear Emily,

Attached please find a FINAL version of joint letter regarding the proposed Building Energy Performance Standards regulation, written together with The Greater Bethesda Chamber of Commerce.

We collectively express concerns that the proposed targets may burden building owners, making it challenging to find both technically and financially feasible solutions. Not only that, but the standards have the potential of making affordable housing even more scarce in the County. We aim to contribute constructive feedback to ensure a balanced approach to environmental goals and practical implementation.

Your consideration of our input is greatly appreciated. Should you have any questions or require clarification, please feel free to reach out. Thank you for your attention to this matter.

Best regards,

Paul

--

Paul Borissow | President
BAUER ENERGY
Office: +1 202 681 9054
www.bauer.energy

Bauer Energy
10311 Montrose Ave, 202
Bethesda, MD 20814
202-681-9054

The Greater Bethesda Chamber of Commerce
7910 Woodmont Ave, Suite 1204
Bethesda, MD 20814
301-652-4900

November 27, 2023

Emily Curley
The Montgomery County Department of Environmental Protection
Energy, Climate, Compliance Division
2425 Reedie Dr
Wheaton, MD 20902

Subject: **Joint Letter Regarding Draft Regulations for Building Energy Performance Standards**

Dear Emily,

I hope this letter finds you well. I am writing to you on behalf of Bauer Energy where I serve as President and on behalf of the The Greater Bethesda Chamber of Commerce where I serve as a member of the Real Estate Committee. With 15 years of experience in the energy sector, I have had the opportunity to witness and contribute to the evolution of energy efficiency practices.

Allie and I appreciate the County's commitment to promoting sustainability through the proposed draft regulations for energy performance standards. However, after a thorough review, we would like to express our concerns regarding the current targets outlined in the draft. While we wholeheartedly support the overarching goal of improving energy efficiency, we believe that the proposed targets are too aggressive and may inadvertently place an undue burden on building owners particularly for multifamily properties. Not only that, but the costs of building upgrades will certainly be passed from owners on to residents further exacerbating the serious issue of affordable housing in the County.

To illustrate, the condominium community where I live in Bethesda is comprised of 960 units across a vast property of garden-style buildings. According to a recent energy assessment, our property's Site Energy Use Intensity (EUI) is a 71 and our property is not a good candidate for onsite solar so we will not be able to benefit from a Renewable Energy Allowance. Under the proposed regulations, we will be required to reduce our energy use by 47% in the next 12

years. As an energy professional I just don't see how that can be accomplished given available technologies. In our case a Source EUI goal would be more appropriate and would allow us to consider a wider range of energy efficiency measures, including those using natural gas. According to the County's 2022 Benchmarking Report of late September, the average Site EUI for multifamily properties was a 44.8, so a great many buildings would be impacted if the County adopts the draft recommendations.

The challenge lies in the technical and financial feasibility of achieving the specified energy reduction targets. Implementing such stringent standards may lead to difficulties in finding technically viable solutions, let alone financially feasible ones. It is essential to strike a balance between environmental goals and the practicalities faced by building owners in meeting these targets. Therefore, we urge the County to reconsider and potentially lower the required energy reduction goals for existing buildings. This adjustment would not only alleviate the strain on building owners but also encourage broader compliance and participation in meeting the County's sustainability objectives. It is crucial to ensure that the regulations are both ambitious and attainable to foster widespread engagement and long-term success.

We understand the importance of advancing energy performance standards to combat climate change and enhance environmental sustainability. Therefore, our intention is not to undermine the County's admirable goals but rather to contribute constructive feedback that promotes a more realistic and pragmatic approach.

Thank you for considering our input. We are more than willing to participate in any further discussions or provide additional information that may assist in refining the proposed regulations. We appreciate your dedication to enhancing energy efficiency and sustainability in our community.

Sincerely,

Paul Borissow

President
Bauer Energy
10311 Montrose Ave, 202
Bethesda, MD 20814

Allie Williams

President & CEO
The Greater Bethesda Chamber of Commerce
7910 Woodmont Ave, Suite 1204
Bethesda, MD 20814

Thank you for the opportunity to comment on the Building Energy Performance Standard (BEPS), regulations that would implement Article 6, of Chapter 18A, Environmental Sustainability. I support the County's goal to make substantial progress toward reducing energy consumption and greenhouse gas emissions. However, the proposed rules may create unintended consequences for condominiums that threaten their viability as affordable housing and naturally occurring retirement communities. The rules could ultimately force these homeowners into single family homes, which would only increase carbon emissions.

Recommended Amendment to the Proposed Rule

An important feature of the proposed regulation is the flexibility that allows buildings in developing Building Performance Improvement Plans tailored to their particular features. I recommend that the proposed rules be amended to allow additional flexibility for high-rise multi-family buildings that are organized as condominiums and are not privately owned apartment buildings or commercial buildings. Condominiums should be placed in their own category - "Other – Condominium" because these buildings have characteristics and are organized in a way that will make it difficult for their resident homeowners to comply with new standards and adopt new technologies without incurring debilitating costs. An attainable final performance standard should be established that acknowledges that multi-family communities generally produce fewer emissions than communities of single family homes and that is suitable to the unique characteristics of condominiums. Without this modification, the proposed rules may ultimately increase the cost and availability of modestly-priced, affordable housing in a very expensive community.

The Willoughby of Chevy Chase

I have resided at The Willoughby of Chevy Chase since 2019 when I purchased my unit. The Willoughby is a 24-story condominium with 815 units, occupying an intersection in Friendship Heights. The Condominium has two entrances: 1) 4515 Willard Avenue (447,733 square feet); and 2) 5500 Friendship Boulevard (744,244 square feet), according to the Department of Environmental Protection's (DEP) Private Building Inventory. The Willoughby was constructed in the 1960s and organized as a condominium in 1982.

In the Willoughby, each homeowner owns his or her unit, but also has joint ownership interest in the common areas - lobbies, elevators, hallways, stairways and windows, and all the safety and operational systems (electric, heating, cooling, plumbing, etc) and shares a financial obligation for the upkeep and maintenance.

There are different types of units within the Willoughby, including efficiencies, studios, one-, two-, and three-bedroom units. Many owners, like myself, are retired individuals on fixed incomes or those who are aging in place, workers, students, first-time homeowners or those who have downsized from single family homes. Residents chose to live in the Willoughby because it is located in a walkable community with access to public transportation, bike paths, parks, restaurants, doctors and grocery stores. Many residents do not own cars as they can walk, bike and take public transit. Many bought units in the Willoughby because the cost of single family homes is unattainable in the surrounding communities and does not fit their budgets.

The Need for Regulatory Relief

Under the proposed regulations, the County is attempting to reduce greenhouse gas emissions by requiring energy use reductions only from multifamily and commercial buildings, mirroring the State law. Condominiums have been placed in a category that does not recognize this type of ownership and produces specific and unfair challenges for condominiums that do not impact other types of buildings.

Reducing emissions from multi-family buildings is more difficult than reducing emissions from commercial buildings. While multi-family buildings may use more energy and produce more emissions than offices and other commercial buildings, this is in part due to the ability of offices and commercial buildings to reduce energy usage after work hours, weekends or holidays. Under the proposed rules, there are higher reduction targets for multi-

family buildings than office or commercial buildings that fail to consider that residential buildings must provide heat and cooling to every unit 24/7 and provide cooking facilities in every unit 365 days out of the year.

Commercial apartment buildings may have the ability to pay for building improvements by increasing rent, claiming tax losses, or obtaining commercial loans. Condominium owners live in their units and do not have the same resources. Improvements are paid by the owners, typically through special assessments. Increased cost to meet regulatory requirements can put individual owners into financial distress and ultimately affects the overall financial health of the condominium.

Challenges facing condominium homeowners to reduce emissions are more complicated than those facing other multi-family building owners. The owners of apartment buildings can make uniform, practical decisions to reduce emissions, take loans to pay for improvements over time and recover costs by passing them on through rental increases. Unlike condominiums, the management has access and control over the apartments. In condominiums, homeowners own and have control of their units with some restrictions imposed under the bylaws and own common elements jointly. Unlike other commercial buildings and other multifamily buildings, condominiums are limited in their ability to order uniform modifications within the units that could reduce energy usage without amending the bylaws in a vote by unit owners. The common elements (hallways, stairs, etc.) can be more easily be modified and provide an easier, but limited path, to energy reductions.

Due to construction and building designs that did not contemplate the need to reduce greenhouse gases, older multi-family buildings are not easily adapted to energy saving technologies. Compliance will create the need for massive investment by homeowners who did not anticipate these costs. For example, a recommendation may be to reduce carbon emissions by requesting that condominium homeowners replace gas stoves with electric stoves. All 800+ kitchens in the Willoughby have gas stoves. Installing electric stoves is forbidden in the bylaws because the building's electrical system cannot safely support electric stoves. Another challenge is that individual units are not metered or have thermostats to regulate temperature. We cannot individually lower temperatures in the winter months, or raise them in the summer months. The proposed rules would force buildings like the Willoughby to make costly major changes to electric, heating and cooling systems, and to insulation and windows. These improvements will be paid for by the homeowners and will require some homeowners to take substantial loans to upgrade units that are already mortgaged.

The expense of these improvements will compete with the costs of replacement/update of aging systems as well as other upgrades required by county regulations. For example, the Willoughby is in the process of replacing its fire alarm system at an estimated cost of $8 million, approximately $10,000 per unit. The building has also received an initial estimate for the installation of a required sprinkler system with a minimum cost of $20 million that could cost over $40,000 for some units.

The financial health of a condominium is dependent on the ability of all homeowners to pay their share of the condominium expenses. We pay monthly condo fees to cover the operation of the building and contribute to the reserve. Capital investments, especially unplanned projects not accounted for in the long-term budget, must be paid for through special assessments to each homeowner. The assessment is calculated by the size of the unit, so that those who own units with small square footage pay a lesser amount and homeowners with larger units pay a larger amount. If a substantial number of homeowners fail to pay the assessment, the debt must be managed by the building and could place the building into financial distress. Individual homeowners can have liens placed against their homes and fall into financial crisis.

The flexibility in the regulation is helpful in addressing challenges in compliance, but it is unclear how a condominium will qualify for a Building Performance Improvement Plan (BPIP) that allows additional time to reach the interim and final goals. While the proposed rules recognize that buildings may fail to meet the BEPS and allows these buildings to develop BPIPs, it is not clear how a condominium will prove "economic infeasability"

to qualify for this remedy. The proposed regulations require "building owners" to "demonstrate that they do not have the financial ability to implement the improvements needed to meet an interim or final performance standard."

The Willoughby has hundreds of homeowners and investors. How would this be measured? Would it require the condominium to show that a high percentage of owners had been unable to pay special assessments to support the improvements necessary to reduce emissions? Would building reserves, usually set aside for emergencies, be required to be completely depleted? Failure to qualify could result in putting the building into further economic distress and burden the condominium with loans and interest payments. If a condominium is judged to be unable to meet its regulatory obligations it may harm its ability to obtain credit, as well as the ability of the homeowners or potential homeowners to obtain loans or mortgages.

The proposed regulations also require that to obtain a BPIP, the owners consider "all possible incentives, financing and cash flow resources available." It is unclear how a condominium would demonstrate that it has met that requirement. Would it require proof that the condominium had applied for all available government loan programs? Would it require the condominium to show proof that lenders had rejected its applications? Negative financial information that is made public could make our building unattractive to home buyers and force sales to investors who would likely withdraw the units from the market and offer them as rental units.

The Willoughby is likely to need some sort of low-cost loans or grants to reach compliance, as well as expert advice in identifying technology that will result in emission reductions. I would recommend that the County continue to provide financing and incentives for emissions reductions. Condominiums are generally governed by community-minded individuals that may lack the experience and technical knowledge necessary to move multi-family buildings toward compliance. Financing and incentives are particularly important because the Willoughby will be competing for loans and grants against commercial buildings and other multi-family buildings, including affordable housing, nursing and other care homes, senior living communities, medical facilities, schools and adult education buildings that have more obvious needs.

Allowing a separate category and emission reduction target for condominiums will acknowledge that multifamily buildings are already more efficient than communities of single family homes. Studies have found that the average suburban home produces more than double the emissions of households in multi-family buildings. In large, populated urban areas, where denser forms of housing exist, vehicle ownership rates are lower, the typical muti-family home produces roughly 50% below the average single family home. The Willoughby is situated in Chevy Chase, Maryland, where the size of single family homes has increased as smaller, older two to three bedroom homes have been replaced by mega-mansions with multiple garages for their multiple vehicles. The County's proposed regulation mirrors State legislation and imposes no requirement to lessen energy consumption on single family homes. It is unfair that condominium homeowners are the only homeowners required to bear an unreasonable burden to further reduce emissions.

Setting a specific standard for condominium homes that distinguishes these homes from commercial and apartment buildings is a practical step that will allow us to contribute to emissions reductions without imposing unrealistic costs. In fact, these imposed costs may actually force some condominium homeowners to relocate to

single family homes or apartments in more rural (affordable) settings ending the benefits of a car free existence. According to DEP's private building inventory, there are 122 condominiums in Montgomery County or less than 20 percent of multifamily buildings (649). It seems reasonable that the county could research and establish a reasonable and affordable standard for condominium buildings of varying ages and design.

Excessive burdens placed on condominium owners could limit the availability and raise the cost of affordable housing in Montgomery County. In October 2023, the median listing single family home price in Montgomery County, MD was $555,000 (up 5 percent from 2022) and $1,200,000 in Chevy Chase. The median listing price of a condo was $279,000 in the county. Recent sales in the Willoughby range from $179,000 (314 square feet) to $712,000 (2,482 square feet; 2 units combined). Condominiums provide affordable housing and the opportunity of home ownership, but have unique challenges. It seems worthwhile to modify the proposed rule to allow the DEP to work with these homeowners to protect senior citizens and working families.

Beryl Blecher

berylblecher@hotmail.com

5500 Friendship Boulevard, #1103N

Chevy Chase MD20815

From: Paul Schiller <pschiller@rbmgt.com>
Sent: Wednesday, November 29, 2023 4:01 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: BEPS Executive Regulations Public Comment

[EXTERNAL EMAIL]

My name is Paul Schiller and I am a property management executive with over 15 years of managing both residential and commercial real estate. I have reviewed the proposed regulations and I would like to specifically address **18A.43A.01.05 Establishment of Final Performance Standards by Building Type.** This section attempts to apply a "one size fits all" approach to specific building types, when in fact there is wide variation within each building type. I have great concern with the Final Performance Standard (FPS) that has been applied to Multifamily Housing. Multifamily Housing encompasses a wide variety of property types ranging from row homes, or garden style low-rise buildings, to 15+ story high-rise buildings with hundreds of units. To apply a single standard to these building types, which are far different structurally, mechanically, and in practical use, is improper, irresponsible, and inconsistent with the goals of the Building Energy Performance Standards. For example, a high-rise multifamily property in Montgomery County operates in a manner very similar to a hotel. Both properties typically operate on a 24-hour schedule utilizing energy at all times during the day. Both have common area corridors, lobbies, elevators, and stairwells that must be lit and conditioned at all times. Both contain shared amenities such as fitness centers, swimming pools, banquet rooms, and lounge areas, and both contain residents, guests, and staff on 24-hour basis. Despite these many similarities in operations, and the potential for energy consumption, the proposed FPS treats these two property types very differently. The FPS for Multifamily Housing is 37 while the FPS for a Hotel is 60, a difference of over 62%! An argument could be made that a high-rise multifamily property has the potential for even higher energy consumption than a hotel, given that each apartment unit contains high energy use appliances for kitchens and laundry, whereas, these items are typically excluded from standard hotel accommodations. Additionally, successful high-rise multifamily properties in Montgomery County have occupancy rates exceeding 90%, whereas hotels in our county operate in the 60-70% range. My recommendation would be to create an additional Building Type for high-rise multifamily properties with an adjusted Final Performance Standard at least equivalent to the Hotel standard of 60. This modification would create an equitable standard for high-rise multifamily properties which are currently being subjected to an artificially low, and potentially unobtainable standard under the proposed regulations. I am certain that an examination of the initial benchmarking data provided earlier this year will support the arguments and recommendation posited above.

Thank you for your time and consideration.

PAUL M. SCHILLER
CHIEF FINANCIAL OFFICER
RAKUSIN & BECKER MANAGEMENT, INC.
TEL: 301.656.7820
FAX: 301.907.3851
EMAIL: PSCHILLER@RBMGT.COM

From: Alan B. Weiner <alanbweiner@gmail.com>
Sent: Wednesday, November 29, 2023 7:35 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: MCER No. 17-23

[EXTERNAL EMAIL]

November 29th, 2023

Subject: MCER No. 17-23 Proposed Montgomery County Department of Environmental Protection Regulation *Building Energy Performance Standards Regulation*

We are one of many senior residents who own a unit at The Willoughby Condominiums of Chevy Chase, MD. The Willoughby is approximately 850 plus units individually owned by more than 500 plus owners.

Many of us are concerned about the proposed Montgomery County Department of Environmental Protection Regulations regarding Building Energy Performance. Our building, which is over 5o years old, is already having issues with the Sprinkler Mandates that may go into effect in the coming years. Now we are facing new issues with these proposed environmental issues.

There is talk among residents of panic selling of units and some have already left because of these 2 very serious issues. As seniors living with these serious matters, it is very disconcerting. Many of the residents are like us living on fixed incomes. Like many we are not able to just be hit with assessments and continue to pay our daily living expenses. As seniors we are concerned about ever increasing health and drug expenses and keeping up with them.

We do not wish to leave our condo in Montgomery County which we have owned since 2006 and be forced to move to a State which is kinder and gentler to retirees. Our thoughts were to stay here but we will have to make that determination after we see how these serious issues are addressed.

We thank you for the opportunity to comment on: MCER No. 17-23, Building Energy Performance Standards Regulation.

Sincerely,

Alan & Bonnie Weiner

4515 Willard Ave. S2316 Chevy Chase, MD 20815

From: Susan Fischer <sfischer52@gmail.com>
Sent: Wednesday, November 29, 2023 8:14 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: Comments on BEPS, Recording Covenants, and Economic Infeasibililty (MCER NO. 17-23)

[EXTERNAL EMAIL]

Unfortunately, I am late to the game in my review of the proposed BEPS. Please consider my comments.

The Mica is home to a mix of senior citizens and 20 and 30s. Many units are affordable, but the addition of these costs will most likely take us out of that category. I realize there are sometimes conflicting goals but I wanted to make clear that this is one of those times. We are committed to environmental causes and in 2023 we received a Multi-Family Property Outstanding Efforts in Waste Reduction and Recycling.

1) Although I am sure the county adhered to the announcement requirement I find it could be improved upon and reach more impacted citizens. There are many Apps and local web sites that could be used to announce this important information such as Source of the Spring, Just Up the Pike, Twitter, WTOP. If these were used, I am sorry I missed any announcement, but Source of the SPRING AND WTOP are two sites I Check first thing every morning.

2) I wonder why the BEPS goal (37) for Multi Family Housing is one of the most difficult to reach? I was told an algorithm was used but since some of these buildings are owner occupied, not for profit, those buildings should be in a separate category with a different goal. Also many of these are older buildings that use gas and are also part of the sprinkler mandate. This is a double whammy that makes achieving these goals unreachable. Note that the Mica Sprinkler Committee has asked county and state officials that owner occupied buildings be excluded from the Sprinkler mandate. Why are single family homes excluded? I can't believe that 151 single family homes have a better energy rating than the Mica. Why is the county and state continually placing difficult requirements on housing that is the most affordable? This does not reflect a commitment to affordable housing.

3) These older gas buildings do not have adequate space to house heat pumps to support the domestic hot water and the boiler used for heat. I have been in the boiler room and it is already crowded.

4) My building, the Mica, does not even have 220 electric service. Before we can even install electric equipment we face a high cost and disruption even in the units to do this upgrade. The building has asbestos in the ceiling of hallways and units on 12 floors (of 15 floors) but install of new electric cabling may need to address asbestos currently not identified. Asbestos abatement requires people to vacate and is quite costly.

5) The proposed regulation needs to add and address the definition of owner. Owner occupied buildings are owned by all owners, in the case of the Mica 151 owners. How will economic feasibility be calculated in this situation? How many units need to be unable to pay to make a case for not feasible. How can this information be collected given privacy issues?

6) New owners are vetted during the mortgage process so there is reliability in the ability to pay but now you have added a considerable expense without any review.

7) Our by-laws limit the annual increase to condo fees to 20%. Any changes to the by-laws require a 60% approval, which I believe was set by the county.

8) Today I spoke to Emily Curly regarding the BEPM standards. She was very knowledgeable, patient and informative. However I am still confused and I believe the document needs to be more clear as to how long a building has to meet the goals, whatever that may be. Please clarify when a BPIP is not needed and when it is needed.

9) I have heard some frightening figures just to add an electric switch for the domestic hot water. Although our Reserve Study includes most of these items and we have been saving for them it did not anticipate the more to electric which greatly increases the cost. Our contribution to reserve is the largest line item in our budget. And electric costs are the second highest. The 2024 budget has 18.%% of our budget for electricity alone

10) We have an energy audit from 2021 but that also did not anticipate moving to all electricity. These audits and other required papers and submissions also are not free and cost us money. So it is important that there not be a moving target and that the goal be lowered for owner occupied buildings and the time frame by more clearly communicated.

11) On two occasions we have explored solar panels but each time it was not economically feasible. Therefore we cannot qualify for Renewable Energy Allowance.

12) 18A.43A.01.13 Extensions and Adjustments. I do not see how The Mica could qualify for an extension or adjustment. We need some clarification on this.

13) I'd like to see a roundtable discussion of this requirement. You need to listen to the people who are impacted. Open meetings need to take place.

14) Long ROIs are not persuasive to those living in condominiums. In the Mica studios and one bedroom units are the most prevalent. People move on when their job and marital status changes or they have children; Seniors are not attracted by ROI longer than10 years.

15) These issues deserve to be addressed.

Thank you for your consideration.

Susan Fischer
Mica Condominium
Unit 1400
Silver Spring, MD 20910
--

Susan Fischer

From: Michael Shpur <mikeshpur@icloud.com>
Sent: Wednesday, November 29, 2023 9:20 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: Comments on proposed BEPS Regulation

[EXTERNAL EMAIL]

Congratulations to Montgomery County MD for leading the whole country in implementing BEPS for the built environment. It is not a surprise to me that the County is first walking the walk, not just studying and talking the talk. My comment is Finally!!!

In 1976, I was a young project architect for Grimm and Parker, who had just completed the brand new South Bowie Community Center for MNCPPC in Prince George's County. I was selected to participate in the new national BEPS study being conducted by the AIA Research Corporation, representing the Mid Atlantic Region in the Commercial Building Category. Responding to the new energy consciousness after the first energy crisis in the early 70's, and utilizing my Environmental Design training from my recent University of Maryland Architecture education, my design did a pretty good job saving energy within the construction budget allowed in those days. However, I was happy to learn during the BEPS study that there was still more energy that could be saved on a community center without spending recklessly. In other words, good design was cost effective over the operating life of the building , without costing too much more initially.

From 1993-2020, we proved that concept in many LEED GOLD schools while I was the Architect for School Facilities for Montgomery County `Public Schools. I am happy that the County now has the enforcement power and clear tools to push all new and most existing buildings in an environmentally responsible direction, whether the Owner wants to or not.

Best wishes for a smooth rollout and a successful implementation. Keep Montgomery County the best place to be.

Michael P Shpur, AIA, Retired

From: Arnold Polinger <apolinger@polingerco.com>
Sent: Thursday, November 30, 2023 11:13 AM
To: Energy <Energy@montgomerycountymd.gov>
Subject: Building Energy Performance Standards

[EXTERNAL EMAIL]

My name is Arnold Polinger – I have been the President of Polinger Company for over 35 years. We are the property manager of a number of apartment complexes in Montgomery County. I have read Paul Schiller's letter (of Rakusin & Becker Management) and wanted to go on record that I totally agree with his statement that high-rise apartments are a very different kind of building from an energy use point of view from garden apartments , townhouses or single family homes. It would be very unfair to apply the same energy standards to all of these different types of residential buildings. I support his recommendation that high-rise apartments be considered a different class from other types of residential buildings.

Thanks for your consideration,

Arnold Polinger

President

7700 Wisconsin Avenue, Suite 600| Bethesda, MD 20814

O: 301-968-9118

POLINGER COMPANY
EST. 1947

PLEASE NOTE OUR NEW ADDRESS.

From: Miriam Hamilton <miriamhamilton@icloud.com>
Sent: Thursday, November 30, 2023 12:34 PM
To: Energy <Energy@montgomerycountymd.gov>
Cc: Alan Zukerberg <promdiral@gmail.com>; Alan Zukerberg <apzuk@msn.com>
Subject: Comments on Building Energy Performance Standards, 17-23

[EXTERNAL EMAIL]

Montgomery County Offices of the County Executive:

Thank you for the opportunity to comment on Building Energy Performance Standard (BEPS), regulations that would implement Article 6, of Chapter 18A, Environmental Sustainability. We appreciate the county's plan to lower greenhouse gases by reducing carbon energy production.

Costs to meet final performance standards will be prohibitive for our residents and owners, however. The regulations demand a final site energy reduction from today's average of 57 k BTU per square foot(1) to 37 k BTU per square foot(2), or a reduction of 35%. To achieve this goal, we would likely have to convert to all an electric strategy including appliance upgrades.

The Promenade of Bethesda

I am a resident and owner at the Promenade of Bethesda, an older, residential high-rise cooperative of 1071 units, each individually owned and ranging from small apartments to two- and three-bedroom units. Our residents span a range of income levels, from seniors on fixed incomes to young families. Our older building has been subjected to frequent major repairs and the accompanying monthly fee increases required to pay for them. Our residents, many of them renters, find 5% and 6% fee increases very difficult. Monthly fee increases are passed down to renters. In fact, the county caps all rent increases at 6%, limiting us to spending that does not exceed 6% of the monthly fee. The cost of compliance must be added to the already burdensome expenses of elevator and roof repairs, and drain relining that is still underway.

To reduce our energy consumption, we have been advised that replacing gas stoves with electric versions would be required with an energy upgrade via 100-amp service. The electrical upgrade involves replacing aluminum with copper wiring throughout the complex and upgrading electrical panels. Forbes Magazine estimates an average rewiring cost of $7000 per 2500 square foot home(3), or $2.80 per square foot that will increase if walls have to be knocked down. Furthermore, the Promenade does not have as-built drawings so there is added exploratory work required in any new installation. Outlets would have to be replaced in accordance with the electrical upgrade. Our building has 1.3 million square feet at the average rewiring cost of $3.64 million, not including new stoves and outlets, and unknown construction expenses. Consequently, the actual figure could be much higher.

Cooperatives and Condos Versus Single Family Homes

Regulations have been levied on commercial and residential buildings but not on single family homes. The below graphic from the Environmental Protection Agency shows that multifamily homes in a transit-

oriented development consume 52% less energy per household than single family detached homes, and 59% less energy if green automobiles are available. Figures for the Promenade, like many buildings in Montgomery County, lie somewhere between the two figures. Adding the average of the two percentages to Statista's numbers for 2021(4):

Total single-family homes in the US = 89.9 million

Total multifamily households in the US = 31.8 million,

we conclude that the total energy consumed by single-family homes is 6 times the total energy consumed by multifamily households, making us wonder why condos and co-ops have not been exempted along with the larger energy consumer.

Residential Versus Commercial High Rises

In 2008, the U.S. Department of Energy claimed that all buildings (residential, commercial, single family, and so on) accounted for 40% of total U.S. energy consumption, with 72% of U.S electricity use and 39% of natural gas use.(5) Note that the study defined commercial buildings as buildings with more than 50% of floorspace used for commercial activities including (but not limited to) stores, offices, schools, churches, libraries, museums, hospitals, clinics, and warehouses). Most of these buildings, with the exception of hospitals, turn off heat and electricity during non-working hours, unlike residential buildings. These buildings can also finance electrical upgrades and other improvements without assessing each resident, as condos and co-ops are required to do. Moreover, if all existing buildings reduced carbon footprints and overall energy usage, the effect on the planet would be significant. But most existing buildings have been left out of the regulations.

Exempt Condos and Co-ops

Condos and co-ops set aside reserve funds to pay for future building projects, and raise fees that are also levied on renters. It's not clear that our residents can afford to comply. Furthermore, existing

condos and co-ops are distinctly different from industrial and commercial buildings, and the already exempt existing one-family homes are much bigger polluters than our group. We should be similarly exempted from the law or provisions made to accommodate us.

Miriam Hamilton, Ph.D.

5225 Pooks Hill Road Apt 624S
Bethesda, MD 20814

The Promenade Towers Mutual Housing Corp

1 "What is Energy Intensity?" Energy Star. U.S. Department of Environmental Protection, https://www.energystar.gov/buildings/benchmark/understand_metrics/what_eui

2 Building Energy Performance Standards, Department of Environmental Protection, Reg. 17-23, https://www.montgomerycountymd.gov/exec/Resources/Files/17-23.pdf, p. 5

3 "How Much Does it Cost to Rewire a Home in 2023?" Ogletree, Allie, Forbes Magazine, Sept 11, 2023, https://www.forbes.com/home-improvement/electrical/cost-to-rewire-a-house/#cost_to_rewire_a_house_per_square_foot_section

4 "Number of US Homes in 2021 by Type," Statista, https://www.statista.com/statistics/1042111/single-family-vs-multifamily-homes-usa/

5 "Energy Efficiency Trends in Residential and Commercial Buildings," Energy Efficiency and Renewable Energy, October 2017, U.S. Dept. of Energy, chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www1.eere.energy.gov/buildings/publications/pdfs/corporate/bt_stateindustry.pdf, p.9

From: Chris Pendley <cpendley@swinter.com>
Sent: Thursday, November 30, 2023 3:17 PM
To: Energy <Energy@montgomerycountymd.gov>
Cc: Adam Szlachetka <aszlachetka@swinter.com>
Subject: Comment on MCER No. 17-23

[EXTERNAL EMAIL]

Hello,

Steven Winter Associates (SWA) is providing some comments on the proposed BEPS regulations. Note the following disclaimers:

- SWA is also an active provider of services to Department of Environmental Protection. SWA also worked on the BEPS Technical Report.
- The lead provider of these comments also worked on the BEPS Technical Report and participated with DEP in a presentation to Council as part of the BEPS Technical Report delivery.

We have a handful of comments:

- Some site EUI targets seem aggressive given the typologies. I see a few specifics:
    - Museums (29)
    - Prison (38)
- Some EUI targets seem wonky when compared to each other and thinking about what physically typically occurs in these spaces:
    - Indoor Arena (41) vs. Stadium (Closed) (23), which I think is also the same as Other (Stadium) (23) and isn't that different from a roller rink (84)
    - Urgent Care (46) vs. Medical Office (70) vs. Outpatient Rehab (46)
    - K-12 School (36) vs. Other (Education) (45)
    - Wholesale Club/Supercenter (48) vs. Supermarket (137) vs. Retail Store (48) (I think Wholesale Club/Supercenter is the weird one here)
- It might make sense to define which specific input under 18A.43A.01.08 (renewable energy allowance) is used to claim renewable energy used onsite. I *believe* it's B.3, but it's not clearly defined.
- Regarding 18A.43A.01.10 (BPIP Submission):
    - The deadline should be moved up. Since BPIPs may require revision, BPIPs should be submitted no later than 180 days before the deadline. (Realistically, most of the measures under inclusion require budgeting. Buildings would know if a BPIP is needed well in advance of either interim or final targets.)
    - Suggest clarifying if "economic infeasibility" is simply an inability to raise the capital needed to implement measures or something more complex related to the cash flow of the property—e.g., if a building can meet either the interim or final standard via electrification, and they can raise the capital for it but it increases annual utility spend, does that qualify as economic infeasibility? What about if measure upgrade costs exceed property value?
        - Suggest adding clarity on the types of supporting documentation required to demonstrate economic infeasibility, and if there are certifications that would be

needed to verify economic infeasibility (e.g., MBA or CPA, although this isn't my specialty).

- Suggest delineating "circumstances outside the building's control" to be purely non-financial; that is, financing cycles for properties such as affordable housing would probably fall under economic infeasibility anyway.
  - Related: suggest defining under what circumstances equipment lifecycle might make a BPIP feasible—e.g., would it be tied to expected useful life remaining? If so, where would that information be defined?
- Suggest requiring BPIPs to also include resultant energy savings and clarity on if the BPIP, when sufficiently completed, would result in the building meeting either the interim or final standard. The BPIP should have enough clarity for the Department to evaluate if the BPIP would meet the intent.
- Suggest adding more clarification on when cost is used as an evaluation metric outside of economic feasibility. What else would the information be used for? Would owners need to provide supporting material behind the cost estimates? Cost estimates are typically contained in ASHRAE Level 2 audits, but these costs are typically not obtained from contractors or vendors. Are supporting quotes from vendors needed?
- Suggest better defining "electrification feasibility". Does this mean physically feasible given existing infrastructure, physically feasible with improvements to infrastructure, economically feasible, or something else?
  - This could also be rewritten as "electrification options", which I think elides most of these issues.
- Suggest adding clarification in retrofit plans to address specific challenges in condos—e.g., condos are *similar* to "tenant spaces where equipment is owned and maintained by owner", but the owner actually lives in those spaces and the organizing body (the HOA) doesn't maintain that equipment.

Chris Pendley
Senior Building Systems Engineer, BODE - CEM

Steven Winter Associates, Inc.

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Building Energy Performance Standards

(BEPS)

Reardon Sullivan, P.E. LEED AP

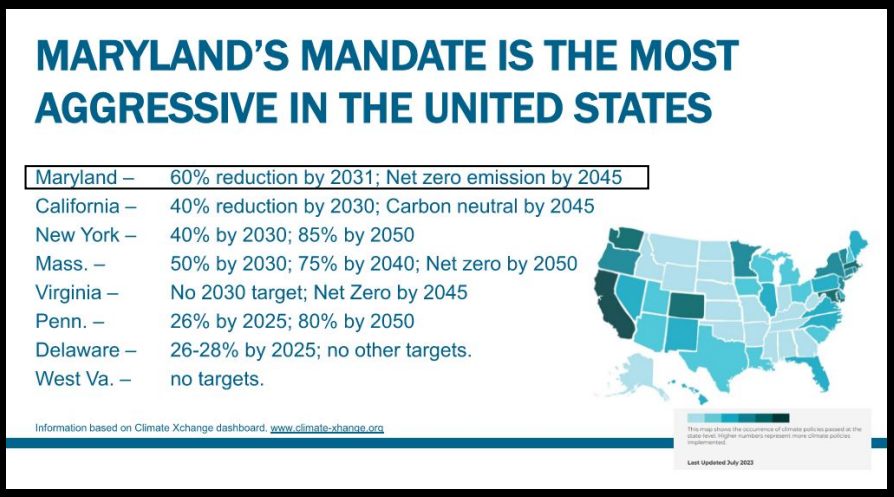
You Can't Get There From Here

What is BEPS?

- *BEPS is an energy performance rating for buildings*
- *BEPS is based on benchmarking of a building's energy use*
- *The energy use goals are set by the Government agency*
- *Proposed Government legislation can impose civil penalties of $25,000 per day per occurrence*

1. Think of BEPS as miles per gallon for cars
2. Penalties are severe and can be attached to the land records for the building

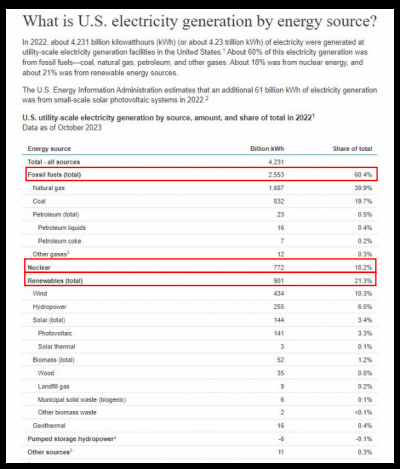
How Does Maryland Rate?



Per Gordon-Feinblatt, LLC

1. Government mandate to reduce energy consumption and use electrical power
2. Maryland is the most aggressive in the nation
3. Maryland is worse that California

Power on the Grid



What is U.S. electricity generation by energy source?

In 2022, about 4,231 billion kilowatthours (kWh) (or about 4.23 trillion kWh) of electricity were generated at utility-scale electricity generation facilities in the United States.[1] About 60% of this electricity generation was from fossil fuels—coal, natural gas, petroleum, and other gases. About 18% was from nuclear energy, and about 21% was from renewable energy sources.

The U.S. Energy Information Administration estimates that an additional 61 billion kWh of electricity generation was from small-scale solar photovoltaic systems in 2022.[2]

U.S. utility-scale electricity generation by source, amount, and share of total in 2022[1]
Data as of October 2023

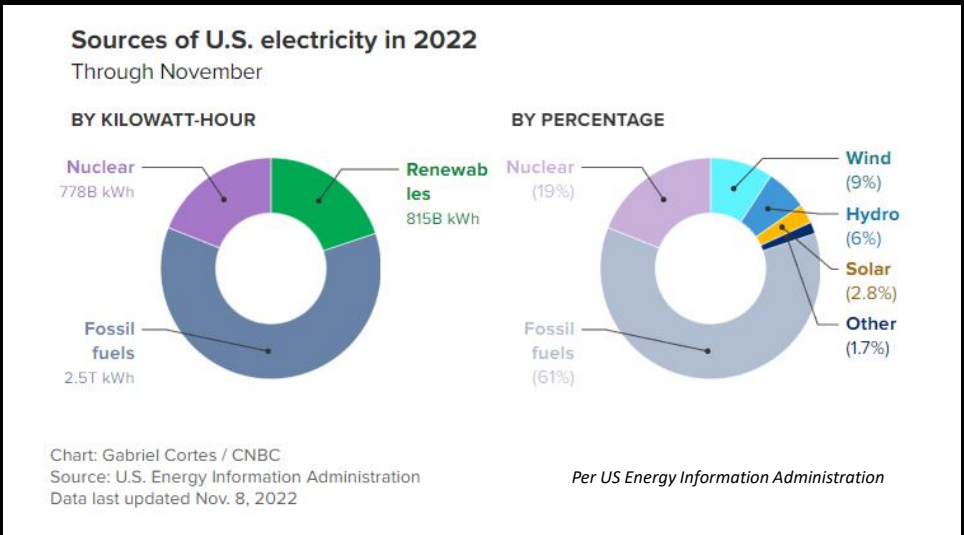
Energy source	Billion kWh	Share of total
Total - all sources	4,231	
Fossil fuels (total)	2,553	60.4%
Natural gas	1,687	39.9%
Coal	832	19.7%
Petroleum (total)	23	0.5%
Petroleum liquids	16	0.4%
Petroleum coke	7	0.2%
Other gases[3]	12	0.3%
Nuclear	772	18.2%
Renewables (total)	901	21.3%
Wind	434	10.3%
Hydropower	255	6.0%
Solar (total)	144	3.4%
Photovoltaic	141	3.3%
Solar thermal	3	0.1%
Biomass (total)	52	1.2%
Wood	35	0.8%
Landfill gas	9	0.2%
Municipal solid waste (biogenic)	6	0.1%
Other biomass waste	2	<0.1%
Geothermal	16	0.4%
Pumped storage hydropower[4]	-6	-0.1%
Other sources[5]	11	0.3%

- Fossil Fuels 60.4%
- Renewables 21.3%
- Nuclear 18.2%
- Other 0.3%

Per US Energy Information Administration

1. Let's look at the power generation on the grid
2. Renewables are only 21% of the power on the grid

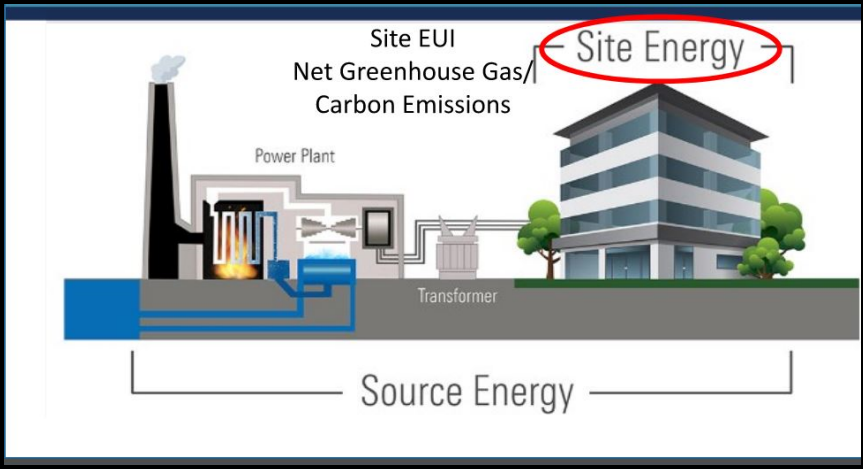
Power on the Grid



Per US Energy Information Administration

More detailed breakdown

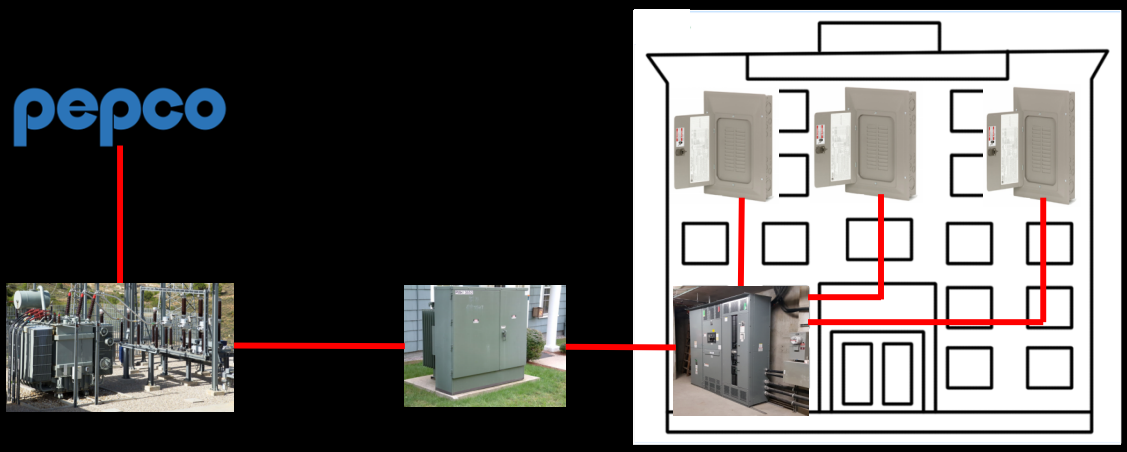
Power Distribution



Per MD Energy Advisors

1. The legislation only considers “site energy” ***- Very misleading***
2. Energy generation evaluation is moved from “site” to “source”
3. The energy must come from somewhere!!!
4. Going electric is only moving the burning of fossil fuels off-site
5. Switch from summer peak to winter peak demand due to heating demand. The grid can’t handle this.

Power Upgrade to the Buildings



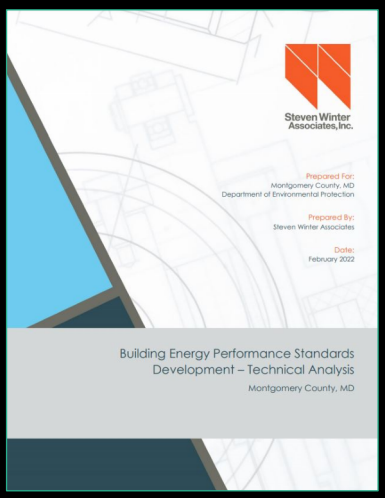
1. Power from Pepco
2. Converted at a substation
3. Converted to low voltage at the building ---
    1. Is the power available in the street? Pepco says “NO”
    2. Lead time for upgrades
    3. Utility work in the street.
4. Upgrade of switchboard in each building
    1. Space in the building
    2. 1 year lead time
    3. Downtime for cut-over
5. New distribution in each building
    1. Space to run new feeders through the building
    2. Phasing of work to keep existing systems on while new systems are installed
        1. Parallel systems
    3. Triggered code upgrades
    4. Lead time on panelboards
    5. Tenant distribution
    6. Lack of revenue
6. Class “C” buildings have no flexibility

Building Upgrade Costs

- Pepco electrical service upgrade
- Upgrade of building switchboard
- New appliances/equipment
- New distribution systems
- Downtime / disruption
- Space requirements
- Triggered upgrades
- Lack of revenue

1. Reinforce actual upgrade costs
2. Desk audit by SWA not accurate

Case Studies are Flawed



- Not based on actual costs
- Fails to consider Pepco upgrades
- Does not address space issues
- Neglects loss of revenue
- Disregards possible level 2 alterations
- Omits real cost to County Citizens
- Uses faulty data to present ROI
- Ignores other ripple effects

1. Montgomery County case studies are flawed
2. Get quote real costs with ripple effects
3. Real life issues:
    1. Aunt Sophie on fixed income in her condo get a special assessment
    2. Commercial tenants get pass thru operating costs

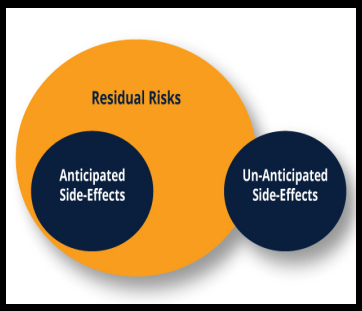
Update Case Studies

- Perform ASHRAE 211 Level 1 / Level 2 audits
- Determine energy conservation measures (ECM) that are feasible with reasonable ROI
- Secure real contractor and utilities quotes for ECMs
- Determine a CapEx schedule based on anticipated revenues
- Consider financing options / costs

Money has legs and will leave the County

1. Montgomery County case studies are flawed
2. Perform a real energy audit
3. Quote real costs
4. The operating cost go up while the rents are controlled … why should a developer continue?
5. Upgrade cost passed to commercial tenants via operating cost clause in the contract.
6. Money has legs and will leave the County, further eroding our tax base

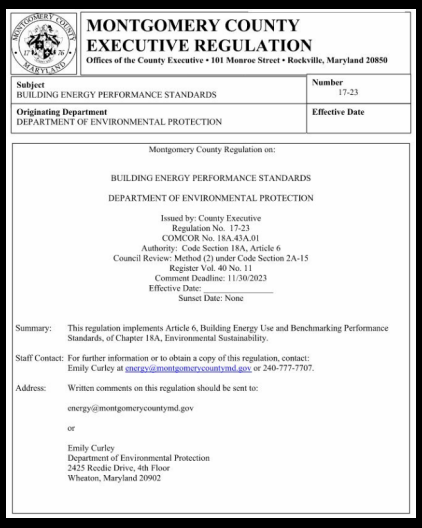
Residual Effects



- *Montgomery County continues its reputation as being business unfriendly*
- Special assessments on condo owners for upgrades of $20,000+ per unit
- Untold hidden condition cost will trigger upgrades to fire alarm, sprinkler, egress, etc.
- Permitting delays in the County for upgrades
- Relance on single power source

1. ***Montgomery County will continue to be viewed as business unfriendly***
2. Money has legs

Proposed Statute



MONTGOMERY COUNTY EXECUTIVE REGULATION
Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject BUILDING ENERGY PERFORMANCE STANDARDS	**Number** 17-23
Originating Department DEPARTMENT OF ENVIRONMENTAL PROTECTION	**Effective Date**

Montgomery County Regulation on:

BUILDING ENERGY PERFORMANCE STANDARDS

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Issued by: County Executive
Regulation No. 17-23
COMCOR No. 18A.43A.01
Authority: Code Section 18A, Article 6
Council Review: Method (2) under Code Section 2A-15
Register Vol. 40 No. 11
Comment Deadline: 11/30/2023
Effective Date: _____
Sunset Date: None

Summary: This regulation implements Article 6, Building Energy Use and Benchmarking Performance Standards, of Chapter 18A, Environmental Sustainability.

Staff Contact: For further information or to obtain a copy of this regulation, contact: Emily Curley at energy@montgomerycountymd.gov or 240-777-7707.

Address: Written comments on this regulation should be sent to:

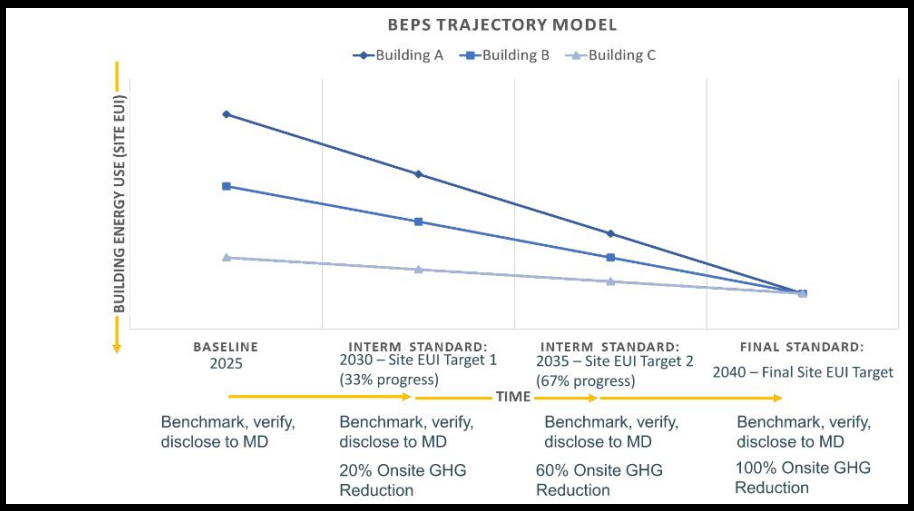
energy@montgomerycountymd.gov

or

Emily Curley
Department of Environmental Protection
2425 Reedie Drive, 4th Floor
Wheaton, Maryland 20902

- Proposed by Marc Elrich
- In comment phase until Nov 30
- Needs County Council vote
- Sets unrealistic EUI requirements
- No administration mechanism

Proposed Statute



Per Steven Winter Associates

1. Requires Class “C” buildings to meet the same requirements as Class “A” Buildings
    1. Not realistic
    2. ROI not reasonable
2. Timelines are arbitrary. Why 2040 vs 2050 or 2060?
3. Where does the money come from?
    1. The green bank has very little money
4. Unfairly burdens low income, marginal business in low income or class “C” buildings

Who Will Administer the Statute?

- DEP's private building inventory contains over 2100 buildings
- There are over 80,000 rental units and 20 million sf of office space
- How with the statute be enforced?
- Create more overhead paid for with tax dollars?

What is the direct benefit to taxpayers?

Is this where we need to spend our money…. How about:

1. Police
2. Education
3. Transportation

Building EUI Requirements

- The listed ZNCs are not obtainable for many residential buildings per the Steven Winter report
- The listed ZNCs are not obtainable for most Class C buildings per the Steven Winter report

You can't get there from here !!!

1. The listed ZNCs are not obtainable for many buildings per the Steven Winter report
2. The listed ZNCs are not obtainable for most Class C buildings per the Steven Winter report

Predictions

- Class “C” apartments will not comply
- Loss of affordable housing
- Rents go up in commercial buildings
- Class “C” office tenants will leave the County
- Startups will bypass the County
- Significant loss of tax revenue
- Ignores other ripple effects

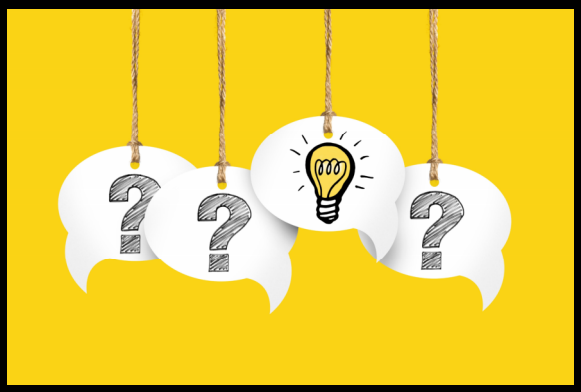
Investment money has legs and will leave the County!!!

1. Upgrade cost will be passed directly to condo owners
2. Upgrade cost can’t be passed to apartment tenant because of rent control
3. Net loss of development in the County
4. Net loss of housing and office space
5. Higher vacancy rates due to higher rental rates
6. MoCo continues to be business “unfriendly”

Next Steps

- Provide comments to the County by November 30, 2023
- Meet with County Council members
- Table current legislation
- Provide updated / realistic / complete case studies
- Develop realistic ECM goals and timelines for EUI for older buildings.
- Provide for tax incentives vs harsh penalties
- Status of prior energy tax and Pepco rebates

Questions



Ms. Emily Curley
Department of Environmental Protection
2425 Reedie Drive, 4th Floor
Wheaton, Maryland 20902

November 28, 2023

Dear Ms. Curley,

I am the owner (along with my wife) of a condominium apartment in the Willoughby, an 800+ unit apartment building in Friendship Heights, Maryland. I am submitting these comments in response to the proposed Building Performance Standards regulations recently published by the Department of Environmental Protection. [Number 17-23.]

Let me say at the outset that I recognize the seriousness of the world's climate crisis and commend Montgomery County for its leadership in addressing this important issue. However, as the owner of an apartment in an older high-rise condominium building, I am concerned that the proposed regulations will have an unfair and potentially crippling financial impact on condo owners like us. The challenges presented by climate change are global n nature and cause. While it's true that, in addressing environmental problems, we should "think globally and act locally," the proposed regulations threaten to impose a potentially crushing financial burden on County apartment owners, while contributing relatively little to solving this globally-generated problem.

The Willoughby is one of the largest apartment buildings in Montgomery County. It was constructed in the late 1960s, long before the dangers of climate change were broadly understood. The 800+ units in the Willoughby are owned by a combination of resident-owners (approximately 60%) who live in their units and investor-owners (approximately 40%) who lease their units to others. A significant proportion of the Willoughby's owners and residents are elderly, retired, and live on fixed incomes. The expense of complying with the proposed regulations, e.g., retrofitting our building with state-of-the-art energy saving features like new boilers and double-paned windows (assuming it's even feasible), is likely to cost tens of millions of dollars. Because each of us owns our own apartments, and the apartment owners collectively own the building infrastructure, the proverbial "buck" stops with us—the individual owners. There is no "deep pocket" corporation who will pick up the tab for expensive energy efficiency improvements to our building. Instead, ALL THE COSTS—and they will be substantial—must be borne by individual apartment owners, likely from a combination of significantly increased monthly HOA fees and special assessments.

I am concerned that the high cost of meeting the proposed building performance standards may force Willoughby owners to sell their units at lower than market prices and move out, depressing property values in our building. In addition to disrupting owners' lives and undermining their financial security, these proposed regulations are in tension with the County's laudable policy goal of encouraging AFFORDABLE multi-family housing near Metro and other transit hubs, especially for its elderly residents.

At the most basic level, the proposed regulation is fundamentally unfair because it would impose significant energy reduction requirements and costs on owners of condominium apartments while exempting owners of single-family houses. This discriminatory focus on apartment owners ignores the fact that apartment owners are already doing their part to combat climate change by choosing to live in relatively smaller homes that leave a smaller environmental footprint.

The average size of a single family house in the United States is approximately 2,500 square feet. I would hazard a guess that in relatively affluent Montgomery County the average size of a single family house is larger than that, and maybe significantly so. On the other hand, the

average apartment in the United States is only 887 square feet. Asking the owners of modestly-sized apartment homes to dig deep into their retirement and other savings to meet the proposed building performance standards while asking NOTHING of owners of much larger single-family houses in Montgomery County is not right. Perhaps if single-family home owners were asked to do more, the burden on apartment owners could be reduced.

In addition, it is not fair to set the proposed building performance standard for "multifamily housing" like the Willoughby at 37 kBtu/sq. ft., while proposing a much more relaxed standard for most other property uses, e.g., bars/nightclubs (220); fast food restaurants (220); restaurant/bar (219); retail/mall (81). Apartment buildings would also have to meet a performance standard significantly higher than financial offices (58); colleges/universities (57); hotels (60); and offices (55). [Oddly, the building category with a performance standard closest to residential apartment buildings is "prisons." (38).] Like the exemption for single-family houses, these proposed standards ask owners of condominium apartments to do far more than their fair share. And unlike the other mostly commercial property uses that benefit from far more relaxed kBtu standards, there is no "deep pocket" corporate owner able to absorb the cost of the energy efficiency improvements that will likely be necessary for condo owners to meet its standard.

The proposed rules do acknowledge the potential for financial hardship and would allow building owners to submit a "building performance improvement plan" (BPIP) in lieu of meeting the performance standards if the building demonstrates it "cannot reasonably meet" those standards. To get their plan approved, the owners must demonstrate that they cannot meet the standards because of "economic infeasibility or other circumstances beyond the owner's control."

However, it is not at all clear what "cannot reasonably meet" or "economic infeasibility" means, or what kind of showing individual owners of the 800+ units in the Willoughby would have to make to meet this test. Would each condominium owner have to file individual income and asset data with the County? Would the building, instead, file a single document that incorporates both the owners' individual and the condominium's collective financial data? How would the condominium force individual owners to reveal and share WITH EACH OTHER AND THE COUNTY their personal financial information? Such forced disclosure would seem a massive invasion of privacy. And what is the hardship cut-off for triggering relief? How many tens of millions of dollars would the County expect individual owners to spend on improvements before the County would say they have paid enough? Would owners (or the building collectively) have to demonstrate that meeting the standards would lead to individual or collective bankruptcy? As you can imagine, these are questions that might keep a unit owner like me awake at night!

Moreover, the cost to condo owners of preparing a BPIP is not inconsequential. It will take an enormous amount of time, effort and money for the owners of a condominium association to demonstrate "economic infeasibility" or "circumstances outside the owner's control." The cost to the condominium association to hire the economic, engineering, legal and tax professionals and consultants necessary to consider, among other things, "all possible incentives, financing, and cash flow resources available," do a "cost-benefit analysis of each potential energy improvement," and develop a "retrofit plan" will be significant. Assuming the County approves such a plan, the condominium will be saddled for years with the costs of monitoring and reporting compliance.

In short, these proposed regulations, although perhaps well-intentioned, are neither fair nor reasonable. They exempt an entire class of homeowners (single family) while imposing potentially crushing financial burdens on owners of apartments in multi-family buildings. They

set a far more stringent performance standard (37 kBtu/sq. ft.) for residential buildings than for many, if not most, other covered property uses even though residents of apartments are already doing their part to address climate and other environmental issues by living in modestly-sized homes in multi-family buildings. Lastly, the proposed financial "safety valve" (the BPIP) has far too many unknowns and uncertainties—what do basic terms like "cannot reasonably meet;" "economic infeasibility;" and "other circumstances beyond the owners control" mean—to provide condominium owners with reassurance that we won't be subject to crushing financial compliance burdens.

I urge the County to withdraw and reconsider these proposed regulations.

Thank you.

James H. Curtin
4515 Willard Avenue
Apt. S1410
Chevy Chase, Maryland 20815

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A WGL Company

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Washington, DC 20024
www.washingtongas.com
Direct Dial: 202-624-6698
Manuel.Geraldo@washgas.com

November 30, 2023

VIA EMAIL

Emily Curley
Montgomery County Department of Environmental Protection
Energy, Climate, Compliance Division
2425 Reedie Drive, 4th Floor
Wheaton, Maryland, 20902

RE: Montgomery County Department of Environmental Protection's Proposed Executive Regulation MCER NO.17-23: Building Energy Performance Standards Regulation

I. INTRODUCTION

On November 1, 2023, Montgomery County Department of Environmental Protection ("DEP") promulgated executive regulation MCER NO.17-23: *Building Energy Performance Standards Regulation* ("BEPS"). Washington Gas ("The Company") is committed to helping the State reduce its greenhouse gas ("GHG") emissions and helping its customers reduce their energy usage, while continuing to provide affordable, reliable, safe, and secure energy. The Company is providing its comments on the BEPS regulations and the standard's design more generally.

Maryland Department of the Environment ("MDE") released its own draft BEPS at the State-level in June 2023. Montgomery County is the only Maryland county with its own BEPS; adherence to both the County- and State-level BEPS, each with potential shared and some divergent rules and requirements, will be duplicative and burdensome to the covered buildings in the County. The Company notes that the proposed BEPS regulations could lead to significant costs for covered building owners in the County and are neither an effective tool for reducing total energy consumption nor GHG emissions. The proposed BEPS does not consider and/or disproportionately disadvantage several cost-effective energy saving and GHG emission reduction measures for the buildings sector that leverage the County's natural gas infrastructure. Through its site energy use targets, BEPS effectively requires the replacement of natural gas appliances, including space and water heating, clothes drying, and cooktops, with electric alternatives. Electrifying commercial buildings is costly and comes with significant challenges and barriers that are not considered or addressed by the BEPS. The Company would like the County to consider the potential adverse effects of its BEPS on the County's building owners, tenants, developers, and the general public. The Company recommends that the County instead evaluate the potential merits of other policy solutions to reducing GHG emissions from the buildings sector, including measures or policies that provide a dual focus on reducing emissions from the electricity supply and the natural gas infrastructure, while also considering the benefits of lower carbon gases and technologies.

II. COMMENTS ON PROPOSED EXECUTIVE REGULATION

BEPS is a "Building Electrification Tax" on the County's commercial building sector, potentially saddling County buildings and residents with between $2.75 billion and $9 billion

in costs, or an average of $1.375 million - $4.5 million per covered building.[1] The interim and final site EUI targets are set such that the primary way to reach them, in many cases, is to convert natural gas appliances to electric appliances. This is driven largely by the relatively higher *end-use* efficiencies of air source heat pumps ("ASHP") for heating and cooling compared to natural gas appliances. Achieving interim and final site EUI targets may also involve overhauling entire buildings and properties, including the installation of new electric appliances, panels and electric service equipment upgrades, building shell improvements, and other necessary heating, ventilation, and air conditioning ("HVAC") alterations. For the County's over 2,000 buildings covered under the BEPS, comprising over 250 million square feet of floor space, these overhauls will incur significant costs.[2] For the ~120 million square feet across more than 650 multifamily properties covered by the BEPS, these costs will be passed through to families and individuals in the form of higher rents. The impacts of the BEPS will fall hardest on the County's low- and moderate-income renters and small business enterprises. Double-digit rent increases and permanently raised rents could 'price out' some renters and tenants and substantial retrofit costs in a high-interest rate environment could hurt smaller businesses without established lines of credit. In California, concern is growing that electrification retrofits for multifamily properties could be used as the pretext for the eviction of low-income tenants that are facing financial difficulties, since the changes required are often so significant that they cannot be completed with tenants occupying the space.[3] For the remaining commercial properties (office, retail, warehouse, etc.), these costs will be reflected in higher prices for everyday goods and services. For building owners, the alternative is to pay Class A penalties under County statute, which carry a fine of $500 for initial violations and up to $750/day for subsequent non-compliance.[4] This is in addition to the Alternative Compliance Payment ("ACP") fee that covered buildings will be subject to under the State's BEPS, starting at $230/ton in 2030 and escalating to $270/ton by 2040. This regulation has the potential to drive investment in commercial real estate outside the County, even outside of Maryland, to neighboring states and regions that are not subject to the same stringent penalties and requirements, and therefore negatively impact Maryland's economy.

BEPS is neither effective at reducing a relatively small portion of GHG emissions nor at reducing total energy consumption. GHG emissions from the County's commercial building sector are ~2.29 million metric tons ("MMT") carbon dioxide-equivalent ("CO2e"), in which GHG emissions from stationary fuel use (including natural gas, propane, and fuel oil) are ~0.83 MMT CO2e (or ~36%) while GHG emissions from electricity use are the majority, at ~1.46 MMT CO2e (or ~64%).[5] Maryland imports roughly half of its electricity from PJM Interconnection ("PJM"), whose current electricity generation mix is over 55% fossil fuel[6], though this can be

[1] An analysis from Lawrence Berkeley National Laboratory on the County's BEPS policies estimated the compliance costs at ~$11-$36 per square foot. According to a fact sheet from Montgomery County DEP, an estimated 250 million square feet are covered under the proposed BEPS, translating to between $2.75 billion and $9 billion in costs when applying the above estimates. Spread out over the County's 2,000 covered buildings (as of July 2022 U.S. Census data), this equates to approximately $1.375M-$4.5M, on average.

[2] Montgomery County Department of Environmental Protection. Montgomery Count's Building Energy Performance Standards One-Pager (2022).

[3] Spectrum News 1. Report: Statewide effort to decarbonize buildings may lead to mass evictions, rent hikes (Nov. 6, 2023).

[4] American Legal Publishing. Codes – Montgomery County – Sec. 1-19 Fines and penalties.

[5] Montgomery County. Climate Action Portal – Climate Action Progress – Greenhouse Gas (GHG) Emissions Trends (2023).

[6] PJM. Markets & Operations (last accessed November 13, 2023).

much higher during periods of peak demand when gas peakers are dispatched to meet load. PJM also has well-documented challenges in interconnecting and delivering new renewable energy resources to customers.[7] [8] This is particularly concerning as PJM and regulators voice growing concerns on bulk power system reliability challenges as electricity demand continues to rise while grid infrastructure solutions fail to keep up.[9] Despite this, modeling from Maryland's recent *Climate Pathway Report* shows that the State intends to nearly double its reliance on electricity imports from PJM by 2030 as it retires additional in-State resources.[10] Meanwhile, the State is increasingly facing challenges in meeting its own renewable energy targets, including for solar and offshore wind.[11] While there may certainly be some cost-effective opportunities for building electrification, switching all commercial end uses to run on grid-delivered electricity could provide some of the poorest marginal GHG abatement options available in the economy (on a $/ton CO2e basis), when considering the fuel-fuel-cycle. In addition, because of the lower efficiencies of centralized fossil fuel power plants (as well as further losses in transmission and distribution of electricity), the true energy savings from BEPS are not as significant when considering the full-fuel-cycle.[12] The County further neglects to consider that natural gas utilities have been historically successful at providing cost-, energy-, and emissions-saving measures through their participation in the EmPOWER Maryland program.[13] Technologies like gas heat pumps may provide some customers with a higher-efficiency gas solution for space and water heating at a lower total cost than converting to an ASHP, while providing enhanced reliability and cold-weather performance. The on-site generation of heat and electricity via combined heat and power ("CHP") systems can provide a more efficient energy choice for commercial and industrial customers. It is possible that such gas technologies paired with renewable energy sources, like behind-the-meter solar, could provide the most cost-effective energy- and emissions-saving solution.

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[7] PJM. Energy Transition in PJM: Resource Retirements, Replacements & Risks (Feb. 24, 2023).

[8] PJM Inside Lines. New Interconnection Process Aims To Ensure Reliability, Enable State Policies (Jun. 30, 2023). In 2022, PJM saw only 2,000 MW of new projects built and only 700 MW of that were renewables. As of June 2023, only 117 MW of solar and 200 MW of wind have come online this year compared to 1,875 MW of natural gas.

[9] NERC. 2023 ERO Reliability Risk Priorities Report (Aug. 17, 2023). The North American Electric Reliability Corporation ("NERC") found energy policy to be one (1) of five (5) main risks and is concerned that policies related to decarbonization, decentralization, and electrification will negatively impact the reliability of the electric grid because of how these policies can cause changes in energy resource mix.

[10] Maryland Department of the Environment. Maryland's Climate Pathway Report – Supplemental information: Modeling Output (Jun. 2023).

[11] For solar, Maryland Senate Bill 65 (2021) revised down the solar carve-out requirement in Maryland's RPS by between 13% and 38% for the years 2023-2030 and the state has been challenged to add sufficient new solar resources. According to the Maryland Public Service Commission's 2022 Annual Report, applications for in-state photovoltaic (PV) solar renewable energy credits (SRECs) were down by ~3.9% from 2021 and the total capacity of projects approved was only 263 MW, down more than 40% from 2021. For offshore wind, the Bureau of Ocean Energy Management ("BOEM") recently finalized three (3) new offshore wind lease areas in Virginia, Maryland, and Delaware in which only 356,550 acres were approved, or 21% of the initially proposed offshore wind lease space in the central Atlantic. In a joint letter to BOEM, Chesapeake Climate Action Network notes the approved lease areas "*cannot accommodate the offshore wind needed in this region" given the reliance of the Mid-Atlantic states on offshore wind to meet their decarbonization targets*".

[12] Washington Gas. Full-Fuel-Cycle.

[13] The Company's longstanding contributions to the EmPOWER Maryland energy efficiency program have helped to save its customers over 102 million therms of natural gas, equivalent to ~647,000 short tons CO2e emissions, since its establishment in 2015, with both therms savings and GHG emissions savings generally increasing year-over-year as the program has been expanded and improved upon.

There are practical challenges and barriers to electrification, particularly for commercial buildings. BEPS does not take into consideration commercial buildings' unique designs or requirements. The significant renovations needed to fully electrify a building—from opening walls and expanding pipe diameters, to making building shell improvements, and temporarily shutting down critical building services—can be highly disruptive to tenants and businesses and may only be made easily during vacancies or during turnover between tenants. Intensive renovations may also require building owners to pay for temporarily relocating tenants for the duration of the work. In New York City, where the nation's first building performance standard is in place, firms are estimating that retrofits can take as long as 10-12 years for large commercial buildings.[14] The availability of the equipment and skilled labor (i.e., electricians) necessary to perform these large-scale retrofits also remains uncertain, as the country is faced with a nationwide shortage of electricians[15] and other states fall behind on their early heat pump adoption targets.[16] The County's BEPS hand-wave away these complexities and challenges by adopting straight-line targets. DEP should consider its own ability to effectively administrate and rule on building performance improvement plans ("BPIP") for up to 2,000 covered buildings in the County, each of which may face its own unique practical and financial challenges requiring careful concern and consideration.

The County should consider how its enforcement and consideration of BPIPs will accommodate the energy solutions customers choose and that are effective at reducing both total energy consumption and GHG emissions. Today, customers are able to choose energy solutions that leverage the existing natural gas infrastructure for their personal and business needs and many would prefer to continue to do so. Solutions and measures that leverage the natural gas infrastructure can be complementary to electrification and can provide more cost-effective choices for reducing energy and GHG emissions. The use of lower carbon fuels, such as renewable natural gas and hydrogen, or the use of flue gas carbon capture systems with natural gas boilers and furnaces, should be allowed under the BEPS renewable energy allowance[17] to recognize the GHG emissions savings they could contribute to a building. . These technologies are being deployed today by utilities and gas customers in Maryland and/or other states for the purpose of reducing GHG emissions from buildings.[18] In addition, combined heat and power ("CHP") systems, a common energy solution for the commercial and industrial ("C&I") sector, are unfairly penalized under BEPS due to the definition of "site energy." CHP systems operate on site at efficiencies greater than 75% and provide GHG emissions savings relative to grid-provided power. Traditional HVAC systems can be less than 50% efficient at providing these services

[14] UtilityDive. Heat pumps are hot, but commercial retrofits face cold realities (Nov. 1, 2023).
[15] Wall Street Journal. U.S. Faces Electrician Shortage as It Tries to Go Green (Mar. 27, 2023).
[16] Energy News Network. Massachusetts heat pump installer network has momentum in second year (Mar. 3, 2023). Massachusetts recently made investments to train hundreds of technicians to install electric heat pumps and offered financial incentives to customers. Despite this, only ~18,000 heat pumps were installed in the state in 2022, well short of the state's annual target of 100,000 set forth in their decarbonization strategy.
[17] BEPS 18A.43A.01.08.
[18] Some flue gas carbon capture systems can also reduce energy consumption for some natural gas customers. Today, gas utilities have initiated customer pilot programs to deploy CleanO2's CarbinX system with large commercial natural gas customers, including programs at Northwest Natural Gas (OR) and CenterPoint Energy (MN). These systems use a process to chemically convert the captured carbon into a potassium carbonate powder, which is an exothermic reaction that produces waste heat that can be reused to supplement natural gas-based space and water heating, thereby increasing the overall efficiencies and reducing primary energy usage by more than 20%, according to this lifecycle GHG analysis.

separately without achieving the same level of GHG emissions savings.[19] CHP systems provide a higher level of reliability and resiliency than grid-delivered electricity while serving as a unique source of firm, distributed power generation that avoids further burdening the State's grid infrastructure.

Compliance with both the County's BEPS and the State's BEPS places an undue burden on the County's commercial building owners and occupants. At the time of these comments, there are key differences between the County's BEPS and the State's, including the site EUI final targets for several types of covered buildings and the minimum gross floor area for covered buildings.[20] Subjecting the County's commercial buildings to compliance with each BEPS is burdensome and adds unnecessary costs and complexity to their operations.

III. CONCLUSION

The Company recognizes the charge of DEP in promulgating these BEPS regulations per statutory requirements. However, the County's BEPS fails to consider (i) the feasibility of achieving its targets, (ii) its effectiveness in achieving real energy savings and GHG emission reductions, (iii) its impact on the County's commercial buildings and the general public, (iv) the effectiveness of measures other than electrification in achieving energy savings and GHG emission reductions, and (v) the undue burden of having both a County- and State-level BEPS that aim to achieve the same thing two different ways. Washington Gas respectfully requests that the comments and recommendations outlined above are considered when finalizing the County's BEPS regulations.

Respectfully Submitted,
Manny Geraldo
State Government Relations and Public Policy Manager, Washington Gas
M 202.924.4511 | manuel.geraldo@washgas.com

[19] Department of Energy. Combined Heat and Power/District Energy System Portfolio Meeting: CHP and Decarbonization (Jun. 7, 2022). See Slide 5.
[20] At the State-level, only certain buildings with a gross floor area of 35,000 square feet and up are covered. In Montgomery County, the minimum gross floor area for covered buildings is 25,000 square feet.

November 30, 2023

Ms. Emily Curley
Building Energy Performance Programs Manager
Montgomery County Dept. of Environmental Protection
Montgomery County, MD

Building Performance Improvement Board
Montgomery County, MD

Dear Ms. Curley,

Since October 2022, the Building Performance Improvement Board (Board), created through the legislation in the Buildings Energy Performance Standards (BEPS) Bill 16-21, has been meeting to advise on the design of the regulations to implement BEPS. The Board consists of stakeholders and community members from various backgrounds and interests. The Board's Final Report summarizing our recommendations and input on how the regulations should be designed can be found here, https://www.montgomerycountymd.gov/green/Resources/Files/energy/bpib/BPIB%20BEPS%20Regulations%20Summary%20Report.pdf. As expected, there was a diversity of opinion on many of the issues. However, upon review of the draft regulations, there is one aspect that the Board has consensus on and urges the Department of Environmental Protection and the County Executive to reconsider, which is the definition of "economic infeasibility" in Sec. 18A.43A.01.10(B)(1).

In addition to the draft regulations which address the lack of available capital to pay for improvements, we suggest the county should also include an objective, cost-benefit analysis to allow owners to establish the "economic infeasibility" of proposed measures, even after subsidies. We stated this in our final report, in that we generally believe that "[e]conomic infeasibility could occur because a building study shows that site EUI target is not technically feasible, when improvement measures to meet the target have high cost and low benefits, or when the owner lacks the needed capital to make improvements." (Final Report, P. 15). We recommend that technical guidance be provided to the building owners on how to determine this aspect. For example, several suggestions on how this could be considered are included on page 16 of our report. Additionally, guidance should be provided on whether the proposed measures should be considered individually or as an entire package. Lastly, the pending state regulations on building emissions and energy efficiency were presented after our deliberations and so are not integrated into our final report but should be considered in this evaluation.

The Board appreciates the opportunity to provide input into the drafting of these regulations. Although individual members may submit additional comments, the suggested changes to the section on economic infeasibility reflect a consensus from the Board about how they could be improved.

Sincerely,
Building Performance Improvement Board, Montgomery County

November 29, 2023

MBIA Comments BEPS Draft Regulations

General Comment: The County should have in place a funding mechanism to help off-set the added cost burden to building owners for these requirements. Especially with respect to multifamily, which will be faced with rent control and BEPS, and will be difficult to pair the two and stay in compliance on the timelines imposed. Reliance on the Inflation Reduction Act and other federal programs is tenuous as a long-term strategy because the Federal government is very fluid in its policymaking and these programs could be terminated during any given congressional or presidential cycle. The County should put more of its own investment into its own programs and mandates. In DC, there are multiple financial programs to help with the expenses through DC Green Bank, PEPCO (Solar is a big one), and DCSEU among others.

18A.43A.01.10.B. (Page 9): The standard for economic infeasibility demonstrations is far too onerous of a burden – suggestion

"for economic infeasibility, the building owner must provide documentation evidencing that it does not have the financial capability to implement all improvements needed to meet an interim or final performance standard, including, for example, documentation that existing cash flow and financing is insufficient or infeasible to perform the work and continue to operate the building consistent with current practices, without causing an adverse effect on the building operations or occupants."

Also, need to mention Historic structures and/or Districts where there may be restrictions on implementing improvements. Are historic structures excluded? What about MNCPPC Design Guidelines that might conflict with or restrict exterior improvements? Or, they need to allow for a capital improvement phasing plan.

18A.43A.01.11.A (Page 10): "and" should be "Or" in the second line (economic infeasibility *OR* circumstances beyond the control…).

18A.43A.01.11.B (Page 11): This language should be deleted.

This section allows for the Director's discretionary review/requirement to submit additional materials beyond the application materials. The regulations are very clear as to what constitutes a complete application, and Section A provides that complete applications will be reviewed. There should not be the ability to impose additional submittal requirements beyond the Regulatory application requirements, on an ad hoc basis, as it would create unequal treatment of different building owners.

18A.43A.01.12.A (page 11): First sentence, perhaps this should read: “After the Director receives *evidence of recording*, the covered building …” intention here seems to want a receipt from the Land Records that the plan has been accepted into the land records? Correct?

18A.43A.01.12 (Page 11): **Add a new Section F**: Once the owner has fulfilled the terms of the BPIP, the County should be responsible to promptly prepare and record a certificate of satisfaction and full release of the recorded BPIP plans, at the County’s recording cost. This will help prevent the risk of old BPIP’s existing in the land records and creating marketability and title issues for owners who have complied. The biggest risk would be for a successor owner, whose predecessors did not release the earlier plans, even after completion.

GROSVENOR PARK III CONDOMINIUM
10401 GROSVENOR PLACE, NORTH BETHEDSDA, MD 20852 301.493.9200

Ms. Emily Curley
Department of Environmental Protection
2425 Reedie Drive, 4th Floor
Wheaton, MD 20902

RE: Executive Regulation 17-23: *Building Energy Performance Standards Proposed Regulations*

Dear Ms. Curley:

Grosvenor Park III Condominium (GP III) would like to comment on Executive Regulation 17-23: *Building Energy Performance Standards Proposed Regulations* (*Proposed Regulation*). GP III is a Building Type I, reinforced concrete, moderately-priced, 20-story condominium, built in 1966.

The proposed regulation requires a normalized site Energy Use Intensity (EUI) for multi-family residential buildings of 37 by not later than December 31, 2035. The proposed regulation would permit a credit for onsite renewable energy generation, but not offsite renewable energy generation. The proposed regulation provides that if it is "economically infeasible" for a building to meet these requirements due to "circumstances outside the owner's control" the owner must adopt a "Building Performance Improvement Plan" (BPIP). To demonstrate meeting these criteria, an owner must include a ASHRAE Level 2 Audit, including very detailed analysis of replacement options, electrification feasibility, and onsite renewable energy systems. A BPIP must be entered as a covenant on the county land records and remains a covenant until the BPIP is fulfilled.

In 2023, GP III reported a 2022 normalized site EUI of 52.4; GP III ranked in the 89th percentile for energy efficiency among multifamily residential buildings according to the EPA. The differential to be achieved by December 31, 2035, is, therefore, an EUI of -15.4, or an energy use reduction of ~30%.

1. GP III has for many years routinely conducted what are now mandatory 5-year replacement reserve studies. See Md. Code Ann., Real Property Art., § 11-109.4. In implementing those studies, the GP III's Board of Directors has always been conscious of and responsive to our environmental stewardship. GP III has taken many steps to protect the environment, including:

(a) Replaced natural gas-fired hydronic heating and domestic hot water system with 85% heat exchange efficiency-rated boilers, generating a system-required 25,106 kBTU/hour. GP III would have preferred to replace two equal size boilers with different

sized boilers in order to minimize usage in summer for domestic hot water, but the "winter only" larger boiler would not fit in GP III's physical plant, which cannot be enlarged.

(b) Replaced chillers and cooling tower with more modern and more efficient equipment. One cooling tower was replaced with two smaller and more efficient towers to improve efficiency at lower demand by using only one tower when needed.

(c) Resealed all windows and balcony / terrace doors as part of routine / cyclical façade re-tuckpointing and brick replacement at a cost of over $1,000,000.

(d) Routinely provides discretionary bi-annual convector filter replacement and annual coil cleaning to make the hydronic convectors as efficient as possible even though convectors are the individual owner's responsibility. GP III also negotiates group replacement pricing to install more efficient convectors.

(e) Replaced nearly all common area interior and exterior lighting with LEDs.

(f) Provided residents with no-cost opportunities to replace incandescent lights with CFLs, and again with LEDs.

(g) Subscribing to a community solar energy project and committed to subscribe to additional projects as they become available.

(h) Modernized elevators and elevator control systems (full replacement of controls) with more energy efficient controls.

(i) Installed Energy Management System, installed Digital Mixing Station, and added Injector Loop System.

(j) Installed first Electric Vehicle Charging Station.

Additionally, as GP III manages its replacement reserve cycle, we currently plan to further reduce energy consumption by:

(k) Rebalancing air handlers and replace in-unit vents/dampers.

(l) Replacing three 60-hp condensing, chilled/hot water, and standby pumps and a dedicated 7½-hp heating water pump with efficient "NEMA Premium" pumps.

(m) Replacing all Unit windows and doors with thermal-coated glass over three years.

2. GP III is engaged with Prime Partners Engineering and Schumate Engineering to perform a series of energy studies, with the financial support of the Montgomery County GreenBank, to:

(a) Confirm GP III's current PEPCO installed service and capacity.

(b) Provide advice on current condition and replacement of entry electrical service equipment, including projected costs.

(c) Determine installation parameters and / or additional required PEPCO installed service for up to five (5) additional Level II dual-port charging stations, including costs.

(d) Determine additional required PEPCO installed service for and determine circuitry and loads necessary to convert all gas cooktops, ovens, and ranges to electric ranges, including rough cost estimate for installed service and circuitry, excluding cost of actual appliances (individual owner's responsibility).

(e) Determine additional required PEPCO installed service for and determine circuitry and loads necessary to convert all gas clothes dryers to electric dryers.

(f) Determine additional required PEPCO installed service to provide Level I EV charging distributed service to all 247 garage parking spaces, including increments of installed service and estimated costs of additional installed service and new circuits. See Md. Code Ann. Real Property Art., § 11-111.4.

(g) Determine additional required PEPCO installed service for, and determine equipment and circuitry necessary to convert all heat and domestic hot water production from natural gas to electric boilers, including rough cost estimate for installed service, circuitry, boilers, and ancillary equipment.

(h) Provide rough cost estimate for installation of individual sub-meters at each Unit's electrical service panel (413 Units).

To be clear, the increases in electrical demand posed by one or several of the changes being studied in paragraphs 2(c) through 2(h) will require that GP III be completely rewired. These studies will cost roughly $70,000 and will be 90% supported by the Montgomery County GreenBank. We will, of course, share the results of these studies with BEP, but they will not be complete prior to the close of the public comment period on this proposed rule.

3. Prime Partners Engineering, supported by Montgomery County GreenBank financing, has already determined that it is infeasible to install renewable energy in the form of solar panels at GP III.

4. Prime Partners Engineering previously proposed that an ASHRAE Level 2-type analysis would cost approximately $40,000.00. GP III rejected that proposal as unnecessary in light of the past projects undertaken, the current replacement cycle plans, and the studies being undertaken, as discussed above. In short, GP III determined that such an audit could not be cost effective and amounted to "analysis only for the sake of analysis."

5. The proposed regulation does not effectively recognize the property structure created by the Maryland Condominium Act. See Md. Code Ann., Real Property Art., § 11-107. Under the MCA, unlike cooperatives, units in a condominium are owned as deeded real property by individuals, not the condominium corporation. A condominium that uses a hydronic heating and cooling system does not control the amount of energy consumed – consumption is sum of the individual owners' and renters' actual demand. Nonetheless, domestic hot water must be provided at a minimum of 120°F and domestic heat must be capable of sustaining 68°F or higher; domestic cooling must be capable of sustaining less than 80°F from June 1st to September 30th. The MCA does not give the condominium the authority to regulate usages beyond these minimums and no hydronic systems provides the feasibility for doing so. To provide minimum required service, the condominium must provide substantially more kBTUs within the system to ensure proper levels to the farthest unit.

6. The regulation's financial hardship definition, above, may be useful for a sole or unitary ownership of a building, but a condominium is made up of disparate owners. In our 413-unit condominium, units range from very large multi-bedroom units to very small studios (458 square feet). Our residents routinely include students, pensioners, veterans or individuals on disability benefits, or individuals on welfare (e.g., section 8 vouchers). While all condominium assessments are divided by percentage of ownership interests, the economic capacity of each owner to pay special assessments (or pass through those costs to renters) varies widely. We are deeply concerned that a number of our residents could default on any large special assessment to comply with the regulations. A condominium has no authority to adjust special assessments to account for such economic disparities.

7. The proposed regulation requires that a BPIP be recorded as a covenant in the land records of the county. Such a covenant would impair the marketability of a property and imposes its own additional costs. This imposition would exacerbate the downward spiral created by substantial and unrecoverable compliance costs.

8. Building Energy Performance Standards in this regulation is not the only regulatory cost facing a significant number of high-rise buildings built in the 1960s and 1970s in Montgomery County. In 2019, the State Fire Marshal determined that residential high-rise buildings that are not protected throughout by an automatic sprinkler system are a distinct hazard to life and property. As such, the State Fire Marshal has mandated that all residential high-rise buildings be fully sprinkled by January 1, 2033. We have contracted with a fire engineering firm to begin estimation of an NFPA 13-compliant sprinkler system, or alternative acceptable to the Fire Marshal. That cost is $18,800. Bear in mind that this is the (a) cost of determining the (b) cost of determining the (c) cost of a sprinkler system. The "back of the envelope" estimate that the fire engineering firm has given us for a sprinkler system is up to $12,000,000.

9. In short, the confluence of regulatory costs may condemn some moderately priced older condominiums. The total cost of compliance may well exceed the point of sustainability and cause the composite ownership of some moderately priced older condominiums to exercise their option to extinguish the condominium regime and sell the entirety of the property for demolition and redevelopment. See Md. Code Ann., Real Property Art., § 11-123. The effect of these regulatory costs would likely be the reduction of moderately priced housing in Montgomery County.

GP III is not alone. Indeed, we are one of three similar buildings built at the same time, and also represent a much larger community of buildings of an era. We cannot support the adoption of the current proposed regulation without substantial change to increase flexibility, recognize the realities of the housing stock, and reduce the adverse impact on the community.

Respectfully submitted,

Jeanne Anderegg

Jeanne Anderegg
President

November 29, 2023

Ms. Emily Curley
Building Energy Performance Programs Manager
Montgomery County Dept. of Environmental Protection
Montgomery County, MD

Climate Coalition Montgomery County, and
Montgomery County Sierra Club

Dear Ms. Curley,
The Climate Coalition Montgomery County and the Montgomery County Sierra Club are jointly submitting this response to the County draft regulations for Bill 16-21, Environmental Sustainability - Building Energy Use Benchmarking and Performance Standards. The goal of our organizations is to make change happen with urgency to create a livable climate for all, which includes helping the County reach the goals of its Climate Action Plan, reducing greenhouse gas emissions (GHGe) by 80% by 2027 and 100% by 2035 in an equitable way.

In 2022, the County Council enacted Bill 16-21 (the County BEPS law), with the strong support of many of the Climate Coalition's member organizations and the Montgomery County Sierra Club. The law focuses on increasing energy efficiency in buildings over 25,000 sq ft. This represents the majority of the commercial and multifamily home square footage in the County, which account for about 25% of the County's GHGe. Increasing energy efficiency in these buildings plays a key role in the County meeting the targets in the Climate Action Plan. By requiring the buildings to become highly energy efficient, they will by necessity need to switch over the majority of their fossil-fuel powered equipment to electric. This is due to the fact that, for example, electric powered heat pumps have around 3 times greater energy efficiency than the most energy efficient gas-powered space heaters, such as furnaces. Requiring buildings to be more energy efficient both lowers the burden on the energy grid and reduces GHGe.

Our organizations support the regulations as written, for the most part. Overall, the regulations are fair and equitable for the County's businesses and residents. Our comments underscore specific provisions of the regulations that will be particularly helpful in moving the County forward to meet its climate goal. We further identify several aspects that should be changed to strengthen the regulations' success and equity.

A. We support the following in the current draft regulations:

1. **Energy Use Intensity (EUI) targets set in the regulations are appropriate to meet the goal of the legislation.** As stated In the County BEPS law (Section 18A-38 (f)), one of the intents of the bill is to "improve the energy performance of covered buildings through established building energy performance standards, therefore, reducing greenhouse gas emissions from the built environment and helping the County achieve its climate action goal of zero greenhouse gas emissions by 2035." The technical report requested by DEP (https://www.montgomerycountymd.gov/green/Resources/Files/energy/Executive Summary - Building Energy Performance Standards Report.pdf) describes a Zero Net Carbon (ZNC) standard, which aligns closely with the EUI targets in the draft regulations. The ZNC standard identifies the EUI targets that support the County in meeting its 2035 zero GHGe goal. ZNC would require buildings to convert most of their fossil-fuel powered equipment to electric, which has a much higher level of energy efficiency. Importantly, the report states buildings can meet the ZNC target using currently available market ready technology. Furthermore, the EUI targets in the draft regulations are similar to the Maryland state goals as required in the Climate Solutions Now Act (CSNA), in which buildings must achieve net zero direct GHGe and increased energy efficiency by 2040.

2. **Energy allowance only for on-site renewable energy generation.** There are several aspects to the use of renewable energy in the draft regulations, each of which we support.
   a. **Only allowing on-site renewable generation makes perfect sense in promoting renewable energy generation in the County.** This provision aligns with the Climate Action Plan, specifically Section E-3, Promote Private Solar Photovoltaic Systems, which will be the primary mode for on-site renewable generation. On-site renewable reduces the burden of energy use to the grid and does not generate any greenhouse gas emissions.
   b. **Not giving an energy allowance for the purchase of off-site renewable energy credits (RECs) is critical.** By limiting an energy allowance to on-site generation, the law does not provide for an allowance for off-site RECs. This is appropriate as using off-site RECs has many concerns. Off-site RECs are often only available from distant sources so have no effect on local energy generation and can involve energy generation that produces climate pollution, such as incinerators. Moreover, the benchmarking tool required by the County lacks a verifiable means to assess off-site RECs.

c. **Retaining RECs is not required.** The draft regulations do not address whether owners of buildings with on-site renewable energy generation should retain the associated RECs. We support building owners being able to sell their RECs, providing them an independent source of income which supports the installation of new on-site renewable energy generation equipment and an overall reduction of the cost of meeting the EUI target. We understand the regulations' silence on this issue to mean that building owners will be able to sell the RECs; however, to the extent this may need to be clarified, we support amending the regulations to state that specifically.
d. **Only crediting an energy allowance for electricity generated that is from on-site renewable energy systems and is used on-site is appropriate.** Excess electricity that is sent back to the grid should not be included in the energy allowance. This approach enhances the value of using electricity in the building, incentivizing its use.

B. Several aspects of the regulations should be improved to enhance the effectiveness of the county BEPS law

1. **Rules for initiation of a Building Performance Improvement Plan (BPIP). We support the concept of a BPIP; several aspects of the BPIP, however, should be improved.**
   a. **BPIP eligibility should be sufficiently restrictive to avoid the BPIP becoming a pathway for building owners to not comply with the EUI targets.** The BPIP is a pathway for building owners to negotiate with the County for an alternative target from the standard EUI target. Building owners who do not have the financial means to reach the standard EUI target should be supported in their effort to do as much as they can to reduce their EUI. The regulations state that "economic infeasibility" is a condition that qualifies a building owner to enter into a BPIP (18A.43A.01.10(B)(1)). "Economic infeasibility" is defined to cover a building owner who does "not have the financial ability to implement the improvements needed to meet an interim or final performance standard after considering all possible incentives, financing, and cash flow resources available." (18A.43A.01.10(B)(1)(a)) Our concern is that the terms used to define "economic infeasibility" are vague. We recommend the criteria for meeting this standard should be explicit, clear and narrowly defined, to guarantee access to a BPIP to building owners with real financial hardship while ensuring that the BPIP is not improperly used to circumvent EUI compliance.
   b. **A BPIP developed ahead of the interim target must include a plan to meet both interim and final EUI targets.** Considering the level of effort and expense to verify "economic infeasibility" as well as to develop measures to meet the target EUI, BPIPs should include plans to address all pending EUI targets, i.e., the interim, as appropriate, and the final. This will give a more complete picture of the building's

trajectory and allow a more complete data set for evaluation of the appropriateness of the plan.

c. **The additional measures or changes that may be required by the Director should include the cost-benefit analysis.** In section 18A.43A.01.11(b), the draft regulations state that "[t]he Director may require that additional measures be assessed, additional documentation be provided, or that additional energy performance improvements be included in the plan." The Director should be allowed to request modifications to any aspects of the plan, but specifically the Director should be allowed to require a cost-benefit analysis, which may significantly impact which projects to bring a building into compliance will or will not be considered acceptable.

d. **Data to be used to allow entry into a BPIP must be verified by a third party in all cases.** The regulations state that the Director may request third party verification. Requiring third party verification in all cases would minimize subjective assessments of this critical aspect of entry into a BPIP.

e. **Cost-benefit analyses of complying should include the social impact of GHGe, as defined by the County.** In determining the cost for a building to comply with the BEPS law, the social cost of the carbon produced from the building burning fossil fuels on-site should be included. As noted above, the BEPS law states that its intent is to decrease energy use and therefore greenhouse gas emissions. In the Maryland CSNA and its proposed regulations for implementation, GHGe are valued by their social cost. The social cost of carbon is the cost of the damages created by carbon dioxide emissions and other climate-warming gasses such as methane. This cost arises from how GHGe changes the climate, and how climate change affects economic outcomes, including changes in agricultural productivity, damages caused by sea level rise, and decline in human health and labor productivity. A building that burns fossil fuel on-site would have its social cost of carbon substantially reduced, or eliminated altogether, when converting to electric-powered equipment, thus reducing the calculated cost of the conversion. As with the CSNA, we cannot ignore the impact of on-site GHGe. Including the social cost of carbon provides a standardized way to address this. The County has access to several sources to determine this value. For example, the United States Environmental Protection Agency assigns a specific number on a per ton basis (https://www.epa.gov/environmental-economics/scghg).

2. Fee structure for noncompliance should be sufficient to promote compliance. The County BEPS law provides that any violation of the law is a Class A violation (18A-43B(b)). For civil offenses, the initial fine is $500 and repeat offenses are $750 (https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md/0-0-

0-116505). While most building owners will plan to comply with the law, the penalties for noncompliance need to be comparable to the cost of compliance to incentivize compliance. Accordingly, each day of noncompliance, beyond the first fine, should be regarded as a repeat offense. Washington, D.C currently uses this model for BEPS enforcement (https://doee.dc.gov/service/energy-benchmarking-enforcement). The daily fines are assessed every 10 days that the building is out of compliance. We recommend that the County Council amend the BEPS law if this issue is beyond the scope of the regulations.

3. Fees collected for not complying with BEPS should be used to support compliance by owners of affordable housing. The cost of complying with BEPS may be challenging for the owners of affordable housing, including both designated and naturally occurring. The fees collected from BEPS noncompliance should be used exclusively to support implementation of the law. Multifamily housing, which is a substantial portion of the buildings covered by BEPS, faces many unique challenges to complying with BEPS. Further, the owners of affordable housing may face even more challenges, such as limited access to loans or cash reserves. Using the BEPS noncompliance fees to assist compliance by affordable housing buildings would strengthen the equity aspects of the BEPS law. We recommend that the County Council amend the BEPS law if this issue is beyond the scope of the regulations.

4. Enhanced public access to BEPS compliance data. We applaud the public disclosure of individual benchmarking data that are available on the County website (https://www.montgomerycountymd.gov/green/energy/benchmarking.html#discloseddata). However, individuals seeking to determine if a specific building is meeting its BEPS target would need to do a deep dive into the website data set to find the building and then compare its EUI data to the building's EUI target. This is not a trivial task, and one that most members of the public will be unlikely to undertake. Nonetheless, members of the public should be able to easily access the compliance of individual buildings. And owners should be able to readily share when their buildings are highly efficient and meeting the BEPS targets. For these reasons, the regulations should require each building to display a standardized indicator of energy efficiency at a readily accessible and easily found location, such as at or near the building entrance. This is currently required in New York City, using Energy Star Scores, where buildings must display a standardized Building Energy Efficiency Rating label provided by the city (https://www.nyc.gov/site/buildings/property-or-business-owner/energy-grades.page, https://www.nyc.gov/site/buildings/codes/compliance-instructions.page). The labels must be displayed in a conspicuous location near each public entrance and updated on an annual basis. Replicating this in Montgomery County would allow both the public to better engage with the County's climate mitigation activities and raise the profile of buildings that are excelling in this area. We also strongly suggest that the

displayed labels indicate an easily interpreted letter grade, as they do in New York City, showing the extent that a building is compliant with energy efficiency goals.

5. Clarifying EUI targets in mixed-use buildings that include a building type that would exclude the building if it represented greater than 50 percent of the floor area. The BEPS law identifies several building types that exclude a building from the legislation if the building type represents over 50% of a building's total gross floor area: "public assembly in a building without walls; industrial uses where the majority of energy is consumed for manufacturing, the generation of electric power or district thermal energy to be consumed offsite, or for other process loads; or transportation, communications, or utility infrastructure" (BEPS Bill 16-21, 18A-34B). Because they are excluded, there is no assigned EUI target. If the excluded building type accounts for less than 50% of the square footage, however, the building is covered and an EUI must be identified. The draft regulations do not appear to address this situation in which the excluded building type must be included in the EUI target. We recommend that the regulations be expanded to address how the EUI is calculated for this type of multi-use building.

The Climate Coalition of Montgomery County and the Montgomery County Sierra Club thank the County for this opportunity to provide comments on the draft BEPS regulations. We hope they are useful in developing the final regulations for the implementation of this very important law that is part of the County's efforts to be a leader in addressing climate change.

Sincerely,

Karl Held
On behalf of the Climate Coalition

Mark Posner
On behalf of the Montgomery County Sierra Club

The Climate Coalition includes the following organizations:

350 Montgomery County
ACQ Climate (Ask the Climate Question)
Bethesda Green
Biodiversity for a Livable Climate
Chesapeake Climate Action Network
Elders Climate Action
Environmental Justice Ministry Cedar Lane Unitarian Universalist Church
Environmental Study Group
Friends of Sligo Creek
Glen Echo Heights Mobilization

Green Sanctuary Committee of the Unitarian-Universalist Church of Silver Spring
Montgomery Countryside Alliance
Montgomery County Faith Alliance for Climate Solutions
One Montgomery Green
Poolesville Green
Safe Healthy Playing Fields
Sugarloaf Citizens' Association
Transit Alternatives to Mid-County Highway Extended/M-83 (TAME)
The Climate Mobilization Montgomery County
Takoma Park Mobilization Environment Committee (TPMEC)
Zero Waste Montgomery County

MARYLAND TECH COUNCIL
ADVANCING LIFE SCIENCES AND TECHNOLOGY

November 30, 2023

Department of Environmental Protection/Energy, Climate, Compliance Division
2425 Reedie Drive, 4th Floor
Wheaton, Maryland 20902

Re: Proposed Montgomery County Building Energy Performance Standards (BEPS) Executive Regulation 17-23

To Whom It May Concern,

The Maryland Tech Council (MTC) is a community of over 700 Maryland member companies that span the full range of the technology sector. Our vision is to propel Maryland to become the number one innovation economy for life sciences and technology in the nation. We bring our members together and build Maryland's innovation economy through advocacy, networking, and education. We appreciate the opportunity on behalf of our members to comment on the proposed Montgomery County Building Energy Performance Standards (BEPS) Executive Regulation 17-23.

Maryland is one of the leading states in the nation for the concentration of life sciences companies and jobs. The state is rich in assets that make life sciences innovation possible – with 54,000 life sciences jobs, 2,700 life sciences and biotechnology companies, world class universities, and government agencies. We are proud that many of those companies and jobs are located in Montgomery County, making it one of the State's key hubs for this critical industry.

These companies are conducting innovative, ground-breaking, and potentially life-saving research and development. To do that, life sciences buildings and facilities must contain laboratory and clinical supply manufacturing activities. There are specific space conditioning requirements in these facilities that are necessary to successfully conduct research and development activities, including those regarding temperature, humidity, room pressurization, cleanliness, and contaminants. Maintaining such precise conditions may result in energy demands that will exceed the energy use intensity (EUI) standards proposed in the draft regulations.

We urge Montgomery County to consider the uniqueness of the life sciences industry as it works to finalize these regulations. The Maryland General Assembly recognized this when it passed the Climate Solutions Now Act of 2022. That law required that the State "As necessary, include special provisions or exceptions to account for…the unique needs of particular building or occupancy types, including health care facilities, **laboratories**, assisted living and nursing facilities, military buildings, critical infrastructure, and **buildings used in life sciences** as defined in § 3-201 of the Economic Development Article."[1] We recommend that Montgomery County adopt a similar provision given the unique energy demands of the life sciences industry. At a minimum, we encourage Montgomery County to specifically engage the life sciences community in Montgomery County to provide flexibility to account for the unique character of this critical industry.

[1] 2022 Regular Session - Senate Bill 528 Chapter (maryland.gov)

MARYLAND TECH COUNCIL
ADVANCING LIFE SCIENCES AND TECHNOLOGY

Thank you again for the opportunity to provide feedback on the Montgomery County Building Energy Performance Standards. I would welcome the opportunity to answer any questions or engage in further discussions with County Staff.

Sincerely,

Kelly Schulz
Chief Executive Officer

BRIDGE
COMMERCIAL
REAL ESTATE


STATION SQUARE
SILVER SPRING, MD


77 UPPER ROCK
ROCKVILLE, MD


SKYBRIDGE TOWER
BETHESDA, MD (NORTH BETHESDA)

November 30, 2023

Emily Curley
Montgomery County Department of Environmental Protection
2425 Reedie Drive, 4th Floor
Wheaton, MD 20902
energy@montgomerycountymd.gov

RE: Building Energy Performance Standards – Proposed Executive Regulations (No. 17-23)

Bridge Commercial Real Estate ("Bridge CRE"), acting as property manager for ownership, is writing to provide feedback on the proposed executive regulations to implement Article 6, the building energy performance standards for Montgomery County.

Bridge CRE operates six buildings across three campuses in Montgomery County. We are committed to exceptional service to our clients, peak building performance, and financial and environmental stewardship. Our building operating practices are centered around system optimization, energy efficiency, and tenant comfort and wellness. Across our national portfolio, our buildings have received numerous ENERGY STAR, LEED, and WELL certifications.

We would like to submit the following concerns regarding the proposed regulations:

- **§18A.43A.01.05 Establishment of Final Performance Standards by Building Type**
  - §18A.43A.01.05.A should specify that the final performance standards are expressed in weather-normalized site energy use intensity (kBtu/ft^2) as calculated by ENERGY STAR Portfolio Manager. This is partially stated in 18A.43A.01.07.C but should be made explicit in reference to the table listing the performance standards.

- **§18A.43A.01.06 Mixed-Use Buildings**
  - This section should clarify the extent to which parking areas can be included in the calculation of weather-normalized site EUI. The table provides a performance standard for parking, but it is not clear if completely open, partially enclosed, and/or completely enclosed parking should be included in the calculation of floor area and performance standards. §18A.43A.01.06.B says that parking is excluded from the calculation of EUI_{AW}, but this is contradicted by the fact that parking is assigned a final performance standard in §18A.43A.01.05.A.
  - §18A.43A.01.06.B should allow for more than three property types to be included in the calculation of EUI_{AW}. While property owners and managers strive to use the fewest number of property use types as possible in Portfolio Manager property

profiles, there are instances where more than three distinct property use types are present and they should be included in the calculation of the performance standard.

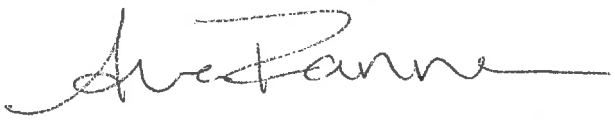
- **§18A.43A.01.10 Building Performance Improvement Plan Submission**
  - §18A.43A.01.10.B.4 should include Certified Energy Manager, Certified Energy Auditor, and Certified Building Commissioning Professional as active qualifying credentials. While the proposed regulation allows for the Director to recognize other credentials and training programs, they should be clearly stated in the regulation for consistency.

- **§18A.43A.01.13 Extensions and Adjustments**
  - This section requires a request for an extension to an interim or final performance standard deadline to be submitted at least 90 days prior to the deadline. This window should be shortened to no more than 60 days to allow for additional time to gather utility and property data from the reporting year, as this sometimes is not available before March of the deadline year.

Additionally, we are concerned about the financial burden that Article 6 and these proposed regulations impose on property owners. Property owners and managers continue to face a COVID-influenced market in which we are required to operate buildings as if they were fully occupied but many tenants are downsizing, with leasing revenue decreases as a result while operating expenses remain the same. Implementing the building upgrades needed to meet the BEPS requirements will in some cases require more capital investment than is financially feasible for owners, putting them in the impossible dilemma of compliance versus solvency. We encourage you to consider additional alternative compliance pathways to ease the burden of compliance, as well as funding or fiscal opportunities to allow building owners to comply with these requirements in a financially sustainable manner.

Thank you for the opportunity to submit these comments. If your office would like to discuss further or if there is any other information we can provide, please do not hesitate to reach out.

Sincerely,



Ana Fannon
Regional Property Manager

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Comments on the Proposed Regulations for Building Energy Performance Standards in Montgomery County, MD

November 30, 2023

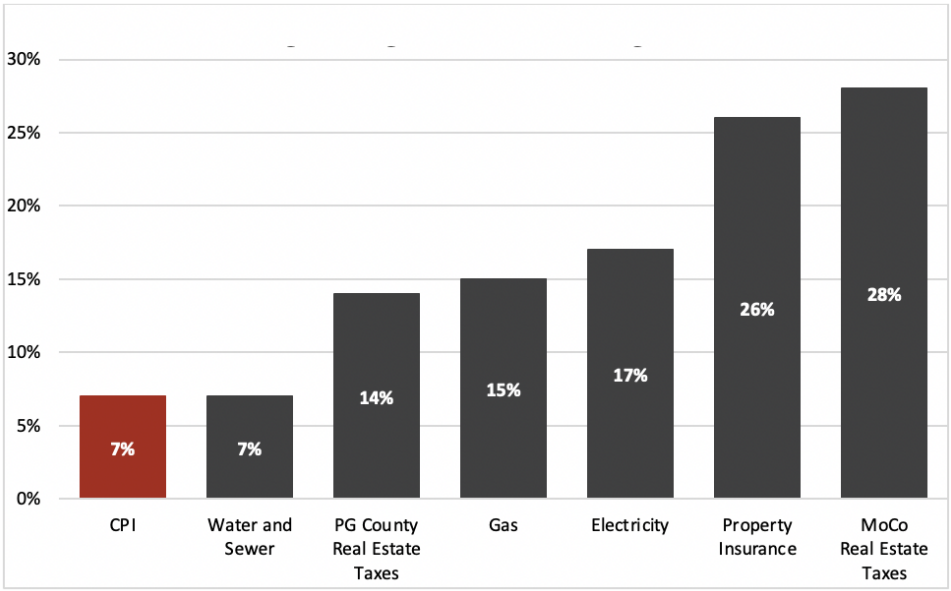
The Apartment and Office Building Association of Metropolitan Washington (AOBA) is a non-profit trade association representing more than 133,000 apartment units and over 23 million square feet of office space in suburban Maryland. Here in the County, AOBA members own/manage over 60,000 of the County's estimated 83,769 rental units and 20,00,000 square feet of office space. AOBA submits this statement on the Proposed Regulations for Building Energy Performance Standards (BEPS) in Montgomery County, MD. AOBA is providing comments on behalf of its members on these regulations to ensure that the performance standards in the County, along with the associated burdens and costs, are applied in an equitable, reasonable, and just manner.

I. Background

Before delving into BEPS, it is important to understand the challenges facing the multifamily rental housing and office industries. Hyperinflationary conditions ushered in by the pandemic have driven up the costs of providing housing at a rate far beyond the Consumer Price Index (CPI) and other traditional measures. Figure 1., below highlights the increase in housing provider costs relative to CPI.[1]

[1] Combined water and sewer rates increased by approximately *7%* effective July 1, 2023. Gas utility costs are anticipated to increase next year. Based on the ongoing rate case, Washington Gas distribution rates will increase *15%* in 2024. Pepco electricity distribution costs are set to increase by *16.7%* in April 2024. Collectively over the last three years, increased electricity costs have increased customer bills by roughly *51.5%*. While *distribution costs have increased by 13-22% during that time, generation costs have nearly doubled over the last three years*. Real estate tax bills for multifamily properties in Montgomery and Prince George's Counties have also grown. Though Prince George's County adopted a flat real estate tax for Fiscal Year 2024, property assessments for apartment buildings increased by 14%. Montgomery County multifamily rental properties saw assessment increases of 23%, which were only compounded by a rate increase of 5% (4.7 cents per $100 assessed value). According to HUB International, multifamily property insurance rates increased by roughly 26% this year and are projected to increase up to *50%* in 2024. Each of the prior two years (2021 and 2022) saw increases of more than *20%.* Interest rates have increased by more than 7 basis points over the last 24 months; a measure which can result in millions in additional expenses over the life of a multifamily loan.

Figure 1. Percentage Change of Rental Housing Costs vs CPI



Housing providers rely on rent as a sole income stream to fund the operations of the property; including mortgage payments and interest; payroll, utilities, business licenses and other taxes; hazard and liability insurance; in-apartment routine repair and maintenance; and contract services such as waste collection, janitorial services, maintenance of mechanical systems, boilers, air conditioning systems and elevators, and fire suppression systems. To better understand these costs, the National Apartment Association (NAA) analyzed the 2022 operating statements for rental properties in Maryland with 5 or more units securing loans in Freddie Mac Commercial Mortgage Backed Securities (CMBS). NAA found that for every dollar of rent:

- $0.47 go directly to cover the property's mortgage payments;
- $0.27 cover operating expenses, including utilities, insurance, and ongoing maintenance;
- $0.10 go towards property taxes, which help fund County programs such as schools, emergency services, and more;
- $0.09 fund employee payroll, including property management and maintenance teams;
- $0.02 are set aside for future upgrades and repairs; and
- Only $0.05 cents of every dollar of rent are returned to the housing provider, and only a small portion of this actually ends up in the owner's pocket. Investors gain primarily from the value growth of their assets. Thus, the bulk of this sum is generally reinvested into the property or leveraged to produce new housing.

On the office side, vacancy rates continue to rise as employers cut costs and downsize due to employee shifts to telework and hybrid work schedules. According to the Montgomery County

Planning Department, from 2018 to 2023 the County saw an increase in office vacancy rates of 42.2 percent.[2] This resulted in a Countywide office vacancy rate of 16.3% with some submarkets and individual properties in the County faring much worse. These numbers are expected to worsen in the coming years as office leases expire and utilization rates continue to trend downward. At the same time, Montgomery County is highly dependent on federal leases, which account for 10% of the inventory. While the Biden Administration has asked federal agencies to institute "return to work" policies this fall, the federal government has received considerable pushback from unions and employees. A Government Accountability Office (GAO) report published in September found that 17 of the 24 federal agencies reviewed used 25 percent or less of their office space in the first quarter of this year.[3] The County has a number of programs and incentives to help combat these trends but lacks a comprehensive strategy with dedicated funding.

II. Zero Net Carbon Target and Site EUI Targets

The County's use of a Zero Net Carbon (ZNC) target standard for measuring site EUI is far too ambitious for multifamily housing providers. Absent considerable subsidies for these building owners, a site EUI of 37 will be unachievable for most buildings. Multifamily building performance measurement is driven by behavior that is entirely out of the building owner's hands, yet they are held responsible for the impact of tenants who employ wasteful energy practices. The tenant does not have any "skin in the game" but their behavior can significantly impact the building owner's BEPS performance and ultimately their financial situation. Furthermore, building owners are being required to make costly improvements for individually metered units, which will result in cost savings for the tenant but not the owner.

The EUI target standard for all multifamily buildings should be reduced to either the Energy Efficiency target ("EE") or ZNC-EE mid-point ("ZNC-EE") referenced in the *Steven Winter Associates (SWA) Building Energy Performance Standards Development- Montgomery County* report. According to the SWA report, the EE target would result in a 19% reduction in GHG emissions compared to 22% for EE-ZNC midpoint and 26% for the ZNC target, assuming no change in today's electricity supply. If the electricity supply becomes 100% carbon-free, GHG emissions would be reduced by 87%, 92%, and 97%, respectively. This demonstrates that both the EE and EE-ZNC midpoint target pathways are aggressive enough to meet the County's ambitious goals without financially harming multifamily housing providers, who face significant financial obstacles resulting from multifamily housing rent caps.

Lastly, the site EUI targets for the Laboratory (144) and Other – Technology/Science (183) do not align with the ground-breaking and potentially life-saving research and development (R&D) taking place at life science companies. While the draft regulations include an exemption for buildings used for the manufacturing of life sciences products, the 50% gross floor area threshold for obtaining this exemption may be far too high for many of the life science companies in the

[2]https://montgomerycountymd.granicus.com/MetaViewer.php?view_id=169&clip_id=16888&meta_id=164020
[3] https://www.gao.gov/products/gao-23-106200

county. Furthermore, this definition of manufacturing does not consider the R&D that is required to bring these life sciences products to market. Many of the companies doing this cutting-edge work have buildings with site EUIs that far exceed the Lab and Other - Technology/Science targets because of the very specific temperature, humidity, room pressurization, cleanliness, and contamination settings that are required to do this research. The regulations should be amended to include R&D under the definition of manufacturing and the threshold for obtaining an exemption should be lowered or the county should use a weighted site EUI for life science buildings with R&D.

III. Cost of Compliance

The ZNC standard will be extremely burdensome for even the newest buildings who have focused on sustainability and developing the most energy efficient buildings. The rough estimated cost of meeting the ZNC standard according to SWA is $25.08 per square foot (PSF). SWA also estimated the Countywide impact of the three target approaches factoring in energy and emissions, energy costs, and capital costs. This analysis determined that the ZNC costs are 93% and 34% higher than the EE and EE-ZNC midpoint costs[4], respectively. Despite these higher costs, the ZNC standard would only result in an 8-percentage point GHG reduction compared to the EE standard and 4-percentage point reduction compared to the EE-ZNC standard using today's electricity supply mix. SWA determined these costs using a "rough estimate that is the result of a high-level review of building conditions and applicable measures."[5] To commit to an expensive and overly ambitious target based on high level estimates is an unnecessary risk for building owners in the County.

AOBA also commissioned SWA to assess the costs of complying with the District of Columbia's (DC) BEPS law. This assessment included a case study of two multifamily properties in the City. Case Study #2 is most analogous to Montgomery County as it would be required to reduce site EUI by 20% to meet the target standard. To meet this target, SWA recommended a variety of Energy Efficiency Measures (EEM), including envelope insulation and air sealing, HVAC system upgrades, domestic water heater upgrades, appliance retrofits, lighting upgrades, low flow plumbing, and cooking fuel conversion. The cumulative cost of these EEM was calculated at $63 PSF. SWA also performed a comparison of DC BEPS to Montgomery County BEPS and determined that not all the EEM would be needed to meet the County's standard. SWA estimates that a similar property in the County would require EEM of $37 PSF.

To put these costs into perspective, $37 PSF would result in a cost of $25,900 for a 1-bedroom apartment measuring 700 SF, and $37,000 for 2-bedroom apartment measuring 1,000 SF. Assuming a County Green Bank subsidized, below market rate loan of 4% with a ten-year payback period, these costs would result in rent increases of $262 per month for the 1-bedroom and $375 per month for the 2-bedroom apartment. While some of these costs can be reduced

[4] Steven Winter Associates, Inc. Building Energy Performance Standards Development- Montgomery County, February 2022 page 10
[5] Steven Winter Associates, Inc. Building Energy Performance Standards Development- Montgomery County, February 2022 page 8

through energy savings, some decarbonization models show an increase in energy burden for residential customers. According to the *E3's BGE Decarbonization Strategy*, a transition to a fully electric, limited gas system would cause the energy burden for the median household to double between 2020 and 2045.[6] Energy burden represents the cost of energy as a percentage of household income. Energy burden increases with the transition from gas to electric due to higher demand and the higher upfront cost of electric equipment compared to conventional gas alternatives.

None of the costs cited thus far have included the associated "heavy up" required to ensure that the property has sufficient capacity to handle the higher electrical loads that accompany conversion from fossil fuels to electric. One of AOBA's members recently conducted a heavy up cost estimate in DC that came out to $2,900 per unit. To determine this cost, the member was required by Pepco to hire an electrical engineer to design, produce, and submit permit level Structural Facilities Drawings for each of the electric meter clusters on the property. This estimate also included the cost of upgrading the transformer, building new transformer pads, and burying powerlines as required by Pepco. Combining the heavy up costs with the EEM on this property would result in a total cost of $20,000 per unit.[7] If amortized over a 10-year period, these costs would require a 13% rent increase per unit.[8] These costs will exacerbate the housing affordability crisis in the County. In some parts of the County, the market may not even be able to support such high increases, making these costs unrecoverable.

To make matters worse, the County has capped rents at 6% annually at a time when housing providers are seeing increased operating costs related to rising insurance rates, increased labor costs, utility rate increases, and much more. While the County's Rent Stabilization Law (RSL) allows a limited surcharge to recover the costs of capital improvement required by legislative mandates, the surcharge is conditioned on approval from the County. This will increase the administrative burden for both the County and the housing provider. The County does not have the staff to handle hundreds of surcharge petitions from building owners in a timely and efficient manner. The RSL also includes an inherent conflict for "troubled" and "at-risk" properties. The RSL limits rent increases for those properties to an amount necessary to cover the cost of habitability, which would effectively preclude a capital improvement surcharge needed to finance the improvements.

IV. On-site and off-site Renewable Generation

AOBA fully supports the recommendation for full credit for on-site renewable generation. However, the proposed regulations should also include credit for building owners with off-site renewable generation and building owners who purchase green energy above the current State mandated RPS levels. The regulation should go a step further and recognize offsite renewable generation and voluntarily green energy supply to include a credit for building performance. The

[6] https://www.ethree.com/wp-content/uploads/2022/10/BGE-Integrated-Decarbonization-White-Paper_2022-11-04.pdf

[7] Tower Company Electrification Heavy up Costs for DC Property

[8] This affordable housing property has income restrictions with average rents of $1,300 per unit.

County's goal for these standards is to reduce the impact of greenhouse gas emissions from County residents and buildings. Building owners already contribute through the mandatory RPS requirements and the County should provide recognition and credit for building owners who contribute above the goal through their investment in a greener electric supply.

AOBA supports a Renewable Energy Allowance ("REA") for offsite renewable generation. The Allowance for Renewable Energy Technical Report and Recommendations provides good context for offsite REC recognition especially insofar as they align with County codes and reflect the challenges facing properties where onsite solar is not feasible. AOBA supports the development of solar in Montgomery County, but we must recognize that there are limitations to the amount of renewable energy that can be built in the County. The County will not be able to build enough solar or other renewable energy to make the County energy supply 100% green. This is precisely why the State Renewable Energy Performance Standards ("RPS") includes the ability to utilize renewable energy credits from outside of the State for compliance. The ICF report notes the challenges in developing an REA that balances the County's broad goals. If the REA is too restrictive, "it could cause additional local investment in energy efficiency retrofit measures to comply with BEPS, and the expansion for qualified renewable resources may be limited."[9] If the REA were to recognize a broader approach to RECs, "the REA would likely be more cost effective and renewable energy could become more widely used for compliance with BEPS. This approach could also reduce grid carbon emissions broadly."[10] Additionally, the County's report notes that "the utilization of an REA can keep buildings while still working towards being complaint with BEPS."[11] This alignment with County existing building codes makes sense and simplifies compliance for both developers and the County.

The broader grid benefits that would be achieved also need to be recognized, as an increase in renewables would provide additional resiliency and lessen the need to increase the electric grid distribution infrastructure expenditures. By recognizing offsite renewables, particularly in the PJM region, would facilitate progress to having the whole grid decarbonize at a faster pace than it is currently. Any effort from the County should recognize that a steady move towards a greener electric supply yields the greatest benefit towards achieving the County's goals and recognition of offsite renewable generation as credit towards BEPS compliance would be a significant contribution towards achieving the County's goals.

V. Defining and Calculating Economic Infeasibility

Given the considerable costs of meeting the site EUI targets, the regulations must better define "economic infeasibility" for building owners that cannot reasonably meet either the interim or final standards. While the Building Performance Improvement Board (BPIB) could not agree on a

[9] DEP July 2022 Allowance for Renewable Energy Technical Report and Recommendations page 12
[10] DEP July 2022 Allowance for Renewable Energy Technical Report and Recommendations page 13
[11] DEP July 2022 Allowance for Renewable Energy Technical Report and Recommendations page 13

specific standard for defining economic infeasibility, there was some agreement that it should include the cost of the improvement exceeding the costs savings from the reduced energy over the lifespan of the equipment. The cost of the improvements should include the cost of debt service, given that larger projects typically require financing. Cost savings should be discounted to recognize that reduced energy may not reduce costs for the property owner or may result in higher rents. Cost savings should also be discounted to recognize that inflation will reduce the value of those savings over time. Lastly, economic infeasibility should consider a specific property occupancy rate. The proposed State BEPS regulations, for example, include up to a three-year exemption from benchmarking for properties with less than 50% occupancy. This expanded definition is important for office building owners as they grapple with telework and the resulting decline in lease renewals, office tenant downsizing, and decline in office utilization rates.

VI. Rate Case Increases Are Eroding any Savings

The economics of energy efficiency projects are based on future energy costs and used to justify associated capital outlays. Any such project must have positive cash flow, or the owner would not proceed with the project.

The Maryland Department of the Environment Air Quality Control Advisory Council report notes that the cost during BEPS implementation will significantly exceed the energy cost savings accrued. To mandate that building owners make unsound investments when their capital expenditures are at such a critical juncture for their mere survival is unjust. The Maryland Department of the Environment notes:

> *Results from a 2023 study by the U.S. Department of Energy's Lawrence Berkeley and Pacific Northwest National Laboratories demonstrate that during BEPS implementation (2025-2040), all covered buildings combined will spend more on efficiency measures ($8.8B) and electrification measures ($6.4B) than the energy cost savings accrued in this period ($8.96B).*[12]

The assumption that the costs of energy efficiency upgrades, and electrification in particular, can be largely recouped through energy cost savings has been discredited. Even the staunchest of advocates and experts have ceded to this reality. As a case in point, the U.S. General Services Administration (GSA) is proceeding with an ambitious goal to electrify federal buildings with taxpayer funding of $1.9 billion through the Inflation Reduction Act. According to Marshall Duer-Balkind and Yolanda Bonner of the Institute for Market Transformation, "the GSA projects that the projects funded [for the Ronald Reagan Building electrification] [with a] $975 million investment will deliver $467 million in energy costs savings over the next 20 years." In their June 29, 2023, announcement of the project, they state:

[12]https://mde.maryland.gov/programs/workwithmde/Documents/AQCAC/2023MeetingMaterials/Final%20AQCAC%20Agenda%2009112023.pdf

> *Paying back a decent portion of the costs with energy savings over time is great! But it must be acknowledged that an approximately 50% payback over 20 years is a far cry from expected market returns… policymakers are increasingly recognizing this, and looking to both mandates like BPS and ambitious government financial assistance programs to close the gap, so the private sector can undertake transformative work while still making money.*[13]

Another factor impacting the economics of energy efficiency projects is the level of utility rates. Pepco's Maryland rates have increased sharply, and the Company currently has a rate case proceeding pending before the Maryland Public Service Commission that will increase its Maryland rates by another $193.2 million dollars over the next three years (April 2024-March 2026).

Additionally, Pepco has a Bill Stabilization Adjustment ("BSA") which allows Pepco to adjust rates on a monthly basis to reflect either changes in energy usage or numbers of customers within a rate class without any requirement to demonstrate changes in its costs of service for affected rate classes. Pepco uses the BSA to increase its revenue collections whenever the revenues generated by a class are less than a Commission accepted average amount of revenue per customer based on forecasted numbers of customers and forecasted energy use.

When energy efficiency programs reduce Pepco's revenue collections, Pepco's BSA charges automatically increase charges to all customers within a class regardless of whether any individual customers contributed to the reduction in Pepco's revenue collections. Thus, energy efficiency programs have contributed to regular, automatic upward adjustments to Pepco's charges for electric service. The result is that energy efficiency improvements cannot be relied upon to lower customers' monthly bills.

Furthermore, Washington Gas has a rate case proceeding pending in Maryland for a $45.16 million dollar increase in natural gas distribution charges which will impact gas rates beginning in December 2023. Washington Gas also has a mechanism which, like Pepco's BSA, ratchets charges upward when customers reduce energy use. Washington Gas's rate surcharge mechanism is known as a "WNA" (i.e., a weather normalization adjustment). However, the rate adjustments permitted under that mechanism are not limited to adjustments of variations from normal weather. Energy efficiency improvements which reduce gas use will also yield monthly upward adjustments to Washington Gas's base rate charges for gas service.

VII. The County and State Should Coordinate and Align Their Goals

Both the County and the State have very aspirational climate goals with aggressive timelines and optimistic forecasts of how each will achieve these goals. For building owners in the County, they must now comply with multiple Building Energy Performance Standards that will likely conflict with the State's standards. Building owners could find themselves making significant capital investments to achieve compliance in the County, only to find that those investments are counter to what the State is prescribing. This haphazard approach to achieving these aspirational

[13] https://www.imt.org/news/uncle-ira-is-electrifying-your-public-buildings/

goals is systemic in County and State regulations, and also reflected in the lack of coordination with the local utility distribution companies. Subjecting building owners to multiple, unaligned standards that lack a clear unified vision is hindering building owners from maintaining and expanding their investments in the County.

VIII. Older Building Stock Viability

The County's plan for achieving these ambitious goals also fails to account for building age, which is a significant factor in determining compliance viability. The County has a diverse stock of commercial and multifamily buildings that serve the County's residents and businesses. There is significant concern that some of these buildings will no longer be financially viable under the new stringent standards. In these cases, the buildings will need to be razed and replaced with new construction. On the multifamily side, this will result in naturally occurring affordable housing being replaced by market rate housing that is exempt from the RSL for at least 23 years.

Another likely unintended consequence is that any reduction in GHG emissions could be wiped out because of the heavy embodied carbon in new building construction. According to the Carbon Leadership Forum, a global leader in embodied carbon modeling, new construction accounts for 11% of global GHG emissions[14]. By 2050, this number will grow to 49% of new construction emissions. Unlike operational carbon emissions, which can be reduced through EEM, embodied carbon is locked in as soon as the building is built. Furthermore, these costs do not include "end-of-life" carbon resulting from the demolition and disposal of existing buildings materials.

IX. Conclusion

AOBA shares the County's goals for improving energy efficiency and building performance and reducing greenhouse gas emissions. AOBA members have a financial incentive to capture as much cost savings through efficiency upgrades as is financially feasible. However, Building Energy Performance Standards (BEPS) should not be developed in a vacuum. Rather, it is important to consider other policy objectives as well as economic and environmental realities and seek to strike a delicate balance.

In particular, the extreme cost of compliance for multifamily buildings directly contradicts the County's adopted goals for the development and preservation of affordable housing. As outlined above, rental housing providers will be forced to pass through the costs of capital projects to tenants, thus driving up the cost of housing. Older market rate affordable properties are unlikely to be able to recoup those costs through higher rents, pushing them towards redevelopment. This is not only counterproductive to the County's climate goals, attributable to the disturbance of embedded carbon, but also to the County's housing targets. The impact of adopting the regulations as proposed would be acutely regressive, creating negative outcomes for the County's least affluent residents.

[14] https://carbonleadershipforum.org/wp-content/uploads/2019/11/Embodied-Carbon-Facts-and-Figures.pdf

Provided within the appendices are two separate case studies detailing the estimated costs of compliance with the proposed Building Energy Performance Standards (BEPS). The first is a 1960s vintage garden style apartment complex, operating as market rate affordable housing right here in Montgomery County. The second is the Steven Winters Associates Multifamily Case Study #2 prepared for AOBA. As mentioned previously, SWA compared this case study to Montgomery County BEPS and determined that the cost of complying would be $37 PSF or $25,900 for a one-bedroom apartment.

As the case studies demonstrate, the cost of energy efficient upgrades necessary to meet the proposed BEPS can total over a half a million dollars for one community, with a per unit price tag of more than $21,000, without factoring in any soft costs, safety measures or overruns. These costs of electrification can vary widely from property to property based on specific conditions, floorplan, legacy systems, the existence of lead paint or asbestos, etc. However, these case studies are demonstrative of the impact the proposed standards will have on housing affordability and the continued viability of multifamily housing communities in Montgomery County. Even spread over two 5-year BEPS cycles, this one case study would result in a rent increase of $350 per month, or roughly 20%.

For communities such as this one, this is an expense that simply cannot be borne by the market and the owners will be forced to sell, redevelop, or reposition. The consequence will be a significant loss of affordable housing stock and displacement of tenants, particularly amongst those with lower incomes. These are extremely injurious outcomes for Montgomery County as a whole, and our most vulnerable residents in particular.

The proposed standards additionally disregard current market conditions and environmental factors which render the proposed standards infeasible. Heightened vacancies and financial losses in the commercial office sector have resulted in a tightening of lending markets for both commercial and multifamily residential borrowers. Many financing and refinancing alternatives have evaporated altogether, while the loan terms for those remaining options are decidedly unfavorable. That is to say that many property owners will be unable to afford or to secure the necessary financing to proceed with the required capital improvements.

Further, the energy consumption targets identified in the proposed regulations are so drastic that they will effectively require many buildings to convert from gas-powered systems to all-electric infrastructure. Not considered, however, is whether the electric grid possesses the capacity to take on the additional load that such a widespread conversion will generate. Already, concerns exist with projected strains on the electric grid attributable to population growth, the increasing prevalence of extreme weather conditions, increased computing power demanded by the emergency of artificial intelligence, wider adoption of electric vehicles, and reshored manufacturing. Grid operators across the U.S. are already sounding the alarm that power-

generating capacity is struggling to keep up and that gaps could lead to rolling blackouts during hot or cold weather extremes.[15]

To this end, we offer the following recommendations, as detailed above:

- The EUI target for all multifamily buildings should be reduced to either the Energy Efficiency target ("EE") or ZNC-EE mid-point ("ZNC-EE") referenced in the *Steven Winter Associates (SWA) Building Energy Performance Standards Development-Montgomery County report*.
- Credit should be given for on-site renewable generation as well as off-site renewable generation and green energy purchases above the current State mandated RPS levels.
- The definition of "economic infeasibility" should be expanded to include the cost of the improvement exceeding cost savings from reduced energy over the lifespan of the equipment. Cost calculations should include the cost of debt service and inflation, and building vacancy rates should also be factored in.
- County goals and standards should be aligned with the state's Building Energy Performance Standards to avoid subjecting building owners to divergent and potentially contradictory standards.
- Abandon the "one-size-fits-all" approach and develop more reasonable standards for the County's older building stock in recognition of the costs and practicality of compliance options.
- The County/State should facilitate securing financial incentives from the federal Inflation Reduction Act (IRA) for the private sector to close the significant "pay-back" gap buildings can realize from energy cost savings. At a minimum, the County/State must assume the "heavy-up" costs associated with converting buildings to all electricity.

Without these changes, the proposed regulations represent too steep a cost for Maryland renters to absorb.

[15] Electricity Use Booms in Texas, A Harbinger for the Country." Jennifer Hiller. The Wall Street Journal. November 13, 2023.

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Prepared By:
Steven Winter Associates

Date:
October 12, 2023

BEPS Assessment for Multifamily Case Study Building 2

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LIST OF ACRONYMS

AHRA	Affordable Housing Retrofit Accelerator
AHU:	air handling unit
AOBA:	Apartment and Office Building Association
ASHRAE:	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
AWHP:	air-to-water heat pump
BBTU:	Billion British thermal units
BEPS:	Building Energy Performance Standards
BMS:	building management system
CBECS:	Commercial Buildings Energy Consumption Survey
CDD:	cooling degree days
CFL:	compact fluorescent lamp
COP:	coefficient of performance
CT:	cooling tower
DCSEU	DC Sustainable Energy Utility
DDC:	direct digital control
DHW:	domestic hot water
DOAS:	dedicated outdoor air system
DOEE	Department of Energy and Environment
DX:	direct expansion
EEM:	energy efficiency measure
EIFS	Exterior Insulation and Finish System
ERV:	energy recovery ventilator
EUI:	energy use intensity
EUL:	end of useful life
FCU:	fan coil unit
GPM:	gallons per minute
HDD:	heating degree days
HVAC:	heating, ventilation, and air conditioning
IAQ:	indoor air quality
kBTU:	one thousand British thermal units
kW:	kilowatt
kWh:	kilowatt hour
N/A:	not applicable
O&M:	operations and maintenance
PV:	photovoltaic
RCx:	retro-commissioning
RTU:	roof top unit
SCU:	self-contained unit
SF:	square feet
SHGC:	solar heat gain coefficient
SP:	simple payback
SWA:	Steven Winter Associates
US:	United States
VFD:	variable frequency drive
WSHP:	water source heat pump

EXECUTIVE SUMMARY

This report contains SWA's findings from the Building Energy Performance Standards (BEPS) Assessment for Multifamily Case Study 2. This BEPS Assessment was designed to find measures that the Client can implement to meet the current BEPS. Future BEPS compliance cycles were not considered. Findings from this audit report will be included in a companion report delivered to AOBA, but the building will be anonymized.

SWA reviewed the Portfolio Manager account, DC records, information provided from the Client, and information obtained during site inspections. This report contains:

- A discussion of potential fines for non-compliance in future BEPS cycles
- A discussion of potential risks associated with BEPS for the building
- A list of EEMs for the building, including estimations of potential energy savings and high-level scoping details
- Building system and utility use information
- Results from the review of each building's Portfolio Manager account and key DC records

The Building Energy Performance Standards consists of three compliance cycles with the performance evaluation for the first cycle occurring in 2026. BEPS cycle applicability is based on the building floor area as shown in Table 1.

Table 1: BEPS Compliance Cycles

BEPS Cycle	Building Area (SF)	Evaluation Year
Cycle 1	50,000+	2026
Cycle 2	25,000+	2031
Cycle 3	10,000+	2036

The Department of Energy and Environment (DOEE) uses ENERGY STAR Portfolio Manager to track and communicate energy performance from buildings. ENERGY STAR Portfolio Manager is a publicly available website run by the US EPA and selected by DOEE as the platform for energy performance disclosure and BEPS compliance.

BEPS uses three key evaluation metrics:

- ENERGY STAR score. A number 1 through 100 indicating a buildings relative energy performance. A score of 99 means that a building's energy performance is excellent and in the 99th percentile of similar buildings.
- Site energy use intensity (EUI) is a measure of all the energy used on-site, typically normalized to a common energy use such as kBTU/SF/year (thousand Btu per square foot per year). ENERGY STAR Portfolio Manager calculates weather normalized site EUI and Site EUI Adjusted to Current Year, which is used in the Performance Pathway.
- Source EUI is similar to site EUI, but incorporates the energy used to generate and transmit power and fuel to the site, including losses. ENERGY STAR Portfolio Manager calculates weather normalized source EUI.

SWA evaluated the building to determine if it meets the BEPS for Cycle 1 or was eligible for an exception. The BEPS targets for multi-family buildings are as follows:

- Have a 2019 ENERGY STAR score greater than or equal to 66

- If the building cannot obtain an ENERGY STAR score, it must have a 2019 weather-normalized source energy use intensity (EUI) less than 110.7 kBTU/SF/year. The building can obtain an ENERGY STAR score.

Multifamily Case Study 2 BEPS Status

The DOEE Building Energy Performance report provides a searchable database of all buildings that must comply with BEPS Cycle 1 and indicates which buildings do and do not meet the standard. **The building has a 2019 ENERGY STAR score of 62; therefore, it does not meet the BEPS.** However, the building has an ENERGY STAR score of 66 for 2022 which is same as the target score for multifamily properties.

Recommended BEPS Pathway

SWA recommends that the building pursue the Standard Target Pathway. The Standard Target Pathway is designed for buildings that are less than 20% from meeting the BEPS target based on source EUI. On the Standard Target Pathway, the building would be required to meet a target ENERGY STAR score of 66 for the first compliance cycle by achieving energy savings however building ownership sees fit. However, **for the purposes of this analysis, SWA designed measures for the building to meet the requirements of the Performance Pathway.** This report is tailored toward the Performance Pathway, which requires buildings to save 20% site EUI; the measures within this report would allow for the building to exceed the requirements of the Standard Target Pathway.

Additional details can be found in Table 2 and the Pathway Considerations section of this report. This table contains key metrics used by DOEE to evaluate how each building performs with respect to the BEPS as well as useful metrics for the building such as the amount of site or source EUI reduction needed to meet the BEPS, along with potential non-compliance fines.

Table 2: Building BEPS Overview.

Building Name	Multifamily Case Study 2
BEPS Overview	
Meets BEPS For Cycle 1[1]	No
Recommended Pathway for BEPS Cycle 1	Standard Target Pathway
Recommended Pathway Site EUI Savings (%)	1 – 5%
Backup Pathway for BEPS Cycle 1	Extended Deep Energy Retrofit
Backup Pathway Site EUI Savings (%)	30%
Evaluation Metric	ENERGY STAR
BEPS Target	66
Potential BEPS Cycle 1 Non-Compliance Fine[2]	$88,800
2022 Building Performance	
ENERGY STAR Score	65 – 70
Weather-Normalized Site EUI (kBTU/SF)	60 – 65
Weather-Normalized Source EUI (kBTU/SF)	90 – 95
Source EUI Distance from BEPS (%)	1 – 5%
BEPS Target Source EUI Based on Current Portfolio Manager Entry (kBTU/SF)[3]	85 – 90
2019 Building Performance	
DOEE BEPS ENERGY STAR Score	60 – 65
DOEE Weather-Normalized Site EUI (kBTU/SF)	65 – 70
DOEE Weather-Normalized Source EUI (kBTU/SF)	95 – 100
Source EUI Distance from BEPS (%)	1 – 5%
General Information	
Building Area (SF)	60,000 – 65,000
Year of Construction	1970 – 1975
Primary Mechanical System Type	Split or packaged DX Air Conditioning with gas fired furnace, one per apartment. Central, gas fired storage DHW heaters: one per building or one per two buildings.

[1] Determination based on DOEE's Building Energy Performance report.
[2] The non-compliance penalty is calculated based on 2021 DOEE benchmarking data. This compliance penalty would be paid in 2027. An estimated non-compliance penalty in 2032 of the same amount would occur if the Building takes no action in either BEPS cycle.
[3] Target Source EUI calculated based on the 2019 DOEE benchmarking data.

ENERGY EFFICIENCY MEASURES

The Energy Efficiency Measures (EEMS) in the table below are expected to generate energy savings and often require the allocation of capital resources to complete. These EEMs will help Horning be proactive toward future BEPS cycles.

Table 3: EEM Summary

#	Name	Annual Energy and Cost Savings					Payback with Incentives
		Site EUI Savings (%)	Electric Savings (kWh/Yr)	Natural Gas Savings (therms/Yr)	Measure Cost /SF	Lifespan (Years)	Simple Payback (Yrs)
	Low-Cost and No-cost Recommendations						
1	ENERGY STAR Refrigerator	<1%	400	-	$0.61	10	EUL
2	Lighting Upgrade	1%	19,600	-	$0.31	10	7
3	Low Flow Plumbing	<1%	-	400	$0.45	10	EUL
TOTALS (Recommended Measures)		**1.5%**	**20,000**	**400**	**$1.37**	**-**	**-**
	Potential Capital Recommendations						
1	Envelope and Air Sealing	34%	41,800	23,100	$24.35	20	EUL
2	HVAC Systems Upgrade	28%	-167,400	25,300	$18.38	15	EUL
3	Domestic Water Heater Upgrade	18%	-213,600	20,400	$16.07	15	EUL
4	Cooking Fuel Conversion	<1%	-7,700	400	$3.20	15	EUL
TOTALS (Capital Measures)		**80%**	**-346,900**	**69,200**	**$62.00**	**-**	**-**
TOTALS (All Measures)		**81.5%**	**-326,900**	**69.600**	**$63.34**	**-**	**-**

PATHWAY CONSIDERATIONS

A building can meet the BEPS by following a compliance pathway. The following table provides a summary of the most common pathways.

BEPS COMPLIANCE PATHWAYS OVERVIEW

Pathway	Compliance Requirement	Designed For	Additional Notes
Primary Compliance Pathways			
Standard Target	Meet a target ENERGY STAR score based on the space use type	Buildings that are less than 20% Source EUI from meeting the BEPS target	Building ownership is free to achieve energy savings however they see fit
Performance	Reduce the Site EUI Adjusted to Current Year by 20%	Buildings that are greater than 20% Source EUI from meeting the BEPS target	Site EUI Adjusted to Current Year translates past energy usage to current operating conditions like hours of operation and occupancy levels. This metric accounts for changes to energy using systems but excludes changes due to hours of building operation of number of people. In 2026, this metric will compare 2018-2019 operating conditions to 2026 operating conditions. Building ownership is free to achieve energy savings however they see fit.
Prescriptive	Follow prescribed pathway steps from DOEE	Building owners who prioritize risk mitigation	Building ownership must conduct required steps including implementing recommended EEMs, providing sufficient reporting and verification, and work in close collaboration with DOEE
Alternative Compliance Pathways*			
Accelerated Savings Recognition (ASR)	Achieve higher energy savings during Cycle 1 in exchange for compliance in one or more future cycles	Buildings that can achieve significant (36%+ Site EUI for 2 cycles, 49+% Site EUI for 3 cycles) energy savings during Cycle 1	Buildings must maintain at least 75% of energy savings in order to meet future BEPS and take the Performance Primary Compliance Pathway in BEPS Cycle 1
Extended Deep Energy Retrofit (EDER)	Achieve energy savings that exceed energy performance requirements over multiple cycles in exchange for additional implementation time	Select buildings including affordable housing, rent controlled buildings, and others that may	This pathway requires an EDER proposed milestone plan to be submitted to the DOEE
**** All alternative compliance pathways (ACP) require an ACP agreement between the building owner and DOEE and a primary compliance pathway to be submitted as a backup selection***			

Additional information can be found in the BEPS Compliance Guidebook.

Recommended Pathways

Standard Target Pathway

SWA recommends the building follow the **Standard Target Pathway**. The Standard Target Pathway is designed for buildings that are less than 20% from meeting the BEPS target based on source EUI and this pathway requires the ENERGY STAR score to meet or exceed the target (66 for Multifamily properties) provided in the BEPS Compliance Guidebook. The building has a 2019 ENERGY STAR rating range of 60 – 65 which results in a distance to BEPS compliance of 1 – 5% as determined by DOEE. The Standard Target Pathway also pairs well with maintaining existing natural gas-fired systems, although SWA strongly does not recommend installing new gas-fired system as described in Potential BEPS Risks.

Electrification measures like converting natural-gas fired equipment to electricity powered equipment tend to perform less effectively on the Standard Target Pathway because these measures results in an increase in source EUI due to an electricity site-to-source energy ratio of 2.8, meaning for every 1 kWh used onsite, 2.8 kWh of energy is generated and transmitted to the site. Since the Standard Target Pathway uses ENERGY STAR ratings (which use source EUI), this penalizes electrification measures, which have strong positive impacts on site EUI and align well with long-term planning around BEPS.

Extended Deep Energy Retrofit (EDER) Pathway

As an alternative, the building can choose the **Extended Deep Energy Retrofit (EDER)** pathway, which is classified as an alternative compliance pathway. This pathway allows for additional time to comply with the building Energy Performance Standards (BEPS) requirements in exchange for energy savings greater than what is required to comply with the first cycle under a standard pathway. This pathway is only available to select building types, of which affordable housing is one.

The primary benefit of the EDER pathway is time as the compliance deadline is extended. This benefit allows for the building owners to approach energy efficiency measures holistically, provides more time for funding to be gathered, and provides assurance to the building owner that the building will meet the BEPS across multiple cycles. However, it comes with a requirement to save more energy.

The energy savings required to meet the EDER pathway depends on baseline building energy performance, given by the following equation:

$$EDER\ Savings\ (\%) = BEPS\ Cycle\ 1\ (\%) * EDER\ Cycle\ (N)$$

The EDER pathway targets depend on the initial distance of the building to BEPS. The EDER savings goal is the amount of savings required to comply with BEPS under the performance pathway for BEPS Cycle 1 multiplied by the number of EDER cycles the building wishes to pursue (N) with a lower bound of 15% site EUI savings per cycle and an upper bound of 20% site EUI savings per cycle. The minimum site EUI savings requirement for the building along the EDER are 30% site EUI savings with a 2-cycle EDER and 45% site EUI savings with a 3-cycle EDER.

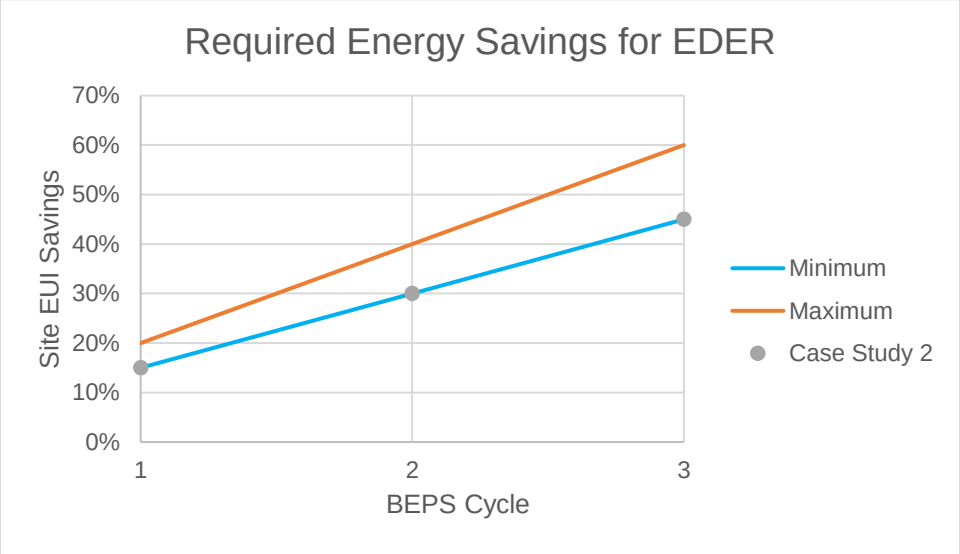


Figure 1: EDER Energy Savings

Additional Pathway Considerations

Performance Pathway

The **Performance Pathway** is an option for this facility, but certain factors make it a less favorable option. This pathway would require the building to reduce its Site EUI by 20%. The pathway still has some risk if the Site EUI is not achieved. However, the potential penalty would be reduced based on the percentage savings achieved. For example, if the Site EUI is reduced by 10%, then the penalty will be reduced by half because 10% is half of the original 20%.

Prescriptive Pathway

As the **Prescriptive Pathway** has a high level of documentation, strictly regimented deadlines, and deliverables, this pathway is not recommended except in cases where risk mitigation is an overriding concern. The Prescriptive Pathway requires the building to complete an energy audit and have it approved by DOEE prior to April 3, 2023, which has already passed.

Accelerated Savings Recognition

SWA considered how equipment lifespan may impact future BEPS cycles. Significant capital expenditures are not slated for the building. However, if funding can be obtained from the DC Green Bank or other sources, deeper energy retrofit pathways like **Accelerated Savings Recognition (ASR)** become achievable. The ASR is available as an option to help properties undertake deeper energy retrofits to simplify compliance in future cycles.

To use the ASR, a building must:

- Take the Performance Pathway in Cycle 1
- Exceed the savings target of the Performance Pathway based on information in Table 4
- Maintain enough site EUI savings (adjusted to current year) in future cycles as defined in Table 4
    - If savings are not maintained, the building has an opportunity to correct the issue before reverting to a backup pathway.

Table 4: Accelerated Savings Recognition Requirements (Table from BEPS Compliance and Enforcement Guidebook Ch. 4.2.1)

Performance Levels (Cycle 1)	Site EUI Savings Adjusted to Current Year (Cycle 1)	Eligibility for ASR	Maintained Site EUI Savings Requirement, Adjusted to Current Year
Level 1	36%	Cycle 2	27% by end of Cycle 2
Level 2	49%	Cycle 2 and 3	37% by end of Cycle 2 and 3
Level 3	59%	Cycle 2, 3, and 4	44% by end of Cycle 2, 3, and 4

Adjusted Baseline ACP: New Filtration or Ventilation

Some building performance improvement measures such as ventilation or air filtration improvements may increase energy use. DOEE allows for an adjustment to the BEPS baseline to avoid penalizing buildings for improving indoor air quality.

This baseline adjustment process is treated as an alternative compliance pathway (ACP). Using this ACP requires documentation of three items:

1. a narrative of the circumstances requiring new ventilation.
2. existing ventilation conditions.
3. and the proposed specifications.

This ACP operates differently depending on when the adjustments were made:

- If the improvements were made before the BEPS cycle (2018 to 2020), the year prior to the equipment installation will be used as the baseline.
- If the improvement was implemented during the BEPS cycle, the Site EUI baseline will be adjusted based on the calculated energy change. The energy change must be estimated through engineering calculations and/or models.

Based on the measures considered within the energy audit, SWA expects that Horning DC will not need to pursue this specific pathway. The energy savings identified for The Building far exceed the increase that would be seen from the recommended ventilation improvements as observed from SWA's analysis. This pathway would increase the documentation burden without providing any benefits towards BEPS compliance.

Potential BEPS Risks

The risks associated with BEPS compliance for The Building are as follows:

Table 5: Potential BEPS Risks

Risk Type	Risk Description	Building-Specific Factors	SWA's Estimation of Risk for:		
			BEPS Cycle 1	BEPS Cycle 2	BEPS Cycle 3
Energy Use Changes Around Occupancy	Changes in energy usage as building occupancy changes can impact the ENERGY STAR rating of a building. However, the amount of change varies by building	The building is nearly fully occupied. Since the building has distributed HVAC, HVAC energy use would vary proportionally to occupancy. Domestic water use is centralized per building and certain energy use (e.g., recirculation DHW) would be less of a function of occupancy.	Low	Low	Low
Metric Changes	DOEE may change the BEPS metric to a greenhouse gas-based metric in future cycles. This would align BEPS with other DC climate goals centered around carbon emissions reductions. In practice, this will penalize buildings that use large amounts of gas.	The building has gas-fired heating and domestic hot water loads. These loads should be electrified in case of a metric change in future BEPS cycles. This work can begin by providing additional potential capacity during necessary life-safety in-unit electrical panel upgrades.	N/A	Low (assuming electrification has already occurred, if not, high)	Low (assuming electrification has already occurred, if not, high)
Aging Infrastructure	Aging building infrastructure, if not addressed holistically, will create significant issues for future BEPS cycles.	Exhaust fans and in-unit ductwork have deteriorated over the years. These items are crucial to any building upgrade strategy. Installing new equipment without addressing these items will result in energy performance degradation.	High	High	High
Scheduled Capital Outlays	Using the planned capital budget to improve energy performance (rather than maintain systems as-is) is an effective way to meet BEPS; not doing so can create timing issues in the future.	The building has replacement of limited HVAC equipment planned over the next five years, but no comprehensive capital outlays scheduled.	Medium	Low	Low
Non-Holistic Upgrades	Large capital upgrades undertaken in one cycle with the goal of meeting one BEPS may not meet the next BEPS.	Since upgrades are currently budgeted on an as-needed basis, budgeted replacement capital can be redirected into a larger-scale infrastructure upgrade, which would then make yearly replacements not necessary for over a decade. These upgrades should be designed to maximize the chance of meeting future BEPS.	Medium	Medium	Low

SWA identified risks that may affect a building's chances of meeting the BEPS in both this cycle and future cycles. These risk factors generally apply to all buildings but are not equally likely to occur. Each risk is given a rating for each BEPS cycle.

The potential BEPS risk rating is determined from two criteria:

- The likelihood of the risk occurring.
- The severity of the risk.

Each criterion is either low if it is unlikely to apply to the risk type or high if it is likely to apply. The severity of risk relates to how significantly the building owner will be affected if the risk occurs. Examples of severity include non-compliance penalties or additional work requirements. The likelihood of occurring is SWA's estimate of if a given risk factor may occur in each BEPS cycle. This may change over time due to factors like building age, occupancy, or other circumstances.

Each of these categories are mapped onto the following matrix to determine the final BEPS risk rating. This process is repeated for each risk type during each BEPS cycle.

Table 6: BEPS Risk Matrix

Severity of Risk	Likelihood of Occurring: Low	Likelihood of Occurring: High
High	Medium	High
Low	Low	Medium

ENERGY EFFICIENCY MEASURES

The following EEM is expected to generate energy savings and often require the allocation of capital resources to complete.

EEM SUMMARY

An economic analysis was performed for each measure using historical cost estimates from similar projects. The cost savings were divided by implementation costs to determine simple payback for each measure.

Existing conditions are calculated from observations of the units sampled during the field audit. Samples are categorized based on the apartment configuration, the number of bedrooms and bathrooms. The samples are then extrapolated to represent the entire property with an apartment unit breakdown provided by the property ownership. The building has 60 – 65 apartment units, of which SWA sampled 5.

EEM 1: ENVELOPE INSULATION AND AIR SEALING

Install R-20 exterior wall insulation, increase roof insulation to R-38, replace windows and sliding doors with U-value 0.30 and SHGC 0.40, air seal all penetrations to reduce infiltration.

Project Description

This project entails a comprehensive upgrade to the envelope system at Multifamily Case Study 2. The primary building envelope consists of mass brick wall. On the interior side of the brick walls, drywall is attached to furring strips attached to the brick. Exterior walls and attics are minimally insulated, estimated at R-11 for both. Windows and doors are deteriorated and damaged. Building cavities that are used as return plenums by the HVAC system allow unconditioned outside to flow into the apartment.

The exterior air sealing on the windows and glass doors was visibly failing. The unit entry doors were metal and had failing or missing weatherstripping.

The main components of the work are as follows:

- Apply EIFS to all exterior walls.
- Increase flat roof insulation to R-38.
- Install new ENERGY STAR windows and exterior doors.
- Minimize envelope air leakage using a comprehensive air barrier continuity plan to seal existing gaps in the envelope.

Exterior Wall Insulation

SWA recommends applying an EIFS to the exterior of the building. Selecting the right materials can also minimize the difference in appearance between buildings at the property or provide an opportunity for a complete facelift. An R-20 EIFS system will provide continuous insulation at a U-value of approximately 0.05 Btu/(hr*SF*°F) with minimal thermal bridging. There are no historical preservation concerns regarding the exterior of the building limiting the implementation of this measure.

Along with installing EIFS on the exterior wall of the building that insulates the living unit from the exterior ambient conditions, rebuilding the mechanical closets in an air tight manner can reduce infiltration to the interior spaces.

EIFS should be installed per manufacturer specifications and good construction practice.

Roof Insulation

SWA observed significant water pooling on rooftops. The roof cavity was not accessible to inspect the insulation condition. Based on the building age and SWA experience, it is expected that the roof insulation (if present) has significantly degraded.

SWA recommends increasing roof insulation to a minimum of R-38 in conjunction with air sealing of the attic deck. Rigid board insulation will provide continuous coverage and will not be disturbed as it will be covered by the roof membrane.

Existing roof membrane must be removed to expose the entire roof. Any penetration from living spaces to the attic should be capped, blocked, or otherwise sealed using appropriate materials. All

top plates should be sealed to the ceiling drywall with caulk. These items should be completed in coordination with the air barrier sealing scope.

ENERGY STAR Windows and Doors

SWA recommends installing new windows and sliding porch doors using ENERGY STAR products at a minimum. ENERGY STAR windows for this climate zone are U-0.30 and SHGC 0.40. Window frames must be fully sealed to the rough window opening during installation. All unit entry doors should be replaced with U-0.17 insulated metal doors with full gaskets and airtight sweeps.

SWA found that some balcony doors cannot be fully closed due to framing issues which is a source for considerable air leakage. Replacing the sliding balcony doors may require structural repairs to straighten the door frame.

Doors and windows should be installed per manufacturer specifications and good construction practice. This includes all doors and windows adjacent to unconditioned space including the mechanical closet door to the exterior.

Air Barrier Continuity

SWA recommends a comprehensive air barrier continuity plan to minimize infiltration. Infiltration was identified (via blower door testing results) at the mechanical return, electrical and plumbing penetrations, windows, and from the mechanical closet.

Specific items in the scope of work should include:

- Hard duct and close off HVAC return from building exterior wall cavity.
- Seal all interior drywall penetrations (including junction boxes, HVAC duct boots, light switches, electrical outlets, plumbing penetrations, and exhaust fans).
- Re-seal all windows from the outside (if not done in the window replacement scope noted above)
- Seal all penetrations from living space to HVAC closet.
- Air seal ceiling penetrations – cap over any exposed junction boxes and exhaust fans, block any chases and gaps, and seal drywall to top plates.
- Bring mechanical closet into conditioned space; add $\geq$ R-5 insulation in the mechanical closet on walls to the exterior and fully air seal all mechanical closet walls to the exterior, including blocking and sealing large existing transfers or holes, where needed.

Note that performing air barrier continuity work while maintaining combustion exhaust in the living spaces presents a potential risk to occupants as it may lead to an increase of Carbon Monoxide gas inside the space.

EEM 2: HVAC SYSTEMS UPGRADE

Replace existing air handlers and condensing units. Install programmable thermostats and add mechanical ventilation with unitized ERVs.

The facility currently uses packaged split-system air conditioners for cooling purposes and natural gas furnaces for heating purposes. Most existing HVAC units have a Seasonal Energy Efficiency Ratio (SEER) of 8; units that have recently been replaced have a SEER of 12. Bathroom exhaust fans are controlled intermittently by a wall switch.

The main components of this work are as follows:

- replace the air handler and condensing units in the mechanical closet with new packaged split heat pumps installed in the mechanical closets
- repair damaged HVAC and exhaust ducts
- add mechanical ventilation using ERVs
- replace damaged bathroom exhaust fans
- install programmable thermostats in living spaces.

This work should all be performed together. As a result, these measures are combined in this EEM.

Heating and Air Conditioning Equipment

SWA recommends a full replacement of the existing HVAC systems, and repair of all associated duct systems. This includes replacing existing HVAC equipment with new split system heat pump systems. For purposes of this analysis, an EER of 13 and a HSPF of 9.5 were assumed. These packaged units provide high efficiency heating and cooling and tempered outside air ventilation based on ASHRAE ventilation rates.

The intent is to reuse existing ducts when possible; however, many ducts must be repaired. Relatively small gaps in the duct can be sealed with Aeroseal. Major duct failures and blockages must be accessed directly for repair. This typically involves cutting into the wall so repairs can be completed at the location of the issue.

Repairs are performed on one system at a time. Access is required to 100% of the duct and every register on the duct must be accessible during work on the given apartment. This will be disruptive to tenants; in general, work that is disruptive to tenants should be coordinated with other works. Each grille is removed to allow sealing the duct boot to the sheetrock, then a block is taped in its place to seal the duct opening. The contractor removes the AHU connection to the duct, and ductwork is cleaned with residential duct cleaning equipment. Clean ducts are best for sealing.

Next, larger gaps are sealed with mastic and then a smaller pressurizing fan is attached to the supply plenum and Aeroseal compound is injected into the airstream. This material fills in the small holes in ductwork to seal leakage pathways. The Aeroseal fan measures remaining leakage in real time and the contractor can see as soon as sealing is complete.

Mechanical Ventilation

SWA recommends providing mechanical ventilation to each apartment using an energy recovery ventilator (ERV). Mechanical ventilation can significantly improve indoor air quality by diluting and removing contaminants. Because providing unconditioned outdoor air to the space increases the load and can cause comfort or humidity issues, an ERV is recommended. The ERV includes supply and exhaust fans, filters, and an air-to-air heat exchanger to transfer air between the exhaust air leaving the building the outdoor air entering the building. An ERV can recover 70% or more of the

energy that would otherwise be wasted. ERVs become more important as the air barrier is sealed as described in EEM 1 because less fresh air will enter the space due to infiltration.

In this application, the split system heat pump system would provide conditioned and filtered recirculation air while the ERV unit would provide controlled exhaust and ventilation. Fresh outdoor air is treated using captured heat from in-unit exhaust which pre-conditions the outdoor air.

Ventilation improvements must be considered when implementing the Envelope Insulation and Air Sealing EEM due to the potential harm of combustion exhaust in living space.

There are a variety of ways to retrofit mechanical ventilation in existing garden-style apartments. This measure proposes a unitized approach with ERVs with new penetrations through the walls in each apartment. Design would be required to determine the best approach for the building.

Exhaust Equipment

SWA recommends bathroom exhaust fans to be replaced with new ENERGY STAR fans that meet or exceed the ASHRAE requirement of 50 CFM. All exhaust ducts should be cleared of blockages (bird nests, etc.), and new wall caps installed. This will remove excess moisture from the apartments, improve air quality, and improve tenant health.

ENERGY STAR certified kitchen exhausts hoods should be installed that meet or exceed the ASHRAE requirement of 100 cfm. Additional ducts and exterior wall penetrations will be required for this update. This will remove excess moisture from the apartments, improve air quality, and improve tenant health.

Programmable Thermostats

SWA also recommends installing programmable thermostats in each unit using ENERGY STAR recommended settings. Programmable thermostats allow for a nighttime heating setback to reduce heating energy in the winter and a peak cooling setback to reduce cooling energy and demand. Programmable thermostats can also reduce the amount of inadvertent space conditioning that occurs when the apartment is unoccupied. The thermostats should be installed in conjunction with new heat pumps to realize the savings with nighttime heat and peak cooling setbacks.

Part of the effective implementation of programmable thermostats entails educating residents on proper use of thermostats. This effort is not directly included in this measure but could include a mix of how-to guides and occasional direct interventions.

EEM 3: DOMESTIC WATER HEATER UPGRADE

Install 2.4 COP AWHP For DHW and Add Piping Insulation to Exposed Pipes

Current DHW systems are central natural gas DHW heaters located in the basement of each building with an average measured combustion efficiency of 84.1%. A total of three DHW heaters are installed onsite; one DHW heater serves a single building while the other two heaters serve two buildings apiece.

SWA recommends installing heat pump water heaters in place of the current DHW heaters. Heat pump water heaters produce 3 or more times as much hot water per unit of electricity than standard DHW heaters. This efficiency jump is possible because the heat pump moves heat from the air to the water. Standard electric resistance water heaters generate heat directly from electricity.

This measure assumes the installation of an integrated heat pump water heater (with refrigerant and water together in the same unit). Integrated heat pumps would need a place to potentially store or release heat from the domestic hot water loop, meaning integrated heat pumps require a continually available source of heat (e.g., may need to be ducted to the outside).

For the building, the existing rooms storing the DHW heaters could be reused for integrated heat pump water heaters provided that pathways to the outside are available. There must be space to install ductwork, which may be difficult if the utility closet does not have an exterior wall. Wall penetrations must be made for the supply and exhaust ductwork. Integrated heat pump water heaters may also require extra noise mitigation such as sound blankets, although this was not included in the project scope for the building.

In addition, additional hot water storage will be required. These extra storage tanks help to reduce the size of the DHW heaters but require space in the DHW rooms. This room generally exists based on site surveys but needs to be confirmed.

The DHW systems in each building are currently uninsulated. In addition, two recirculation systems need to be reconfigured: The return hot water is connected to the water heater outlet in one building, and the DHW recirculation loop is missing a pump in another building. These repairs can be completed entirely in the mechanical room.

SWA also recommends insulating the entire DHW recirculation loop to reduce heat lost to the ambient air. Insulation can be easily installed on piping in the boiler rooms. Insulating the entire recirculation loop would be more invasive and require drywall to be opened so that hot water pipes could be accessed. This work could be coordinated with other EEMs to minimize overall disruptions.

EEM 4: APPLIANCE RETROFITS

Replace with ENERGY STAR Rated Refrigerators

SWA recommends replacing all refrigerators with ENERGY STAR rated models. New high efficiency models consume approximately one third of the energy of older models. SWA also recommends implementing a purchasing strategy that limits the number of appliance models in use. This would aid maintenance technicians in making repairs and sourcing parts.

Based on the site visit sample, approximately 50% of units should be upgraded.

EEM 5: LIGHTING UPGRADE

Retrofit In-Unit Standard Screw Base Bulbs with 9W LEDs and Common Area Fluorescent T8s with 9.5W LED Tubes.

SWA recommends replacing outstanding fluorescent lighting with LED and installing bi level lighting in stairwells.

Most in-unit light fixtures use standard medium base screw-in bulbs which already use LED bulbs. Most kitchens use T12 fluorescent tube lights that can be replaced with LED fixtures. Common area lighting is not standardized and generally can be upgraded to LED fixtures.

EEM 6: LOW FLOW PLUMBING

Install WaterSense 1.5 gpm showerheads, and 1.0 gpm bathroom faucets.

SWA recommends installing low flow aerators in all bathroom faucets and installing 1.5 gallons per minute (gpm) shower heads. SWA also recommends installing low-flow aerators in kitchen faucets. These will decrease water consumption and DHW costs.

The apartments currently have a mixture of standard and low-flow fixtures. Some units are also missing aerators.

EEM 7: COOKING FUEL CONVERSION

Replace existing gas stoves with electric induction models, upgrade electrical connections as needed to support this load.

SWA recommends a cooking fuel conversion from natural gas to electric induction ranges. Electric resistance stoves are not recommended due to their residual heat and lower energy efficiency. This measure may require additional electric work to provide sufficient power to the apartment. Pricing for this work is generally not included, but the receptacles required to power the new induction cooking units are included in this pricing.

SWA also recommends installation of kitchen exhaust hoods with ductwork to the outside. While this measure does not save energy, it is a key component of ensuring occupant health.

All existing ranges are natural gas with an estimated cooking efficiency of 30%. Induction ranges would increase the cooking efficiency to 75%. In addition to that, induction ranges will have no residual heat that would lower cooking energy cost and cooler kitchen area compared to an electric resistance stove. This measure would reduce the energy required for cooking but may result in a slight utility cost increase due to the different fuel costs. This measure is necessary for the full electrification of the property.

UTILITY USE HISTORIES

SWA gathered two years of whole building data, inclusive of all house meters and residential tenant accounts, for analysis. Data listed below summarizes raw totals or weather normalized against the most recent ten-year average, where noted. Note that consumption data reported in this section may differ from Portfolio Manager due to SWA's weather normalization algorithm.

Electricity is individually metered with meter stacks located in each building. House meters account for electricity used in common areas. Natural gas is master metered. Utility usage was taken from the DOEE Benchmarking data provided by DCSEU.

Utility data is shown below for the electricity and natural gas consumed at the building. Table 7 below shows the electric and natural gas consumption and cost information for the most recent twelve months of each analysis period.

Table 7: Building Energy Consumption

Total Energy Consumption and Cost							Energy Use Intensity kBTU/ft²		
Energy Type	*Total Energy Consumption*		*Cost*	*% Total Site Energy*	*% Total Source Energy*	*% Total Cost*	*$/Site MMBtu*	*Site*	*Source*
Aggregate Electricity	790,581	kWh	$117,124	29%	52.1%	63.2%	43.42	28.0	78.4
Natural Gas	66,269	Therms	$68,118	71%	47.9%	36.8%	10.28	68.8	72.0
Total			$185,242	100%	100%	100%	19.87	96.8	150.5

Aggregated meter data was obtained for individual tenants. This aggregated data does not include cost data. During this analysis period, the facility paid an average of $0.15/kWh for electricity and $1.03/therm of natural gas. For this report tenant electricity rates were assumed to be equivalent to common area electricity rates. Using this approach, electricity accounted for $117,000 and natural gas for $68,000 of annual utility spend.

The weather normalized electricity distribution for 2018 and 2019 is given in Figure 2 and weather normalized natural gas distribution in Figure 3. Electric baseload consumption is about 40,000 kWh for both years. The baseload consists of energy consumption that is not related to space heating and cooling and will generally be consistent throughout the year. A higher baseload would mean that the building has significant lighting and plug loads consumption that may require reduction measures. Electric consumption increases during the summer (between April and October) as the cooling load increases, peaking in July at around 131,000 kWh in 2019. Natural gas baseload consumption is around 2,000 therms for both years. Natural gas consumption increases during winter (between January to April and October to December) as the heating load increases peaking in January at nearly 14,000 therms in 2019.

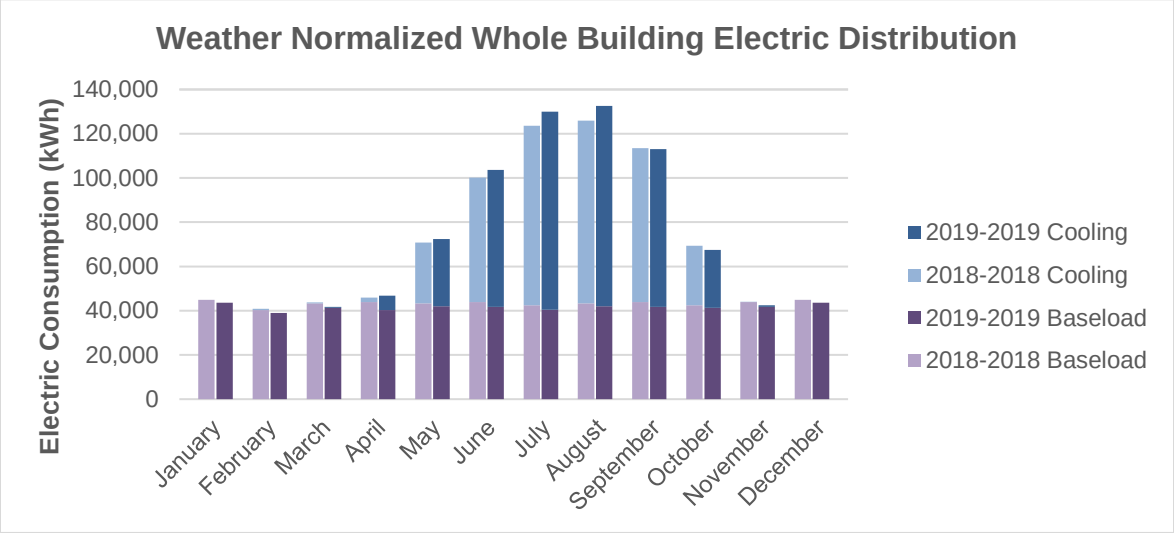


Figure 2: Weather Normalized Electricity Distribution

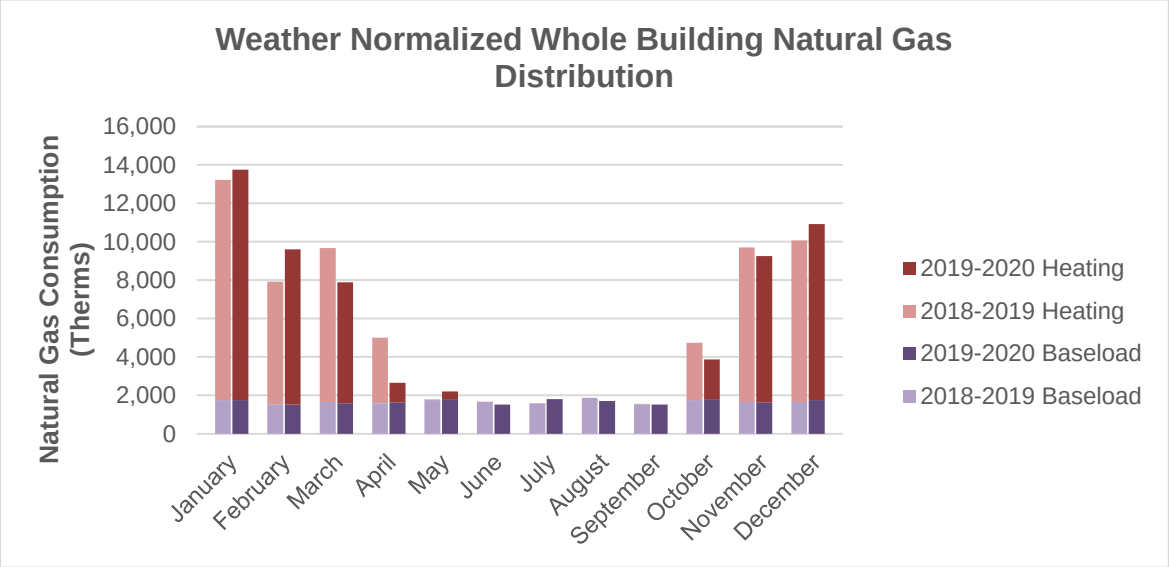


Figure 3: Weather Normalized Natural Gas Distribution

END USE BREAKDOWN

The following table and figures define various energy end uses within the building and associated estimated breakdown percentages.

Table 8: Energy End Use Description

Energy End Use Descriptions	
Space Heating	Space heating is provided by natural gas furnaces located in mechanical closets in each apartment unit.
Space Cooling	Space cooling is provided by split-system air conditioners located in mechanical closet in each apartment unit.
Air Distribution	This electricity is associated with the air handling units, exhaust ventilation, and any fresh air ventilation
Water Distribution	**Not applicable to this property.** This electricity is associated with pumps used in the building including irrigation, DHW recirculation, and any other water pumps.
DHW	Centralized natural gas water heaters are used for SHW distribution.
Conveyance	**Not applicable to this property.** This electricity represents conveyance systems including elevators and escalators.
Lighting	Electricity used for lighting the facility.
Plug Load	Electricity attributed to plug loads, appliances (excluding refrigeration and cooking), and other miscellaneous equipment.
Process Load	**Not applicable to this property.** This electricity represents industrial, manufacturing, or assembly processes.
Refrigeration	Refrigeration at this facility is fully provided by in-unit refrigerator/freezer combination units.
Cooking	This facility uses natural gas cooking equipment.
Information Technology	**Not applicable to this property.** This electricity accounts for extensive IT uses such as data centers, server farms, and other high load computing equipment.

Figure 4 shows energy consumption at the building broken down across end uses under baseline conditions. The percentage values depicted in the breakdowns were calculated by spreadsheet analysis using a methodology that accounts for the equipment serving the specified end use, its rated capacity, and the estimated hours of operation.

The largest energy consuming system is space heating. Other major energy consuming systems are domestic hot water, plug loads and space cooling. Plug and other miscellaneous loads generally provide low potential for energy reduction as they rely on occupant activity. Figure 4 indicates that the most potential for energy savings can be found in HVAC and DHW systems, especially gas-fired systems including space heating.

Table 9: Baseline End Use Summary

End Use	% of Total kBTU
Space Heating	53%
Space Cooling	9%
Air Distribution	2%
DHW	23%
Lighting	2%
Plug Loads	10%
Refrigeration	1%
Cooking	0%
Total	100%

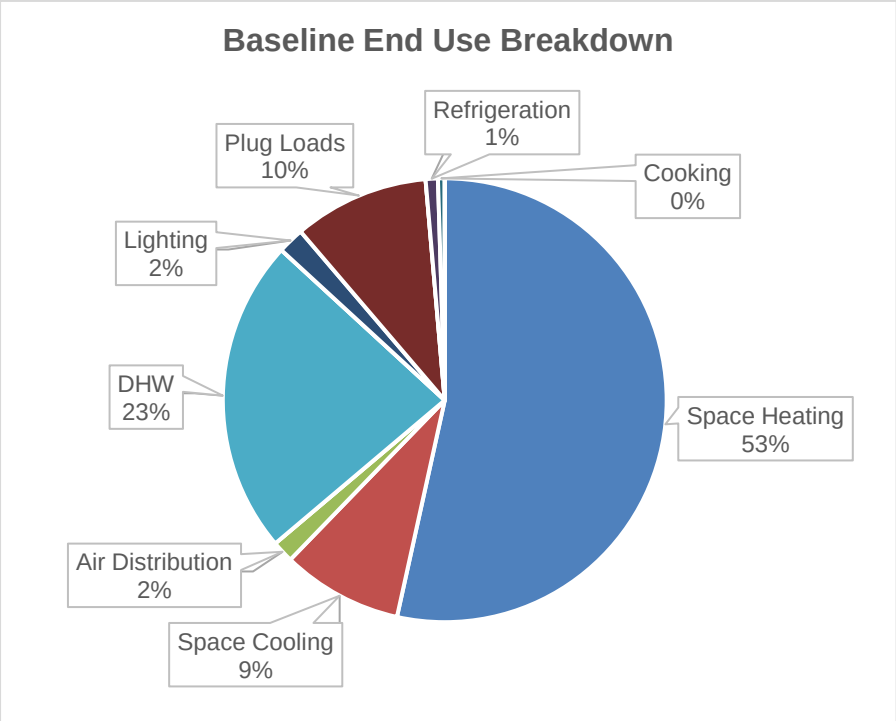


Figure 4: Baseline End Use Breakdown

POST- EEM END USE BREAKDOWN

Table 10 defines various energy end uses within the building and associated estimated breakdown percentages after all EEMs have been implemented.

Table 10: Post-EEM End Use Summary

End Use	% of Total kBTU
Space Heating	27%
Space Cooling	10%
Air Distribution	5%
DHW	23%
Lighting	3%
Plug Loads	28%
Refrigeration	2%
Cooking	1%
Total (Weather-Normalized)	100%

The values in Figure 5 are percentages of the proposed total consumption. The overall consumption is less than the baseline end use breakdown chart.

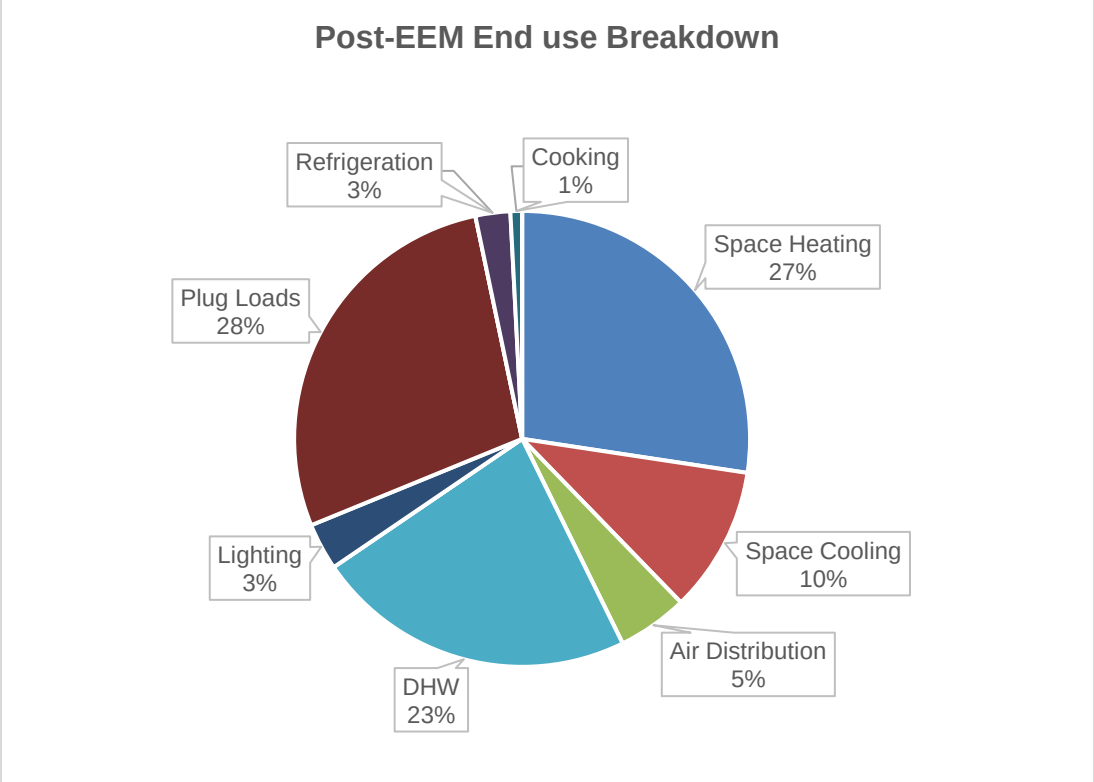


Figure 5: Post-EEM End Use Breakdown

BUILDING DETAILS

Table 11: Building Information Overview

Multifamily Case Study 2	Characteristic
Audit Dates	Full Audit: April 8, 2022 – July 20, 2022 On Site: April 13-14, 2022
Year of Construction	1970 – 1975
Apartment Area (SF)	50,000 – 55,000
Common Area (SF)	12,000 – 12,500

BUILDING SYSTEM INFORMATION

The following are descriptions of the building's systems, operating requirements, and occupant needs. This information was gathered through onsite observations, measurements, and engineering calculations where applicable.

The building is a garden style apartment complex consisting of five buildings; The building is part of a larger complex.

The buildings are a brick exterior construction with flat roofs. Apartment unit balconies are accessible through a sliding glass door. Each building contains ten to fifteen apartment units. The floor plans are one bedroom, one bathroom and two bedroom, one and a half bathrooms.

Solar photovoltaic (PV) panels are installed on one building and could be added to the other four buildings. Domestic hot water (DHW) is centralized to either one building or a pair of buildings. Space conditioning equipment is unitized. Natural gas is used for space heating and DHW heating. Common area laundry is available in each building. Common areas do not have space heating or cooling.

Electricity is directly metered with meter stacks located in the DHW boiler rooms of each building. Natural gas is master metered at the building level. Buildings with a shared DHW system also have a shared gas meter. Natural gas meters are located in the boiler room. All buildings share a water meter.

Building Envelope

The primary building envelope consists of mass brick wall with interior furred out walls. The exterior above and below grade wall structure contain substantial openings leading to the interior. Specifically, this was noted in the patio mechanical closets and at below grade wells and mechanical penetrations. These openings allow air and water intrusion to interior ceiling cavities and occupiable spaces. Additionally, substantial water leakage was noted in the basement of Building B which appeared to be caused by a lack of continuous below grade weather barrier.

Baseline energy models were constructed using onsite observations:

- The foundation type is assumed to be uninsulated slab on grade.
- The mid-level and top-level floor construction is assumed to be uninsulated wood frame floor. Concrete is poured between the wood framing.
- The existing above-grade wall is assumed to be mass brick furring wall

- The existing windows and sliding doors have a U-value of 0.870 BTU/ft^2·°F·h and SHGC of 0.730.
- The interior shading for existing windows and sliding doors is assumed to have 0.85 winter shading and 0.70 summer shading.
- The construction of doors is assumed to be hollow metal insulated door with a U-value of 0.283 BTU/^{2}·°F·h.
- Roof construction is assumed to have an R-value of 11 ft^2·°F·h/BTU.
- All bottom and mid-level unit ceilings were modeled as adiabatic and therefore do have any effect on heat transfer. The spaces above these unit ceilings (other apartments) would be conditioned, so in order to simplify the analysis temperature differences were ignored.

Heating, Ventilation, and Air Conditioning

Apartment heating and air conditioning systems consist of forced air furnaces with through wall condensers. These units are located in a patio mechanical closet in each apartment and are fully ducted. These split system air-conditioners are controlled by non-programmable thermostats in each apartment.

Apartment ventilation consists of intermittently operated bathroom exhaust. Bathroom exhaust fans were tested and were shown to be underperforming in total airflow. No mechanical ventilation is provided.

Lighting

In-unit lighting primarily consists of standard fixtures with medium base screw-in LED bulbs. Most kitchens use T12 fluorescent fixtures.

Common area and back of house lighting is a mix of fluorescent and LED light fixtures. Entryways and stairwells are illuminated by a mix of pin base CFL, T5 circline, and screw-in LED bulbs. Laundry rooms use T12 fluorescent fixtures.

Common area lighting is always on. These values were determined by referencing the DC Technical Resource Manual (TRM) for consistency.

Exterior fixtures are equipped with LED bulbs and controlled by photocells.

Domestic Hot Water

The DHW is centralized to one or two buildings where physically connected buildings share a DHW system. The arrangement is as follows:

- Building A is served by one water heater.
- Building B and Building C are served by one water heater.
- Building D and Building E are served by one water heater.

The DHW systems that serve Building A and Buildings D have a recirculation pump that enables when the water heater engages. Building A is piped such that return hot water is connected to the outlet of the water heater. The DHW system at Building D is configured such that the hot water return is connected to the inlet of the water heater. The system for Building C does not have a recirculation pump installed, although piping for recirculation is installed. The systems with recirculation pumps are assumed to run based on tenant demand.

Plug Loads and Process Loads

Common area plug loads are minimal. Laundry facilities in each building include two washing machines and two natural gas dryers.

In-unit plug loads are typical residential-type loads. The largest loads are appliances such as refrigerators and HVAC equipment. This equipment is owned by the Client and can be improved without requiring action from tenants.

Resident plug loads include standard electrical devices such as TVs, additional lighting, and other electronics. SWA did not observe any tenant owned high energy consumption equipment.

Gas-fired stoves are present in each unit. Their range hoods are recirculating and are not ducted to the outside.

There are no powered conveyance systems.

OVERVIEW AND METHODOLOGY

MEASURE IDENTIFICATION METHODOLOGY

Energy efficiency measure (EEM) lists were compiled based on the results of the site walkthroughs, operator interviews, and collection of data necessary to perform the technical and economic analyses. This evaluation was completed to ASHRAE 211-2018 standards through spreadsheet analysis. Prior to implementation, confirmation of projected savings and cost may be required for capital intensive measures.

Energy efficiency measure calculations are interactive following the 'Measure Interaction' and 'Measure Order' subsections of the ASHRAE 'Procedures for Commercial Building Energy Audits' document. An energy saving measure can often increase or decrease the consumption of another.

SWA considers measures that increase building ventilation first, as these measures can also impact the effective baseline used for the building. If a building has insufficient ventilation, this presents a health and safety risk for building occupants. As a result, resolving this issue takes priority. However, increasing building ventilation may also increase building energy usage.

After accounting for changes to building ventilation, SWA typically considers load reduction measures, followed by energy efficiency improvements. This approach ensures savings are not double counted, and that load reductions can better inform load sizing and overall future energy usage by applying energy efficiency improvements to a reduced energy load. In some instances, owner requirements will change the order in which interactivity is calculated.

The following assumptions were used in calculating the savings:

- Building energy usage patterns follow 2018-2019 baseline data, subject to ventilation changes as noted above.
- Energy costs remain relatively stable.
- Building systems operation remains relatively unchanged (unless change is related to a recommended EEM).

An economic analysis was performed for each measure using historical cost estimates from similar projects and pricing solicited from vendors. The cost savings were divided by implementation costs to determine simple payback for each measure.

Electrification Case Study

1960s Vintage 24 unit Garden Style Apartment with Split System (Gas Forced Air / Electric AC)

Scope of Work	Total Cost	Cost/Unit
Electrification - Circuit Upgrades (does NOT include Pepco Service Costs)		
Labor / Materials - 1200 Amp Service Installation	$ 42,420.00	$ 1,767.50
Labor / Materials - Service Feeder Installation	$ 10,500.00	$ 437.50
Labor / Materials - 200 Amp In Unit Subpanel Installation	$ 50,108.33	$ 2,087.85
Labor / Materials - 30 Amp Circuit Installation to support Electric Dryer	$ 7,233.33	$ 301.39
Labor / Materials - 225 Amp Circuit Installation to support Electric Water Heating System	$ 84,000.00	$ 3,500.00
Labor / Materials - Electric Stove, Furnace, and Air Conditioning Circuit Installation	$ 40,110.00	$ 1,671.25
Total Cost - Electricifcation - Circuit Upgrades	**$ 234,371.67**	**$ 9,765.49**
Equipment Replacements		
Building Water Heater Upgrade / Installation	$ 52,150.00	$ 2,172.92
Building HVAC (Heat Pump) Upgrade / Installation	$ 204,501.00	$ 8,520.88
In Unit Stove (GE Electric) Replacements / Labor	$ 17,133.60	$ 713.90
Laundry Room Replacements / Labor (Speed Queen)	$ 9,761.40	$ 406.73
Total Cost - Equipment Replacements	**$ 283,546.00**	**$ 11,814.42**
Total Cost - Circuit Upgrades & Equipment Replacements	**$ 517,917.67**	**$ 21,579.90**

Note: This case study is representative of the cost to upgrade in building circuitry and equipment installation and does **not** include: 1.) infrastructure upgrade costs associated with utility required work to accommodate increased electric demand, 2.) financing costs, 3.) permits and engineers fees, 4.) compliance filings, 5.) general contingency, 6.) equipment and labor inflation contingency, and 7.) construction management fees

November 30, 2023
From: Alan P. Zukerberg, 5225 Pooks Hill Rd, Apt 128 S, 20814
To: energy@montgomerycountymd.gov

Re: MCER No. 17-23 Proposed Montgomery County Department of Environmental Protection Regulation *Building Energy Performance Standards Regulation.*

These are my comments on the proposed Building Energy Performance Standard (BEPS), regulations that would implement Article 6, of Chapter 18A, Environmental Sustainability.

Background: I am a 77-year-old who recently moved with my wife to this county to be near my son and his family. We live in an older cooperative that offers a wonderful lifestyle. In my individual capacity I oppose the applicability of this initiative to our cooperative and much of the text of these rules and suggest that rules/applicable laws should not apply to residential multi-family high-rise cooperatives and condominiums. I suggest that you will be hearing from the Board of Directors of the cooperative wherein I reside *albeit* it will be after the comment period and will hopefully support my remarks. I reside and I am a shareholder at The Promenade (Promenade Towers Mutual Housing Corporation). The Promenade consists of twin 18 – story towers containing 1,071 residential units and an arcade and lower level with building amenities and commercial tenants and professional offices. It was built in 1973 and contains gas fired boilers providing hot water and air-conditioning that must be turned on for the entire building as distinguished from each unit owner being able to initiate the heat for the season or air-conditioning for the season. Many units do not have upgraded electrical boxes. It is not a fully sprinklered building and it currently faces compliance with the Sprinkler Mandate.

1. **Residential multi-family condominiums and cooperatives should be exempt from the laws/regulations.**

I support governments' goal toward reducing energy consumption and greenhouse gas emissions, however these goals, and the expenses to obtain them should not apply to older multi-family high-rise condominiums and cooperatives. The rules, in all probability will create problems that will threaten their viability as reasonable housing alternatives and naturally occurring retirement communities.

Many owners of older condominiums and cooperatives include people with modest financial resources -- seniors on fixed incomes, first-time home buyers, and families. Condo and coop owners may not be able to deduct the cost of compliance with government mandates from taxes. *I understand that it is well known the single-family homes use more energy than the high-rises. For most of the reasons set forth herein, these condos and coops should be exempt.*

Given the lower energy usage of households residing in multi-family buildings, I wonder why this legislation is targeted at multi-family households and not single-family homes which use significantly more energy. The County should be encouraging people to move to multi-family buildings in transit-friendly neighborhoods, rather than discouraging them by placing additional cost burdens upon the residential buildings that according to the EPA are currently most climate friendly.

2. **Required showings are unreasonable**:

If we enter into a BPIP, it is not feasible to record 1,071 covenants, nor is it reasonable to ask our corporation to enter into such on behalf of each of the 1,071 units.

Showing economic infeasibility "definitively" will be extremely difficult, if not impossible for a condominium or cooperative. It would be burdensome and a violation of people's privacy for management to determine the economic situation of each owner to establish economic infeasibility "definitively." Third-party verification would be very expensive and difficult.

It is not clear what infeasibility means for a common ownership community. For example, is economic infeasibility established if 50, or 25, of our owners would have to declare bankruptcy or insolvency if they were assessed an amount sufficient to pay for their allocated share of the costs of meeting all the BEPS standards? Even if they declare bankruptcy or insolvency, that will not stop our corporation's obligation to comply. We would have to raise the assessment high enough to cover the amount allocable to those who cannot afford the payments, which would cause those who can afford larger payments to pay more than their share, and theorectically cause the bankruptcy of still more owners?

Perhaps an objective standard should be established that is sufficient for a presumptive showing of economic infeasibility for a condominium. Economic infeasibility could be defined as an amount that would cause condominium/cooperative assessments to increase by an amount that would not be

permitted under the County's rent stabilization law if condominium fees were rent payments, i.e. the increase in the Consumer Price Index for All Urban Consumers for the Washington-Arlington-Alexandria (CPI-U) + 3%, capped at 6%.

The characteristics of "circumstances outside the owner's control" should be defined more clearly. With enough money, there is very little that is outside an owner's control in any building, but measures should not be required if they are unaffordable, would make no economic sense even if owners were able to afford the measures, or provide marginal benefits at an exorbitant expense. One factor that should be considered, in addition to affordability, would be to look at the payback period or rate of return. Perhaps any required improvements to help the environment should be treated as payable over a 40-year term. Is it possible to finance these via bond initiatives?

The Promenade has hundreds of homeowner/shareholders. It is unreasonable to require us to make hundreds of showings and process hundreds of financials. We would be stigmatized merely for asking.

3. **Recommended Amendment to the Proposed Rule.**

If Condominiums and Cooperatives **are not exempted**, they should be placed in their own category - "Other – Condominium/ Cooperatives" because these buildings have characteristics and are organized in a way that will make it difficult for their resident homeowners to comply with new standards and adopt new technologies without incurring debilitating costs. An attainable final performance standard should be established that acknowledges that multi-family communities generally produce fewer emissions than communities of single-family homes and that is suitable to the unique characteristics of condominiums/cooperatives. Without this modification, the proposed rules may ultimately increase the cost and availability of moderately priced, affordable housing in a very expensive community.

4. **The Need for Regulatory Relief.**

Under the proposed regulations, the County is attempting to reduce greenhouse gas emissions by requiring energy use reductions only from multifamily and commercial buildings, mirroring the State law. Condominiums and cooperatives have been placed in a category that does not recognize this type of ownership and produces specific and unfair challenges for cooperatives and condominiums that do not impact other types of buildings. **Allowing a separate category and emission**

reduction target for condominiums and cooperatives will acknowledge that multifamily buildings are already more efficient than communities of single-family homes. Studies have found that the average suburban home produces more than double the emissions of households in multi-family buildings. In large, populated urban areas, where denser forms of housing exist, vehicle ownership rates are lower, the typical muti-family home produces roughly 50% below the average single-family home. The County's proposed regulation mirrors State legislation and imposes no requirement to lessen energy consumption on single-family homes. It is unfair that condominium and cooperative homeowners are the only homeowners required to bear an unreasonable burden to further reduce emissions.

According to DEP's private building inventory, there are 122 condominiums and cooperatives in Montgomery County or less than 20 percent of multifamily buildings (649). It seems reasonable that the county could research and establish a reasonable and affordable standard for condominium/cooperative buildings of varying ages and design.

5. **Challenges facing condominium and cooperative homeowners to reduce emissions are more complicated than those facing other multi-family building owners.**

While multi-family buildings may use more energy and produce more emissions than offices and other commercial buildings, this is in part due to the ability of offices and commercial buildings to reduce energy usage after work hours, weekends, or holidays. Under the proposed rules, there are higher reduction targets for multi-family buildings than office or commercial buildings that fail to consider that residential buildings must provide heat and cooling to every unit 24/7 and provide cooking facilities in every unit 365 days out of the year.

Commercial apartment buildings may have the ability to pay for building improvements by increasing rent, claiming tax losses, or obtaining commercial loans. Condominium and cooperative owners live in their units and do not have the same resources. Improvements (as distinguished from repairs) are paid by the owners, typically through special assessments and fees assessed to meet reserve compliance. Increased cost to meet regulatory requirements can put individual owners into financial distress and ultimately affect the overall financial health of the cooperative. Currently the state and County governments are stressing residents with the sprinkler mandate, and these proposed regulations will cause greater unnecessary anxiety to many residents.

The owners of apartment buildings can make uniform, practical decisions to reduce emissions, take loans to pay for improvements over time and recover costs by passing them on through rental increases. Unlike residential cooperatives and condominiums, the management has access and control over the apartments. In cooperatives for our purposes, homeowners have control of their units with restrictions imposed under the bylaws and share in the expense of common elements jointly. Unlike other commercial buildings and other multifamily buildings, cooperatives may be limited in their ability to order uniform modifications within the units that could reduce energy usage without amending the bylaws in a vote by unit owners. Our owners may oppose such a vote.

6. **Due to construction and building designs that did not contemplate the need to reduce greenhouse gases, older multi-family buildings are not easily adapted to energy saving technologies.**

Compliance will create the need for massive investment by homeowners who did not anticipate these costs. For example, a recommendation may be to reduce carbon emissions by requesting that cooperative homeowners replace gas stoves with electric stoves. All kitchens in the Promenade have gas stoves, and there are some gas fireplaces. Installing electric stoves is forbidden because the building's electrical system cannot safely support electric stoves. This would necessitate electrical upgrades to each unit and the entire complex. Another challenge is that individual units are not metered, and heat comes *via* a shared boiler. Heat must be ended at a certain time so that the shared air-conditioning may be turned on. We cannot individually turn our heat on until the heat is turned on for the entire complex and the same applies to air-conditioning. The proposed rules would force buildings like the Promenade to make costly major changes to electric, heating and cooling systems, and to insulation and windows. These improvements will be paid for by the shareholders and may require some homeowners to take substantial loans to upgrade units that may already be mortgaged.

The expense of these improvements will compete with the costs of replacement/update of aging systems as well as other upgrades required by county regulations. For example, the Promenade is in the process of relining its 50-year-old cast iron drainpipes at a cost of over $7 million. We face replacing our windows and exterior doors at an estimated cost of $18 million. We have reason to believe that the cost for the installation of a required sprinkler system will be between $50 - $100 million. ***The government is continuing to impose impossible burdens on its residents.***

7. **Funding.**

The proposed regulations also require that to obtain a BPIP, the owners consider "all possible incentives, financing and cash flow resources available." It is unclear how a cooperative would demonstrate that it has met that requirement. There are a very limited number of lenders who specialize in lending to cooperatives. Would it require proof that the cooperative had applied for all available government loan programs? Would it require the coop to show proof that lenders had rejected its applications? Negative financial information that is made public could make our building unattractive to home buyers and force sales to investors who would likely withdraw the units from the market and offer them as rental units.

The Promenade may have to increase assessments and perhaps seek low-cost loans and/or grants to reach compliance, as well as expert advice to identify technology that will result in emission reductions. I would recommend that for these laws/regulations to be sustained, the state and County absolutely must provide huge amounts of financing and incentives for emissions reductions. If they cannot, residential condominiums and cooperatives should not be obligated to comply. Financing and incentives are particularly important because all affected entities will be competing for loans and grants against commercial buildings and other multi-family buildings, including affordable housing, nursing and other care homes, senior living communities, medical facilities, schools and adult education buildings that have more obvious needs. Competition will lessen the availability and increase funding costs.

If governments will not exclude multi-family condominiums and cooperatives, caps should be placed on the amount of expenditure per unit required by each cooperative/ condominium building of no more than $100/unit/year. It is impossible for condominium/cooperative buildings to demonstrate financial inability. If governments insist that multi-family condominiums and cooperatives comply, then I suggest that:

1. the period of performance of the Business Performance Improvement Plan should have great flexibility to accommodate heightened complexity of retrofits in larger scale older multi-family buildings and longer transition periods; and

2. The Business Performance Improvement Plans in larger scale older multi-family buildings with more complex requirements should be explicitly tied to tailored extremely favorable and available financing

options and incentives that provide preferential access to much longer term, lower cost financing for improvements at scale; and create county-wide volume purchasing schemes that enable these older, larger multi-family buildings to benefit from aggregated demand and discounted volume buys of next generation electric-based infrastructure components and heat pumps for individual units; and

3. Given the tripling of heat waves predicted for Montgomery County generally between now and 2050, the transition from inflexible building forced air systems based on predictable seasonal transitions to more unit-customizable heat pump systems that can better adjust to year round temperature volatility must be both a public health priority (particularly in larger older multi-family buildings with high populations of senior citizens most vulnerable to heat waves) and a top objective of County green technology diffusion policies.

4. The County should closely collaborate with a select sample of the County's largest older multi-family buildings in demonstration projects to:

    a. Determine the operational feasibility of proposed regulations and finetune those regulations to develop a more evidence-based regulatory regime;

    b. Distill best practices in green technology transitions for these more complex implementations that can apply to a larger sample of County buildings;

    c. Finetune financial incentives and beneficiary selection criteria

Alan P. Zukerberg, Esq.
5225 Pooks Hill Rd
Apt 128 South
Bethesda, MD 20814
410.241.9970

November 30, 2023

Emily Curley, LEED AP O+M, CEM
Building Energy Performance Programs Manager
Montgomery County Dept. of Environmental Protection
2425 Reedie Drive, 4th Floor
Wheaton, Maryland, 20902

RE: Proposed Montgomery County Building Energy Performance Standards (BEPS) Executive Regulation 17-23

To Whom it May Concern,

AstraZeneca appreciates the opportunity to provide feedback regarding the proposed Montgomery County Building Energy Performance Standards (BEPS) Executive Regulation 17-23. The perspective offered here is based on learnings from our own energy journey, but is likely applicable to others in the life sciences industry in the County.

AstraZeneca is a global, science-led biopharmaceutical company focused on the discovery, development, and commercialization of prescription medicines in Oncology, Rare Diseases, and BioPharmaceuticals, including Cardiovascular, Renal & Metabolism, and Respiratory & Immunology. Based in Cambridge, UK, AstraZeneca operates in over 100 countries and its innovative medicines are used by millions of patients worldwide.

AstraZeneca's flagship global Ambition Zero Carbon program aims to achieve net zero greenhouse gas (GHG) emissions by maximizing energy efficiency, shifting to renewable energy sources, and investing in nature-based removals to compensate for any residual footprint. We are on track to reduce GHG emissions from our global operations (Scope 1 and 2) by 98% by 2026 from a 2015 baseline.

Gaithersburg is home to one of AstraZeneca's four strategic R&D Centers and is the workplace of a diverse community of over 5,000 individuals. AstraZeneca's Gaithersburg campus totals approximately 1.2 million square feet in seven buildings. Approximately 20% is leased space. Our largest building, located at One MedImmune Way, is an owned mixed-use building with R&D laboratories, clinical manufacturing space, and offices. Clinical manufacturing and laboratory activities are also performed in two separate leased buildings. The campus maintains an ISO 50001 certified Energy Management System and has been certified to the US Department of Energy's Superior Energy Performance (SEP™) program since 2014, which means that our energy performance improvements have been verified by an independent third party. The Gaithersburg campus has undergone four energy audits and undertaken over $7M in energy reduction projects since 2015 in support of both AstraZeneca's Ambition Zero Carbon program and our campus energy management system goals.

Despite extensive energy auditing, focused energy reduction projects, and verified energy reduction achievements, we are concerned about the ability to meet the proposed energy use intensity (EUI) for

our buildings which house laboratory and clinical supply manufacturing activities. "Characteristics inherent to the building's operations" (as phrased in the proposed regulation) may prevent achieving the final performance standard, and may prevent achieving a trajectory of improvements which might be required. Benchmark studies show that space conditioning (HVAC) requirements in the pharmaceutical industry to maintain critical environments with respect to temperature, humidity, room pressurization, cleanliness and containment can result in EUI that are an order of magnitude higher than commercial buildings.[1] Reducing excess air change rates across multiple areas while maintaining accordance with ASHRAE and CDC guidance is one of the most involved and impactful reduction efforts completed at the Gaithersburg campus to date. Continued reduction will become limited.

If we are unable to achieve the required EUI, our compliance mechanism pursuant to the proposed Regulation will be to submit building performance improvement plans (BPIPs) for Department approval. We are concerned that a repeated need to submit a BPIP and await its approval may negatively impact AstraZeneca's ability to operate in Montgomery County and affect considerations for future expansion. In the State BEPs regulation, the Alternative Compliance Pathway (fee for excess of net direct emissions) enables business decisions to be based on a concrete and predictable consequence, rather than a qualitative Department judgement.

We would also like to note that EUI tells only part of the story of the Gaithersburg campus energy journey. From 2015-2022, campus portfolio EUI reduced only about 10% despite more than $7M in energy reduction investment. However, during that time our workforce increased 26%, the laboratory workforce increased 52%. 'Densification' (doing more in the same space) has been employed as a deliberate sustainability strategy, since the most sustainable building is one that does not need to be built. In 2023, we further densified office activities, ending leases for approximately 83,000 square feet. Additionally and significantly, AstraZeneca will implement Power Purchase Agreements for renewable electricity and, in collaboration with Vanguard Renewables, delivery of renewable natural gas (RNG) to the site by 2026.[2]

Additional Comments and Recommendations Regarding Regulation 17-23

The proposed Regulation references 'interim' performance standards in several locations, but does not define this term.

The proposed Regulation does not specify the year by which the final performance standard is required to be achieved.

The proposed Regulation is unclear on compliance responsibility for leased buildings. Requiring building tenants to invest in infrastructure to meet BEPS could disincentivize leasing in Montgomery County.

As noted in this letter, the proposed laboratory EUI may be unachievable for laboratories with pharmaceutical research and manufacturing operations or other pressure controlled cleanroom activities. Should the County desire to attract more of these types of operations, additional review of

[1] Pharmaceutical Engineering, *Energy Benchmarking in the Pharmaceutical Industry,* September/October 2013, Vol 33, No 5. www.pharmaceuticalengineering.org

[2] AstraZeneca, *AstraZeneca announces innovative partnership with Vanguard Renewables to decarbonize its United States sites,* 13 June 2023, https://www.astrazeneca-us.com/media/press-releases/2023/astrazeneca-announces-innovative-partnership-with-vanguard-renewables-to-decarbonize-its-united-states-sites.html

benchmarks is recommended. An additional building category recognizing the unique character of life sciences operations may be appropriate. At a minimum, your review of such benchmarks can enable a more informed review of BPIPs from life sciences companies.

Finally, AstraZeneca recommends incorporating the use of offsite renewable energy. The report "Zero Energy Building in Massachusetts, Saving Money from the Start" by U.S. Green Building Council, Massachusetts Chapter[3], notes the challenge to delivering Zone Energy buildings in Massachusetts, a state leader in sustainability measures and leading BioHub, are high-energy use types such as laboratories, hospitals, and buildings that house restaurants or data centers. Thus, in many cases, building owners must go off-site to purchase additional renewable energy in order to get to zero. Multiple state Zone Energy certifications now allow for the use of off-site renewable energy to qualify.

While Montgomery County's technical reports and guidance reference the consideration of both onsite and offsite renewable energy, Regulation 17-23 is limited to onsite renewable energy. We understand that this may require restructuring the compliance standard to include emissions thresholds similar to those in the State BEPS, and would support such a restructure. AstraZeneca notes that our newest R&D facility location, Cambridge, MA, has enacted energy performance standards that do allow accounting for off-site renewable energy (City of Cambridge ORDINANCE NO. 2021-26).

Thank you again for your consideration and the opportunity to provide feedback on the Montgomery County Building Energy Performance Standards Executive Regulation 17-23. We are happy to answer any questions and welcome further discussion with County staff.

Sincerely,

Geoffrey A Gallo
Head of State Government Affairs
AstraZeneca

[3] US Green Building Council Massachusetts, "Zero Energy Buildings in Massachusetts: Saving Money from the Start" 2019 Report. Accessed November 29 https://builtenvironmentplus.org/wp-content/uploads/2019/09/ZeroEnergyBldgMA2019.pdf

November 30, 2023
BY EMAIL

Ms. Emily Curley
Montgomery County Dept. of Environmental Protection
Energy, Climate, Compliance Division
2425 Reedie Drive, 4th floor
Wheaton, MD 20902

Dear Ms. Curley:

Thank you for the opportunity to comment on the draft Building Energy Performance Standards (BEPS) Executive Regulations which were posted in the November 1, 2023 Montgomery County *Register*.

The proposed regulations indicate a final performance standard of 144 (kBtu/sq. ft) also described in the draft regulations as "weather normalized net site EUI" for Hospitals (General Medical and Surgical).

We are writing to express our shared serious concern about this target and urge a delay in implementation until this can be considered further.

According to your department's website, the February 2022 BEPS technical report by Steven Winter Associates (SWA) provided the information to inform the regulations resulting from Bill 16-21 including "A recommended method for setting building performance standards, what the targets can be, and the estimated impacts of meeting those targets." This report was used to support the performance standards for all buildings, despite none of the nine case studies in the SWA report involving a hospital or healthcare setting.

On page 4 of the SWA report, the authors note that "…a site EUI target lower than the ZNC [zero net carbon-compatible] may not be technically achievable for most buildings." The chart on the following page identified a ZNC level of 187 for "Health Care – Inpatient" buildings. However, the proposed standard is 144 – far below both the current median of 305 (site EUI) for our hospitals and what the SWA consultants considered "technically achievable" at the ZNC level. Meeting a ZNC standard of 187 would be very challenging for hospitals, especially under the time frame required in the draft regulations, however, meeting a target of 144 may simply be impossible under any timeframe.

We respectfully request that the draft regulations be reviewed to ensure feasibility and we would like the chance to meet with you and any other members of your team who participated in the determination process for the hospital target.

We are also concerned about the County's deadline for meeting final standard by 2033, a full seven years before the state deadline of 2040. Doing so would put Montgomery County's hospitals, operating under a fixed revenue model, at a disadvantageous cost position relative to the rest of the state.

The healthcare sector is committed to the goals of creating a healthier environment for all of us, but it must be done in in both a technically and financially feasible manner.

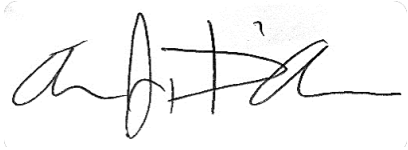
Thank you. We look forward to our further discussions.

Geoff Morgan
Vice President, Chief Facilities & Real Estate Officer
Adventist Healthcare

Kate Wellner

Kate Wellner
Vice President – Integrated Operations

Holy Cross Health



A. Joseph D'Angelo
Vice President, Operations
Suburban Hospital

From: Christine Malich <chrismalich@gmail.com>
Sent: Thursday, November 30, 2023 4:55 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: MOCO energy initiatives

[EXTERNAL EMAIL]

I'm Very concerned that the county proposals Will create huge financial burdens on high-rises, that are already struggling to meet the sprinkler mandate, in addition to their own costs that have gone up due to inflation and higher utility rates.

I hope you will take a step back and consider the fact this will have on affordable housing and naturally occurring retirement communities. Many people who are living in high rises are elderly and on fixed incomes. To ask them now to make up for deficiencies in energy use seems unfair and untimely.

I think you could get a lot more cooperation. If you made this an educational effort as all buildings benefit from lower cost. Rather than penalize buildings that cannot make the changes you would like, how about helping them to achieve the goals without forcing it upon them.?

As a realtor, I can only imagine what this is going to do to property values, which eventually affects tax revenue.

Thank you, Christine Malich
5500 Friendship Blvd
Unit 819
Chevy Chase, MD 20815

From: Brenda Viehe-Naess <brendavns@gmail.com>
Sent: Thursday, November 30, 2023 5:24 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: Proposed Energy Regulations

[EXTERNAL EMAIL]

I am an owner and resident of the Willoughby Condominium in Chevy Chase MD, an 815-unit building constructed in 1968. At the time it was constructed, the building met the high safety and energy standards for a Type 1B building. Our 55 year old building is not luxury housing, but it provides comfortable and moderately priced homes for seniors, twenty-somethings, and families.

The Department's proposed regulations dictate the installation of energy saving measures that would require significant changes in the building's operating systems. The dislocation such a retrofit would involve, as well as the enormous cost, frightens many homeowners in our building --- including me.

As a lifelong Democrat, who has supported many social and environmental changes, as well as a grandmother, the impact of the climate crisis on my life and my children and grandchildren's is of great concern. But the lack of sensitivity to the cost of retrofitting energy conservation measures shown by this regulation is shocking. Although we do not have a firm figure, just looking at the necessary measures --- replacing single pane windows and gas boilers, for a start --- we know will be very costly.

This year, our building was ordered by the State Fire Marshall to retrofit sprinklers, which a professional estimator, working from a schematic by a professional fire safety engineer, has estimated will cost over $18 million. For the individual homeowners in our building, the costs per unit are so high that they threaten their ability to remain in their homes. Should they choose to sell, owners face the prospect of decreases in the value of their units, so that moving will inevitably lead to a less comfortable and less spacious home.

The inequity of imposing the most stringent standards on homeowners in multi-family housing is troubling. Chevy Chase is filled with large homes many times the size of our apartments, but there is no comparable mandate to compel their owners to upgrade energy conservation. Yet as individuals, we are less able to afford the major retrofitting required to meet the disproportionate goals set for condominiums by the proposed regulations.

Our Delegate Mark Kormann pointed out in a recent hearing that 40% of Montgomery County residents live in multi-family housing. These proposed regulations will have a broad impact on County residents, as well as on the decisions by residents of nearby jurisdictions when considering residential purchases.

It is painful to see the County pursue excessive standards for our homes, compared to commercial properties and luxury homes. I urge you to withdraw these harsh regulations and, if revised and reproposed, to consider equitable, moderate, and attainable standards.

Regards,

Brenda Viehe-Naess

November 30, 2023

Ms. Emily Curley

Building Energy Performance Programs Manager

Montgomery County Dept. of Environmental Protection

Montgomery County, MD

Dear Ms. Curley,

I am writing on behalf of AIA Potomac Valley's Committee on the Environment (COTE) in support of draft Building Energy Performance Standards Executive Regulations issued for public comment.

The American Institute of Architects (AIA) has a long-standing commitment to aid architects, allied professionals, and the public in achieving climate action and justice through design. Since 2006, the AIA has endorsed strong and immediate action to achieve net zero emissions by 2030 – a goal which aligns with the Paris Climate Agreement targets to address climate change. AIA Potomac Valley's COTE, a local branch of AIA's COTE, gathers regularly to advocate for sustainability, climate action, justice, equity, diversity, and inclusion.

Our Committee supports Montgomery County's efforts to achieve carbon neutrality through Building Energy Performance Standards, and fully endorses the Final Performance Standards by Building Type established in Sec. 18A.43.A.01.05 (A) as a strong step towards these goals. We hope to see the integrity of these Performance Standards maintained throughout the County deliberation process and implemented into law.

Sincerely,

Gregory Goldstein, Associate AIA

Director, AIA Potomac Valley Board of Directors

From: janicelml@aol.com <janicelml@aol.com>
Sent: Thursday, November 30, 2023 8:47 PM
To: Energy <Energy@montgomerycountymd.gov>
Subject: Fw: Comments on BEPS for Emily Curley

[EXTERNAL EMAIL]

Hello,

My name is Janice Mostow and I am an owner and resident of the Willoughby Condominium in Chevy Chase MD, an 815-unit building constructed in 1968. At the time it was constructed, the building met the high safety and energy standards for a Type 1B building. Our 55 year old building is not luxury housing, but it provides comfortable and moderately priced homes for seniors, twenty-somethings, and families. It is probably one of the most diverse multi-housing buildings in Friendship Heights and in all of Montgomery County.

The general outlines of what might be expected of buildings such as our are very upsetting to me and many of my neighbors. We chose to live here because we can age in place- or thought we could. This neighborhood is a Naturally Occurring Retirement Community. Many of us live on now fixed incomes (pensions and social security) after have worked in various service professions. I myself served as a teacher and principal in Montgomery County for over 30 years. I taught English in middle and high school and then served as the principal at Briggs Chaney Middle School and Bethesda Chevy Chase HS. Because of new requirements on older and safe buildings regarding fire safety (sprinklers) and new energy saving requirements, I may not be able to afford to stay here if the requirements do not change. Why? Because in a multi family building such as ours, our condominium fees will sky rocket to absorb the costs. We have gotten one estimate on the possible cost of sprinklers and that is almost 18 million dollars. Add that to additional energy enhancements which we will also have to absorb, and after working in this county for over 30 years I may not be able to afford to stay here. That thought is beyond upsetting to me and my family all of whom live and work nearby.

I have voted Democratic for my entire life and have lived in Montgomery County since I was 2 years old. I am now 78. I have supported many social and environmental changes. As the grandmother of 4 grands (two of whom live and school in MC) I am very, very concerned about the environment and the impact of the climate crisis on my life and my children and grandchildren. I do not have my head in the sand about the serious condition or our environment. But the lack of sensitivity to the cost of retrofitting energy conservation measures shown by this regulation is very upsetting It is as if the people who are working on this initiative completely discount the needs of my own community and others as well. Although we do not have a firm figure, just looking

at the necessary measures --- replacing single pane windows and gas boilers, for a start --- we know will be very costly.

This year, our building was ordered by the State Fire Marshall to retrofit for sprinklers, which a professional estimator, working from a schematic by a professional fire safety engineer, has estimated will cost over $18 million. For the individual homeowners in our building, the costs per unit are so high that they threaten their ability to remain in their homes. Should they choose to sell, owners face the prospect of decreases in the value of their units, so that moving will inevitably lead to a less comfortable and less spacious home.This- after dedicating my entire career to the well being of the children who attend school here- is hard to believe.

The inequity of imposing the most stringent standards on homeowners in affordable multi-family housing is actually age-discrimination. Chevy Chase is filled with large homes many times the size of our apartments, but there is no comparable mandate to compel their owners to upgrade energy conservation. Do those in single family dwellings matter to more to our lawmakers than those of us in multiple family situations. Perhaps because we cannot afford multimillion dollar homes, we are under regulations which the wealthy home owners are not under. Yet as individuals, we are less able to afford the major retrofitting required to meet the disproportionate goals set for condominiums by the proposed regulations.

Our Delegate Mark Korman pointed out in a recent hearing that 40% of Montgomery County residents live in multi-family housing. These proposed regulations will have a broad impact on County residents, as well as on the decisions by residents of nearby jurisdictions when considering residential purchases.

It is painful to see the County pursue excessive standards for our homes and undervalue our rights to live here since many of us will be forced out of our homes due to the extreme costs proposed compared to commercial properties and luxury homes. I urge you to withdraw these harsh regulations and, if revised and reproposed, to consider equitable, moderate, and attainable standards.

Thank you for considering my comments.
Janice Mostow
4515 Willard Avenue #0113S
Chevy Chase MD. 20815

NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION
DC|MD CHAPTER

TO: Emily Curley
Department of Environmental Protection
2425 Reedie Drive, 4th Floor
Wheaton, Maryland 20902
Via email: energy@montgomerycountymd.gov

NAIOP DC|MD is providing the following comments on the proposed implementing regulations for Montgomery County Code Chapter 18A, SEC. 18A-43A Building Energy Performance Standards (BEPS Regulations). NAIOP DC|MD is the leading organization for those involved in all areas of commercial real estate in Washington, DC, Montgomery, Prince George's and Frederick Counties in Maryland. We count among our members many of the largest commercial real estate developers, owners and managers in Montgomery County.

NAIOP DC|MD is committed to advancing sustainable development in Montgomery County. Our member companies have a long-standing commitment to climate mitigation and experience owning, operating and investing in high performance buildings in Maryland as well as markets across the U.S., Canada and Europe. Our experience, much like the findings of the Steven Winter Associates study commissioned by the County, is that that decarbonization of large commercial and multifamily buildings will require overcoming challenges that vary based on building type, occupant uses, and offsite utility conditions. Below we have provided comments as to how we believe the BEPS Regulations could be improved to help find the balance between making Montgomery County a model for sustainability while ensuring technical feasibility and remaining an attractive place for commercial real estate investment.

Background on the Current Commercial Real Estate Market

Due to the rise in remote work following the COVID-19 pandemic and the unprecedented increase in interest rates beginning in the spring of 2022, commercial real estate owners are currently dealing with a very difficult investment and lending environment. The decline in office utilization and values has been well documented.[1] However, interest rate increases have impacted all commercial real estate asset classes, reducing values and in many cases, cash flows which significantly restricts the borrowing capacity of building owners and is causing a freeze in the lending market for office buildings.[2]

Some key challenges include:

- Since March 15, 2022, the Secured Overnight Financing Rate (SOFR) has increased from 0.05% to 5.31%. This is a key interest rate for commercial real estate transactions as it is generally used to establish lending rates and impacts return requirements for investments.

[1] For example, see Tom Armus, "D.C.'s suburbs, not just downtown, are feeling the crunch of remote work," Washington Post, August 5, 2023 and Alena Botros, "The $500 billion 'Office real estate apocalypse': Researchers find remote work's effect even worse than expected," Fortune, May 25, 2023.
[2] Konrad Putzier, "Office Landlords Can't Get a Loan Anymore," Wall Street Journal November 20, 2023.

- The availability rate for office space in Montgomery County is currently 21.2%. This is a significant increase from the pre-pandemic rate of 15.5%.[3]
- High rates of inflation have increased operating expenses while office face rents have remained generally flat, but concessions have reduced net effective rents. Additionally, the cost of commercial HVAC equipment has increased by 40% since January of 2020.[4]
- The County increased its property tax rate by 4.7%. Property taxes are often a building's largest expense item.
- Apartment owners must now contend with the impact of the County's rent control laws.

With this brief background, NAIOP DC|MD has the following comments on the proposed regulations:

18A.43A.01.05 - Establishment of Final Performance Standards by Building Type & 18A.43A.01.06 Mixed-Use Buildings

Final Performance Standard. By including final performance standards based on the Zero Net Carbon (ZNC) Targets identified by Steven Winter Associates (SWA), the regulations have high costs relative to marginal improvements over other targets. SWA estimated that the total capital cost for all covered buildings in the County to meet the ZNC target was $3.22 billion or approximately $13.90 per square foot. Although, some covered buildings already comply or may be able to comply with the ZNC target with relatively low-cost measures, there will be a wide variation in the cost of compliance between buildings.

In its detailed case studies, SWA concluded an average cost per square foot of $25.08 for a selection of buildings that did not comply with the ZNC target. The energy savings for these buildings only averaged $0.77 per square foot per year. The table below summarizes the cost per square foot, return and payback calculation for each case study in the SWA analysis:

Property Type	Year Built	Cost per SF	Return & Simple Payback
Class A Office	2005-2010	$23-$26	3% / 35.1 Years
Older Mixed-Fuel Office	1970-1975	$16-$19	4% / 26.4 Years
Older All-Electric Office	1970-1975	$25-$28	5% / 19.2 Years
New Mixed-Use Multifamily	2000-2005	$7-$10	3% / 31.9 Years
Old High-Rise Affordable Multifamily	1965-1970	$16-$19	2% / 57.1 Years
Garden-Style Multifamily	1950-1955	$25-$28	4% / 26.8 Years
Mid-Sized Hotel with Conference	1990-1995	$33-$36	2% / 48.9 Years
Standard Hotel without Extra Use Spaces	1990-1995	$31-$34	3% / 34.2 Years

[3] This data is from CoStar and includes space that is occupied but currently available for lease in addition to vacant space that is available for lease.
[4] St. Louis Federal Reserve Bank – Producer Price Index: HVAC and Commercial Refrigeration Equipment, Jan '21-Oct '23

In most cases, the time required to achieve a simple payback would exceed the service life of the installed equipment and the realistic remaining lifespan for the property. The returns on these measures are generally below available interest rates and well below the return requirements for these property types.[5] Additionally, given the decline in property values, owners will likely have to fund these measures with equity rather than finance them. Faced with long payback periods and below market returns, owners must either find a way to pass these costs on to tenants or the County will see a significant decline in values as purchase prices are reduced to reflect the cost of these measures.

Although subsidies may help to offset the cost of some of these measures, the actual benefits are difficult to quantify. The County's primary subsidy is a property tax credit. Although the credit percentage is tied to the increase in the building's efficiency, the actual amount of the credit will also depend on the property's assessed value. Older, less efficient buildings will generally face higher per square foot costs to meet the ZNC target while also being assessed at relatively low values. Properties may also be eligible for federal incentives but to date it is not clear how much money will be available for energy efficiency projects in the County and what the conditions will be.

As an addendum to the SWA building case studies, the County commissioned ICF consulting to study the potential for available energy efficiency incentives to cover the costs of meeting the ZNC target. The study found that incentives would defray an average of 7% of costs with a range of 2-28% across the case study buildings.

Properties may also be eligible for increased federal subsidies and incentives offered by investor-owned utilities through EmPower but to date it is not clear how much money will be available for energy efficiency projects in the County and what the conditions will be.

NAIOP DC|MD urges the County to consider less stringent standards than those proposed in the draft regulations. Less stringent standards could still help the County meet its climate goals without placing such a high cost burden on its existing building stock.

New Building Types. Part A of this section requires the Department to establish new performance targets if building types are created or changed within ENERGY STAR Portfolio Manager. This could result in the impacted buildings having to meet more stringent standards midway through or even toward the end of the compliance cycle. The regulations should be clarified so that a building will not have to meet a more stringent performance standard than the one established for its building type at the beginning of the compliance cycle.

Change in Building Type or Use Mix. Many of the building types are differentiated based on the actual uses. As tenants change so could the type or mix making the standards a moving target. The regulations should allow for additional flexibility, potentially through a Building Performance Improvement Plan, so

[5] There are surveys that report on various measures of real estate returns. For example, RERC publishes a quarterly Real Estate Report that includes data on internal rates of return (IRR). The most recent survey for the East Region indicated average IRRs for first and second tier suburban office of 9.2% and 10.4%, respectively. For first and second tier apartments the reported average IRR were 7.6% and 8.7%.

that owners are not penalized for converting their space to meet a different use with a lower target later in the compliance cycle.

18A.43A.01.08 - Renewable Energy Allowance

The renewable energy allowance is an important tool for the County to help grow its local, renewable energy industry. Commercial property owners in Montgomery County will benefit from a robust and competitive local industry of renewable energy system designers and installers.

Part A appears to limit the allowance only to electricity that is actually used by the building rather than exported. This approach could disincentivize owners from continuing to take steps to improve energy efficiency at times when onsite renewables are meeting a building's energy demand. Expanding the allowance to include all renewables generated onsite, whether used or exported, would address this issue and further incentivize owners to invest in onsite renewable systems.

The renewable energy allowance should include offsite renewables even if it favors local sources or limits the allowance for offsite renewables to a certain percentage of the EUI target. Allowing buildings that are not suitable for significant onsite renewable generation to support renewable generation projects elsewhere in Montgomery County or Maryland would further the County's goal of developing its local renewable energy industry.

18A.43A.01.09 Building Performance Improvement Plans

Economic Infeasibility: Buildings should be eligible for the BPIP alternative compliance pathway if they can demonstrate that one or more of the most cost-effective measures required to meet the EUI standard are economically infeasible. In gauging the economic infeasibility of a measure, the Department should consider whether energy savings justify the incremental cost of the investment after accounting for typical returns for that property type.

Many of NAIOP's members are ultimately investing on behalf of pension funds, endowments, insurance policy holders, retirees and other members of the general public. These people count on our members to make prudent capital investments so that they can achieve reasonable returns on their real estate investments. The regulations should strike the balance between the need to meet the County's climate goals and the need for commercial real estate owners to make responsible investment decisions on behalf of their underlying investors by allowing buildings to qualify for the BPIP when individual measures themselves are not economically feasible to implement.

Building Owner: Our understanding is that Part (B)(1)(a) is intended to allow buildings to qualify for the BPIP if the funds available from that property are insufficient to cover the cost of implementing the required improvements. However, as written, the regulations could be interpreted to allow for consideration of parent owner's financial resources, rather than just the resources available from that specific property. The regulations should make clear that this is a property-specific inquiry.

18A.43A.01.11 BPIP Evaluation by the Department

Additional Documentation: Despite the detailed submission requirement in the preceding section, Part B of this section gives the Director broad authority to request additional information. The scope of the Director's authority should be limited to the consideration and inclusion of additional measures.

Grounds for Denial: The Director should be required to provide the applicant with a written summary of the grounds for denying the BPIP.

18A.43A.01.12 Demonstration of Compliance

Termination of the Covenant: The regulations should specify when the Department must complete the steps required to terminate the BPIP covenant following either competition of the plan or meeting the target. Because these covenants could impact the marketability of a property, the Department should be required to take the necessary steps within 30 days of achieving compliance.

We thank you for the opportunity to provide feedback on these regulations and are available to further discuss these comments.

Maryland
Hospital Association

November 30, 2023

Emily Curley
Department of Environmental Protection
2425 Reedie Drive, 4th Floor
Wheaton, Maryland 20902
Submitted via Energy@montgomerycountymd.gov

Re: Building Energy Performance Standards

Dear Maryland Department of the Environment:

On behalf of the Maryland Hospital Association's (MHA) 62 member hospitals and health systems, we appreciate the opportunity to comment on the proposed building energy performance standards.

The proposed performance standards do not account for Maryland's Total Cost of Care Model.
Maryland hospitals are in a unique financial environment. Hospitals are under immense pressure to meet the cost-saving requirements of the Total Cost of Care agreement with the federal government. The fixed revenue system under global budgets does not allow hospitals to quickly adjust to account for additional expenses to offset the cost of infrastructure improvements. It is unlikely that the federal government will recognize the additional costs incurred by the county mandate—resulting in more severe financial challenges for hospitals.

The proposed performance standards create additional cost pressures for Montgomery County hospitals.
Across the country, hospitals face a double crisis of workforce shortages and higher expenses. Unlike the rest of the country, hospitals in Maryland cannot simply raise prices or volume to account for these increased costs. According to the June 2023 Health Services Cost Review Commission (HSCRC) report, hospital operating margins for fiscal year 2022 were 0.77%—down from 4.01% in FY 2021[1]. Given the current economic climate, decreasing profit margins jeopardize the sustainability of Maryland hospitals.

Expeditiously upgrading to energy-efficient technologies to meet energy standards require significant upfront costs. Montgomery County hospitals will be required to make changes unlike any other part of the state, which may lead to fiscal disadvantages for Montgomery County hospitals impacting the delivery of care.

[1] Health Services Cost Review Commission June 2023
https://hscrc.maryland.gov/Documents/June%202023%20HSCRC%20Public%20Pre-Meeting%20Materials.pdf

The proposed standards are inconsistent with existing state standards.
The proposed regulations, among other requirements, establish new deadlines for the final energy performance standards. As drafted, Montgomery County will impose an expedited deadline requiring hospitals to comply with building energy standards by 2033. MHA is concerned about this deadline, which will go into effect seven years before the state deadline in 2040.

In an announcement on Maryland's entry into the Biden Administration's National Building Performance Standards Coalition, Gov. Wes Moore said, "Maryland is moving fast and moving in partnership with our local and federal officials to achieve the full potential of our climate and equity goals."[2]

Maryland hospitals are moving quickly to align with state standards. Imposing more restrictive deadlines at the county-level is overly burdensome on Montgonery County hospitals and misaligned with existing state requirements.

MHA raised similar concerns with building energy standards in our June comment letter to Maryland Department of the Environment. We respectfully request the draft regulations be reviewed to ensure feasibility and urge a delay in implementation until this can be considered further.

Thank you again for this opportunity to comment. Please reach out to Steven Chen, MHA's director of policy, if you have any questions.

Sincerely,

Erin M. Dorrien

Erin Dorrien
Vice President of Policy

[2] https://governor.maryland.gov/news/press/pages/governor-moore-announces-maryland%E2%80%99s-entry-into-biden-administration%E2%80%99s-national-building-performance-standards-coalition.aspx

Greetings Council Members. I'm Allison Andreyev, a ninth-grader at Thomas S. Wootton High School and a resident of Montgomery County. As an ambassador for the MCPS Student Climate Action Council, I stand before you representing over 160,000 Montgomery County Public School students.

As a student currently attending a public high school, I have noticed the inefficiency in the way public schools operate such as high energy consumption due to lighting, overheating or overcooling and ventilation. This is also prevalent in the infrastructure within our county such as libraries and department buildings. The lack of sustainability in our energy usage is only growing. MCPS itself has a goal of reducing "greenhouse gas emissions 80% by 2027 and 100% by 2035." (1) And how are we supposed to achieve this without the Building and Energy Performing Standards Bill? BEPS is not only going to help meet our climate and emission goals, but provides flexibility for those facing cost challenges. Anyone who owns a building that cannot meet the standards put into place by BEPS can submit a Building Performance Improvement Plan (BPIP) (2). They are then held to the actions and deadlines outlined in their plan to be considered "in compliance." In the long term, reducing energy use would also reduce energy costs for Montgomery County citizens. According to the U.S. Department of Energy, the cost per year that the average American household spends on energy bills is around $2,000. However, homeowners can reduce their energy bills by up to 30%, potentially saving $600 a year, if they increase energy efficiency (3). Eventually, the benefits of establishing a county-wide energy standard in buildings would outweigh the costs, and BEPS will guide whoever is currently unable to make these investments so that they will meet these standards in the future. Also, the amendments to the BEPS bill are a necessary part of Maryland's climate commitment made in the Climate Solutions Now Act . That act promises to reach net-zero emissions by 2045 and creates several energy efficiency requirements for buildings. The BEPS bill will reduce emissions significantly, bringing us much closer to that emissions goal. On a wider scale, the UN states that 30% of building emissions will need to be reduced by 2030, in order to fulfill the requirements of the Paris Climate Accord(4).

Amending this bill is a crucial step in our fight against climate change. Montgomery County needs to be held accountable to its ambitious climate goals with policies like this one that will help us reach those goals and set an example for the nation. As students of Montgomery County, we remind you: your decisions, your example, shapes our future, and we urge you to support the revisions to the BEPS bill. Thank you for your time.

SOURCES:

1) https://www.montgomerycountymd.gov/DGS-OES/GoalsProgress.html#:~:text=Reduce%20greenhouse%20gas%20emissions%2080,2027%20and%20100%25%20by%202035
2) https://www.montgomerycountymd.gov/green/energy/beps.html#beps
3) https://www.linkedin.com/pulse/how-energy-efficiency-can-save-you-money-long-run-deep-nova?trk=organization_guest_main-feed-card_feed-article-content
4) https://www.intellihot.com/how-do-buildings-contribute-to-climate-change/

Leo Wang BEPS Building Energy Public Comment:

Hello Council Members, my name is Leo Wang and I am currently a sophomore at Quince Orchard High School. I'm an ambassador for the MCPS Student Climate Action Council, and I am speaking today to represent over 160 thousand Montgomery County Public School students. As students who will have to deal with the consequences of climate change, we want to hold legislators accountable to their commitments to the climate.

Energy use is a huge contributor to carbon emissions, producing 31% of yearly emissions. (1) This bill will significantly reduce those emissions by cutting down on the energy use intensity of many buildings. One example of this is automobile dealerships. In 2020, Maryland car dealerships had a site energy intensity use of 138.96 which was an increase from the 2019 site (EUI) of 133.64. (2) This increase of 3.8% in energy use is moving us further away from our goal of state net neutrality by 2045. However, the BEPS law requires automobile dealerships, for example, to reduce their site EUI to 61, which is a 56% decrease in energy use. (3)

Some may argue that the cost of implementing these energy efficient measures outweigh the benefits that they bring in. However, that is incorrect. Although the initial cost of energy saving equipment is high, throughout their use they can eventually save the owners hundreds of thousands of dollars. An energy efficient water heater can cost $700 more than a standard one, but over the lifetime of the equipment it can have an impact of $3,500 of savings. (4) Additionally, there are often rebates or discounts applied to energy efficient equipment, making them sometimes even cheaper than standard ones. (5) This makes these appliances and equipment a powerful tool for owners to save money and invest these savings back into their businesses. By lowering the utility bills for many consumers, these savings get passed down into the local economy and not only help to create jobs but also stabilize electricity markets by lowering the energy usage.

In this world where our future is being destroyed as we speak, where two hundred tons of carbon equivalents are emitted every second by this nation alone (6), where my generation will live to see the ocean rise between three and seven feet if emissions continue (7), it is hard not to feel hopeless. Our only hope lies in swift action. Our county can serve as a leader for the country and the world in addressing this crisis, or it can give in to the interests of profit and watch as my generation battles the catastrophe that we've inherited. Supporting this law is protecting our climate by decreasing the effects of climate change on our community and our future.

Hello, Council. My name is Daniela Naaman and I am a current freshman at Wootton High School. I am also an ambassador for the MCPS Student Climate Action Council, and I am here tonight on behalf of over 160 thousand Montgomery County Public School students whose futures will depend on your support of this bill.

Every day, we see more information about the rising sea levels, more extreme weather events, and increasing heat waves—all warning signs of the disasters to come if we do not address climate change now. Our generation is tired of witnessing these horrifying consequences, but we are also upset with the lack of effective action being taken by those in power.

The Student Climate Action Council is working to support Montgomery County students from an environmental standpoint in various ways, including supporting legislation. The Building Energy Performance Standards' goals of increasing energy efficiency overlap, and will directly benefit students. BEPS will set final standards (1) for onsite energy use intensity (EUI) by building type. These standards are significantly more rigorous than the national median, and will greatly reduce energy use. For example, the national median EUI for a school is 58.2 (2), and the bill has the standard for the EUI of an educational facility at 45 (3). This represents a great reduction in the EUI of buildings throughout the county, which saves valuable resources to protect our environment.

Energy efficiency can lead to great savings, which can be important for many low-income families as by saving on their electricity bills they can have a higher disposable income. With these increased savings these families do not have to make the difficult choice of choosing between heating their homes and putting food on the table. In many other parts of the world, there have already been strict energy saving policies implemented with great results. For example, the energy improvements made to homes in the UK and Japan saved each home, on

average, $300 annually (4), proof that these policies do not place a burden on owners with increased costs but instead actually help the homeowners and businesses save on electrical bills.\

There is no time like the present for us to stand up and do our part to ensure a clean and safe world for future generations. If Montgomery County passes meaningful legislation that will reduce emissions, we will make ourselves a national leader and help to encourage others to join in the fight against climate change. Otherwise, the world will only be able to stand by as the earth rapidly deteriorates before our eyes.

To: Whom It May Concern
From: Mike C. Cain, CEM, EBCP – Era Building Solutions
Re: Draft Building Energy Performance Standards (BEPS) Executive Regulations - Comments

To Whom It May Concern:

As a Montgomery County based commercial building consultant & contractor with a specific focus on energy efficiency and advanced building solutions, Era Building Solutions commends the County's objectives of equitably increasing building efficiency, improving local environmental quality, strengthening building, community, & grid resiliency, and—ultimately—achieving 100% emissions reductions by 2035. Moreover, we appreciate the substantial investment and support which the County makes available to our clients through the industry-best Montgomery County Green Bank, Office of Energy and Sustainability, Department of Environmental Protection, and more.

We have reviewed the draft regulation proposed in November of 2023 and we commend the tireless work of the County, its consultants, and its various working groups to develop these excellent foundational standards. In support of the County's objectives, our industry-best peers who provided input for the development of the draft regulations, and the various building owners, managers, and occupants whom we support, we would like to formally submit the following comments as recommendations for enhancements to the draft regulation…

Recommendations:

1. Establish a Parking Adjustment for Final Site EUI Targets
2. Provide additional clarification regarding the Renewable Energy Allowance
3. Establish additional allowances for Electric Vehicle Charging Systems and Resilient Energy Systems
4. Expand the definition of "Economic Infeasibility"
5. Consider revisiting Site EUI Targets for select building types

Detailed initial comments and suggestions regarding the above-listed recommendations are included herein. Should the County or its representatives wish to discuss any of this information in further detail, we would welcome the opportunity to support Montgomery County's continued leadership regarding climate & the environment.

Thank you for your service to our County. Yours in service,

Mike C. Cain, CEM, EBCP
Montgomery County B2B Business Owner & Resident
301.272.2196, ext. 700
mcain@erabuildingsolutions.com

Recommendation 1: Establish Parking-Adjusted EUI

The regulation as-proposed appears to establish a Final Performance Standard for the Parking use type [18A.43A.01.05 Establishment of Final Performance Standards by Building Type, Section A]. However, under 18A.43A.01.06 Mixed-Use Buildings Section B, parking appears to be excluded from the EUI_{AW} (area-weighted final site EUI standard).

> "If a covered building consists of more than one building type, the Department will calculate an area-weighted final performance standard that averages final performance standards from the three largest building type groupings as calculated by the benchmarking tool, excluding parking, using the following formula:
>
> $EUI_{AW} = ((GFA_A / GFA_S) \times EUI_A) + ((GFA_B / GFA_S) \times EUI_B) + ((GFA_C / GFA_S) \times EUI_C)$"

Exclusion of parking from the final performance standard would unintentionally disadvantage those properties with substantial surface parking areas. In Montgomery County, some of the highest parking:building GFA ratios are very likely found in garden-style apartments/condominiums (representing a substantial portion of the county's affordable and market-rate-affordable housing inventory) and nonprofit community gathering areas (i.e. places of worship).

Era recommends incorporating an appropriate allowance for parking into the final metric.

Recommendation 2: Clarify "Renewable Energy Allowance"

As proposed, a conflict exists in the definition of the "Renewable Energy Allowance"…

- **18A.43A.01.02.I Definitions** defines Renewable Energy Allowance as follows:
  "Renewable energy allowance means all electricity generated from onsite renewable energy systems."
- While **18A.43A.01.08.A Renewable Energy Allowance** states the following…
  "The renewable energy allowance will credit all electricity **use** generated from onsite renewable energy systems."

Furthermore, **18A.43A.01.02.I Definitions** defines "Onsite Renewable Energy System" as follows:

> "Onsite renewable energy system means a renewable energy system physically located on the covered building or covered building site that produces electricity for **use** in the building."

Era strongly recommends that this language be clarified to more clearly indicate…

a. Whether it is only the onsite renewable energy generated and used onsite or—rather—all onsite renewable energy generated onsite (regardless of use) which is able to be counted toward the Renewable Energy Allowance.
b. What will be the accounting methodology for…
    i. renewable energy credit (REC) sales (in which the rights to claim the use of the solar power being generated onsite are sold to other parties in DC, Maryland, or Montgomery County)?
    ii. local renewable energy credit (REC) purchases (in which buildings with limited onsite renewable generation potential purchase Renewable Energy Credits from other local renewable energy generators within the County to offset their site energy use)
    iii. buildings with residents participating in Community Solar (for which the solar is owned by the electric account owner for the benefit of the building, but the actual generation occurs offsite)?
    iv. non-/not-for-profit buildings (including condos/co-ops) participating in "virtual net aggregate" metering between multiple building sites (for which one building's excess onsite renewable generation is credited to the consumption of another building by the utility)?
    v. buildings which intentionally generate excess energy for export to the grid (without selling S-RECs) in order to offset unavoidable fossil fuel consumption onsite?

These clarifications will be critical in both (a) ensuring the efficacy of the regulation in meeting the County's emissions objectives and (b) in providing clarity for building owners, operators, and those industry professionals responsible for the planning & implementation of building improvements meant to improve building efficiency and meet/exceed BEPS requirement.

Recommendation 3: Establish Additional Allowances for EVs & Resiliency

As we know from the County-Wide Greenhouse Gas Emissions Summary [Metropolitan Washington Council of Governments], roughly 40% of the County's GHG emissions come from Transportation, 25% from commercial buildings, and 24% from residential buildings. To address this, the public and private sectors have initiated efforts to improve building energy efficiency and equitably increase EV Charging availability county-wide. However, it is important to remember that EV Charging both (a) increases building Energy Use Intensity and (b) increases demand on the electric grid.

In the context of Building Energy Performance Standards, it is—again—very important to note that these same efforts implemented to equitably enhance grid & community resiliency can also have adverse impacts on Site Energy Use Intensity (despite offering markedly positive effects on Source Energy Use Intensity, global emissions, public safety, and other factors).

Much like how a "Renewable Energy Allowance" is required in order to effectively account for onsite solar production within the Site EUI Metric, Era would suggest that a similar "Electric Vehicle Systems Allowance" and "Resilient Energy Systems Allowance" be added in order to account for these systems and not deter proactive parties from implementation.

Electric Vehicle Systems Allowance

While critical to the electrification of our Transportation sector, (as stated above) EV Charging increases both building Energy Use Intensity and demand on the electric grid. Any County Building Energy Performance Standard regulation should create allowances for transfers of energy from buildings to vehicles (which would not otherwise be accounted for when considering Internal Combustion Engine Vehicles at a property) to encourage the continued development of private EV Charging Infrastructure and Electric/Hybrid Vehicle adoption.

Possible Methodology:

- [Electric Vehicle Charger Input] = [Electric Vehicle Systems Allowance]

Example:

Over the course of a given year, Electric Vehicle Charging Stations at a commercial office building consume 36,948 kwh of electricity.

- [36,948 kWh] = - 36,948 kWh Electric Vehicle Systems Allowance *(to be converted to kbtu and incorporated into the Weather Normalized Net Site EUI Metric)*

Resilient Energy Systems Allowance

When addressing a climate crisis, ensuring infrastructural preparedness for challenges and catastrophes is just as important as minimizing future climate impacts through emissions reductions and carbon sequestration. Of course this is a challenge of which Montgomery County is fully aware, improving its ability to anticipate and quickly adapt to extreme weather and natural & man-made disasters through its robust resiliency efforts which include substantial Combined Heat & Power, Solar, & Microgrid Installations.

Several Critical Technologies which provide substantial benefits to Local Grid Resiliency, Source Energy Use, and Global Emissions, may have adverse impacts on a building's BEPS Scoring as presently written (due to its Site EUI basis).

- Energy Storage: While foundational in addressing building energy demand and the challenges of the "duck curve", energy storage systems—be they battery, gravity, compressed air, pumped hydropower, or other in nature—typically only offer a round-trip efficiency of 60% to 90%. As a result, properties implementing energy storage projects will be taxed for the additional energy needed to charge these systems when using a simple Site EUI Metric.
- Combined Heat & Power (CHP / Cogeneration): Combined heat and power systems (which bear a capacity factor of 100%, substantially reduce grid loads even during the most critical high-demand periods, and offer economic & technical benefits which commonly support affordable housing, education, healthcare, and other key sectors) can substantially decrease Source/Global Emissions but can yield adversely impact simple Site EUI Metrics.

It would be the recommendation of Era that these systems—especially those being encouraged or supported by local Green Banks, Utility Rebate Programs, or State Resiliency Grants be provided with a path to account for system energy output (rather than system energy input) within the regulation's Weather Normalized Net Site EUI Metric.

Possible Methodology:

[Usable Energy Output] – [Energy Input] = [Resilient Energy Systems Allowance]

Example 1: Quantifying Battery System Allowance

Over the course of a given year, a battery system at an affordable housing community requires 136,875 kWh to charge (input) and effectively discharges (output) 109,500 kwh to reduce the demand of a building.

[109,500 kwh] – [136,875 kwh] = - 27,375 kwh Resilient Energy Systems Allowance *(to be converted to kbtu and incorporated into the Weather Normalized Net Site EUI Metric)*

Example 2: Quantifying Combined Heat & Power System Allowance

CHP Systems—an extraordinary option for improved grid resiliency, especially in those cases where complete elimination of fossil fuels is not technically possible—present a unique opportunity for various methodologies depending on the level at which the County wishes to encourage adoption and support those systems encouraged by the Maryland Energy Administration and local utility programs

A. Quantifying CHP Systems including recaptured waste heat as an "energy output" (Least impact on Site EUI Metric)

   Over the course of a given year, a combined heat & power system at an affordable housing community requires 6,377,066 kbtu of energy to produce 1,320,498 kbtu of electricity and recaptures 3,143,448 of waste heat for use in the community. The system reduces the community's demand on the electric grid by 75 kW (roughly 24/7/365) and generates a cost savings of $32,000 per year for the building's 141 residents.

[1,320,498 kbtu + 3,143,448 kbtu] – [6,377,066 kbtu] = - 1,913,120 kbtu Resilient Energy Systems Allowance *(to be incorporated into the Weather Normalized Net Site EUI Metric)*

B. Quantifying CHP Systems including only electrical energy output (Moderate Impact on Site EUI Metric. Recommended if looking to encourage this type of resiliency infrastructure)

Over the course of a given year, the same combined heat & power system requires 6,377,066 kbtu of energy to produce 1,320,498 kbtu of electricity and recaptures 3,143,448 of waste heat for use in the community. The system reduces the community's demand on the electric grid by 75 kW (roughly 24/7/365) and generates a cost savings of $32,000 per year for the building's 141 residents.

[1,320,498 kbtu] – [6,377,066 kbtu] = - 5,056,568 kbtu Resilient Energy Systems Allowance *(to be incorporated into the Weather Normalized Net Site EUI Metric)*

C. Quantifying CHP Systems by provide a full-input allowance (Substantial Impact on Site EUI Metric. Recommended only if looking to aggressively encourage this type of resiliency infrastructure)

Over the course of a given year, the same combined heat & power system requires 6,377,066 kbtu of energy to produce 1,320,498 kbtu of electricity and recaptures 3,143,448 of waste heat for use in the community.

– [6,377,066 kbtu] = – 6,377,066 kbtu Resilient Energy Systems Allowance *(to be incorporated into the Weather Normalized Net Site EUI Metric)*

Recommendation 4: Expand the definition of "Economic Infeasibility"

According to 18A.43A.01.10.B.1(a), "for economic infeasibility, building owners must be able to demonstrate definitively that they do not have the financial ability to implement the improvements needed to meet an interim or final performance standard after considering all possible incentives, financing, and cash flow resources available. The Director may also require third-party validation of economic infeasibility before BPIP approval."

In order to more effectively balance climate objectives with reasonable business practices and potential conflicts with the fiduciary responsibilities of some decision makers, Era recommends expanding this definition in the spirit of the following:

"for economic infeasibility, building owners must be able to demonstrate definitively one of the following…

1. that they do not have the financial ability to implement the improvements needed to meet an interim or final performance standard after considering all possible incentives, financing, and cash flow resources available.
2. that the differential investment required to implement the improvements needed to meet an interim or final performance standard does not meet a reasonable standard for financial returns after considering all penalties for non-compliance, possible incentives, financing, and cash flow resources available.

The Director may also require third-party validation of economic infeasibility before BPIP approval."

Additional clarity regarding lifecycle costing considerations, minimum financial return criteria, and—as importantly—potential penalties for non-compliance would substantially improve business owners' abilities to plan for and implement projects in anticipation of the Building Energy Performance Standard Interim/Final Performance Standards.

Recommendation 5: Revisit Select Targets

In comparing the proposed Final Performance Standard Metrics to those in the initial BEPS Technical Report [highlights below], some of the targets appear to be extremely aggressive (several in property types which are more capitally restricted such as Multifamily Housing & Religious Worship) while others appear to be set above even the least-aggressive "Energy Efficiency" Target. While we are sure that substantial additional data was taken into consideration for the development of these targets, we would suggest revisiting select targets which appear out of place prior to finalizing each building type.

	Proposed	BEPS Technical Study				Comparison			
Building Type	Final BEPS Target	2019 Median	EE	EE-ZNC Midpoint	ZNC	vs. 2019 Median	vs. EE	vs. EE-ZNC Midpoint	vs. ZNC
Office	**55**	63	53	**53**	53	-12.7%	3.8%	3.8%	3.8%
Medical Office (HC Outpatient)	**70**	73	62	**62**	62	-4.1%	12.9%	12.9%	12.9%
Food Service	**220**	271	250	**210**	171	-18.8%	-12.0%	4.8%	28.7%
Lodging	**60**	87	76	**67**	58	**-31.0%**	-21.1%	-10.4%	3.4%
Multifamily	**37**	62	55	**45**	35	**-40.3%**	-32.7%	-17.8%	5.7%
Religious Worship	**32**	57	49	**43**	37	**-43.9%**	-34.7%	-25.6%	**-13.5%**
Hospital (HC Inpatient)	**144**	305	268	**228**	187	**-52.8%**	-46.3%	-36.8%	**-23.0%**

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November 29, 2023

Ms. Emily Curley
Department of Environmental Protection
2425 Reedie Drive, 4th Floor
Wheaton, Maryland 20902

RE: Proposed Building Performance Standards Regulations published by the Department of Environmental Protection. [Number 17-23.]

Dear Ms. Curley:

I am an owner and resident of the Willoughby Condominium in Chevy Chase MD, an 815-unit building constructed in 1968. At the time it was constructed, the building met the high safety and energy standards for a Type 1B building. The Department's proposed regulations dictate the installation of energy saving measures that would require significant changes in the building's systems. The dislocation such a retrofit would involve, as well as the enormous cost, frightens many homeowners in our building --- including me.

As a lifelong Democrat, who has supported many social and environmental changes, as well as a grandmother, the impact of the climate crisis on my life and my children and grandchildren's is of great concern. But the lack of sensitivity to the cost of retrofitting energy measures shown by this regulation is shocking. Although we do not have a firm figure, just looking at the necessary measures --- replacing single pane windows and gas boilers, as a start --- we know that they are very costly.

This year, the building was ordered by the State Fire Marshall to retrofit sprinklers, which a professional estimator, working from a schematic by a professional fire safety engineer, has estimated will cost over $18 million. For the individual homeowners in our building, the costs per unit are so high that they threaten their ability to remain in their homes. Should they choose to sell, owners face the prospect of decreases in the value of their units, so that moving will inevitably lead to a less comfortable and less spacious home.

The inequity of imposing the most stringent standards on homeowners in multi-family housing is troubling. Chevy Chase is filled with large homes many times the size of our apartments, but there is no comparable mandate to compel their owners to upgrade energy conservation. Yet as individuals, we are less able to afford the major retrofitting

required to meet the disproportionate goals set for condominiums by the proposed regulations.

Our Delegate Mark Kormann pointed out in a recent hearing that 40% of Montgomery County residents live in multi-family housing. These regulations will have a broad impact on County residents, as well as on the decisions by residents of nearby jurisdictions when considering residential purchases.

It is painful to see the County pursue excessive standards for our homes, compared to commercial properties and luxury homes. I urge you to withdraw these harsh regulations and, if revised and reproposed, to consider equitable, moderate, and attainable standards.

Regards,

Brenda R. Viehe-Naess

Brenda Viehe-Naess

EXECUTIVE REGULATION 17-23

BUILDING ENERGY PERFORMANCE STANDARDS

JANUARY 2024

CLEAN COPY

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject BUILDING ENERGY PERFORMANCE STANDARDS	**Number** 17-23
Originating Department DEPARTMENT OF ENVIRONMENTAL PROTECTION	**Effective Date** 1/12/2024

Montgomery County Regulation on:

BUILDING ENERGY PERFORMANCE STANDARDS

Issued by: County Executive
Regulation No. 17-23
COMCOR No. 18A.43A.01
Authority: Code Section 18A, Article 6
Council Review: Method (2) under Code Section 2A-15
Register Vol. 40 No. 11
Comment Deadline: 11/30/2023
Effective Date: _____
Sunset Date: None

Summary: This regulation implements Article 6, Building Energy Use Benchmarking and Performance Standards, of Chapter 18A, Environmental Sustainability.

Staff Contact: For further information or to obtain a copy of this regulation, contact:
Emily Curley at energy@montgomerycountymd.gov or 240-777-7707.

Address: Written comments on this regulation should be sent to:

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or

Emily Curley
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Originating Department DEPARTMENT OF ENVIRONMENTAL PROTECTION	**Effective Date** 1/12/2024

COMCOR 18A.43A.01 Building Energy Performance Standards

18A.43A.01.01 General Provisions

Authority. In accordance with the authority conferred under Chapter 18A, Section 18A-43A, of the Montgomery County Code, 2014, as amended (hereinafter referred to as the "Code"), the County Executive hereby promulgates this regulation to implement County law pertaining to building energy performance standards.

18A.43A.01.02 Definitions

Definitions of the terms used in the regulation are provided in Section 18A-38A of the County Code. For the purpose of this regulation, the following additional words and phrases will have the meaning respectively ascribed to them in this regulation:

A. *Area-weighted final performance standard* means a final performance standard that is calculated based on the floor area proportion of the three largest building types within a covered building, as determined by the benchmarking tool.

B. *Communications facility* includes any use defined under Section 3.5.2 of the Zoning Ordinance.

C. *Cost-effective energy improvement measures* means a package of energy improvement measures that are economically feasible.

D. *Economic infeasibility* means:

(1) circumstances in which the simple payback of the energy improvement measure package required to meet the interim or final standard is more than 25 years, after considering all possible incentives and including avoided penalties defined in program guidance at the time of building performance improvement plan submission; or

(2) for under-resourced buildings, circumstances in which the simple payback of the energy improvement measure package required to meet the interim or final standard is more than 10 years, after considering all possible incentives and including avoided penalties defined in program guidance at the time of building performance improvement plan submission.

E. *Energy improvement measure* means any installation or modification of equipment, devices, or other materials intended to decrease energy consumption or improve energy performance.

F. *Full-time equivalent employee* means the sum of employees or occupants occupying the building for 40-person hours per week/2080-person hours per year, exclusive of security guards, janitors, construction workers, landscapers, and other maintenance personnel.

G. *Industrial use* includes any use defined under Division 3.6 of the Zoning Ordinance.

H. *Local small business* means local small business as defined in Section 11B-65 of the County Code.

I. *Manufacturing* includes any use defined under Section 3.6.4 of the Zoning Ordinance.

J. *Mixed-use building* means a building that contains two or more building types.

K. *Normalized site energy use* means the site energy use by the covered building normalized for weather and other characteristics within the limits of the capabilities of the benchmarking tool and normalized for other factors as determined by the Department.

L. *Onsite renewable energy system* means a renewable energy system physically located on the covered building or covered building site that produces electricity for use in the building.

M. *Parking gross floor area* means the gross floor area of the completely enclosed and/or partially enclosed parking garages.

N. *Renewable energy allowance* means all electricity generated from onsite renewable energy systems.

O. *Renewable energy system* means a system generating electricity from a source that is not depleted when used.

P. *Simple payback* means the estimated initial measure cost divided by the measure's calculated annual cost savings.

Q. *Transportation* includes any use defined under Section 3.6.6 of the Zoning Ordinance.

R. *Under resourced building* means a qualified affordable housing building, a common-ownership community, a non-profit owned building, or a local small business owned building.

S. *Utility infrastructure* includes any use defined under Section 3.6.7 of the Zoning Ordinance.

18A.43A.01.03 Applicability

This regulation does not apply to a covered building for which more than 50% of the total gross floor area is used for a public assembly in a building without walls; industrial uses where the majority of energy is consumed for manufacturing, the generation of electric power or district thermal energy to be consumed offsite, or for other process loads; or transportation, communications facilities, or utility infrastructure.

18A.43A.01.04 Establishment of Building Types

A. Building types are defined by ENERGY STAR Portfolio Manager definitions of property types.

B. If a building type is designated as "Other" in the benchmarking tool or if evidence suggests that the incorrect building type was entered into the benchmarking tool, the Department must assign the most accurate building type. The Department must reassign a building type that the Department determines to be more accurate based on available data. The owner will have the opportunity to dispute the building type after the Director's decision on the building type.

C. The Department has the final authority to assign a building type to a covered building.

18A.43A.01.05 Establishment of Final Performance Standards by Building Type

A. The following table sets forth the building types and the final performance standard for each building type. If additional building types are created or changed in the benchmarking tool, the Department must set performance targets for those buildings based on best available local and national data and update the building types and targets on the Department's Building Energy Performance Standards website.

Building Type	Final Performance Standard (kBtu/sq.ft.)
Adult Education	46
Aquarium	145

Automobile/Vehicle Dealership	61
Bank Branch	85
Bar/Nightclub	220
Barracks	38
Bowling Alley	84
Casino	41
College/University	57
Convenience Store with Gas Station	137
Convenience Store without Gas Station	137
Convention Center	40
Courthouse	47
Data Center	145
Distribution Center	19
Enclosed Mall	44
Fast Food Restaurant	220
Financial Office	58
Fire Station	47
Fitness Center/Health Club/Gym	59
Food Sales	137
Food Service	220
Hospital (General Medical & Surgical)	144
Hotel	60
Ice/Curling Rink	84
Indoor Arena	41
K-12 School	36
Laboratory	144
Library	55
Lifestyle Center	58
Mailing Center/Post Office	48
Medical Office	70
Mixed Use Property	Area-weighted final performance

	standard, see 18A.43A.01.06 Mixed-Use Buildings
Movie Theater	57
Multifamily Housing	37
Museum	29
Non-Refrigerated Warehouse	30
Office	55
Other - Education	45
Other - Entertainment/Public Assembly	48
Other - Lodging/Residential	37
Other - Office	55
Other - Other	54
Other - Public Service	61
Other - Recreation	78
Other - Restaurant/Bar	219
Other - Retail/Mall	81
Other - Services	51
Other - Specialty Hospital	144
Other - Stadium	23
Other - Technology/Science	183
Outpatient Rehabilitation/Physical Therapy	46
Performing Arts	57
Personal Services (Health/Beauty, Dry Cleaning, etc.)	47
Police Station	54
Pre-school/Daycare	48
Prison/Incarceration	38
Race Track	41
Refrigerated Warehouse	38
Repair Services (Vehicle, Shoe, Locksmith, etc.)	52
Residence Hall/Dormitory	38
Residential Care Facility	50

Restaurant	219
Retail Store	48
Roller Rink	84
Self-Storage Facility	7
Senior Living Community	50
Social/Meeting Hall	39
Stadium (Closed)	23
Stadium (Open)	21
Strip Mall	58
Supermarket/Grocery Store	137
Transportation Terminal/Station	56
Urgent Care/Clinic/Other Outpatient	46
Veterinary Office	46
Vocational School	46
Wholesale Club/Supercenter	48
Worship Facility	32
Zoo	41

B. If a covered building consists of one building type, then its final performance standard is the final performance standard for the building type in which it belongs.

18A.43A.01.06 Mixed-Use Buildings

A. Mixed-use buildings have an area-weighted final performance standard based on the percentage of gross floor area assigned to each building type.

B. If a covered building consists of more than one building type, the Department will calculate an area-weighted final performance standard that averages final performance standards of each building type as calculated by the benchmarking tool, excluding parking, using the following formula which illustrates, for example, a mixed-use building that contains three building types:

$EUI_{AW} = [(GFA_A / GFA_S) \times EUI_A] + [(GFA_B / GFA_S) \times EUI_B] + [(GFA_C / GFA_S) \times EUI_C]$

Key: EUI_{AW} is the area-weighted final site EUI standard
GFA_A is the gross floor area of the largest building type within the covered building
GFA_B is the gross floor area of the second largest building type within the covered building

GFA_C is the gross floor area of the third largest building type within the covered building
GFA_S is the sum of the gross floor area of a GFA_A, GFA_B, and GFA_C
EUI_A is the final performance standard for the building type corresponding to GFA_A
EUI_B is the final performance standard for the building type corresponding to GFA_B
EUI_C is the final performance standard for the building type corresponding to GFA_C[1]

C. Buildings with completely enclosed and/or partially enclosed parking are provided a parking adjustment of 6 kBtu per square foot of parking gross floor area using the following formula:

For covered buildings that consist of one building type:

Parking-adjusted final performance standard = [(Final performance standard x building GFA) + (6 kBtu per GFA x parking GFA)] / building GFA

For mixed use buildings that have an area-weighted final performance standard:

Parking-adjusted final performance standard = [(Area-weighted final performance standard x building GFA) + (6 kBtu per GFA x parking GFA)] / building GFA

D. Buildings with heated swimming pools are provided a kBtu adjustment based on EPA Portfolio Manager Technical Reference: Swimming Pools and the ENERGY STAR Score in the United States and Canada using the following formula:

For covered buildings that consist of one building type:

Pool-adjusted final performance standard = [(Final performance standard x building GFA) + pool kBtu adjustment] / building GFA

For mixed-use buildings that have an area-weighted final performance standard:

Pool-adjusted final performance standard = [(Area-weighted final performance standard x building GFA) + pool kBtu adjustment] / building GFA

E. Buildings with completely enclosed and/or partially enclosed parking and heated swimming pools are provided both adjustments according to the following formula:

For covered buildings that consist of one building type:

[1] Although final performance standards are established per building type in this regulation, the Department may not be able to provide a unique area-weighted final performance standard for a mixed-use building until the building owner submits the first benchmarking report for the mixed-use building.

Adjusted final performance standard = [(Final performance standard x building GFA) + (6 kBtu per GFA x parking GFA) + pool kBtu adjustment] / building GFA

For mixed-use buildings that have an area-weighted final performance standard:

Adjusted final performance standard = [(Area-weighted final performance standard x building GFA) + (6 kBtu per GFA x parking GFA) + pool kBtu adjustment] / building GFA

F. Final performance standards are calculated based on the covered building's most recent benchmarking submission. If a building's type changes from the prior benchmarking submission, then the Department will provide the owner with updated targets to align to the updated square footage breakdown.

18A.43A.01.07 Demonstration of Compliance

A. Covered buildings must demonstrate compliance with the interim and final performance standards by reporting building energy benchmarking data to the Department using the benchmarking tool.

B. The Department must determine compliance by comparing the performance metric against the interim or final performance standard for each covered building.

C. The performance metric is normalized net site EUI and accounts for the renewable energy allowance, using the following formula:

$EUI_{NN} = (EU_N - REA) / GFA$

Key: EUI_{NN} is the normalized net site EUI, expressed in kBtu per square foot
EU_N is normalized site energy use, expressed in kBtu
REA is the renewable energy allowance, expressed in kBtu
GFA is the covered building's gross floor area

18A.43A.01.08 Renewable Energy Allowance

A. The renewable energy allowance will credit all electricity generated from onsite renewable energy systems, whether used onsite or exported back to the grid.

B. Owners of covered buildings must follow the guidance of the benchmarking tool to report renewable energy. To receive a renewable energy allowance, inputs must include:

1. grid energy sent to the building;
2. total renewable energy generated on site;
3. renewable energy used on site; and

4. any renewable energy generated on site and exported back to the grid.

C. Entering net-grid delivered electricity alone is not sufficient for energy benchmarking or to calculate a renewable energy allowance.

18A.43A.01.09 Building Performance Improvement Plans

A. 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.

B. 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.

18A.43A.01.10 Building Performance Improvement Plan Submission

A. The owner must submit a building performance improvement plan to the Department no later than 90 days before the deadline for submitting documentation of compliance with interim or final performance standards in a form prescribed by the Director.

B. A building performance improvement plan must satisfy the following the requirements:
The plan must include supporting documentation that demonstrates economic infeasibility or circumstances outside of the owner's control preventing the building from reaching the interim or final target.

1. The building performance improvement plan must include the results of an energy audit that was performed not more than four years earlier that follows the Level 2 Procedures defined in the most current version of ASHRAE Standard 211, or a comparable standard as approved by the Director, and contains engineering calculations of energy savings and a simple payback analysis of each potential energy improvement measure covering, at a minimum:

   (a) operational improvements;

   (b) low and no-cost energy improvement measures;

   (c) retro-commissioning or recommissioning of existing equipment that is planned to remain in service past the final performance standard date; and

   (d) replacement of existing equipment that is planned to be replaced before the final performance standard date.

2. The plan must contain an assessment that evaluates the initial cost and annual energy savings of potential energy upgrades that include:

   (a) replacement options of existing equipment that is planned to remain in service past the final performance standard date;

   (b) electrification feasibility for replacement of fossil fuel combustion equipment; and

   (c) onsite renewable energy systems.

3. The plan must be completed by a recognized energy auditor that possesses an active credential in good standing of one of the following:

   (a) a credentialing program approved by the U.S. Department of Energy Better Buildings Workforce Guidelines for Building Energy Auditors or Energy Managers;

   (b) a Professional Engineer license; or

   (c) another professional license or building energy training program credential recognized by the Director.

C. The building performance improvement plan must contain a retrofit plan identifying the cost-effective energy improvement measures to be implemented in the building, the calendar year or qualifying event during which such energy improvement measures will be made, and the predicted annual energy savings resulting from implementing the energy improvement measures. The retrofit plan must also:

1. address all building systems, including envelope, heating, cooling, ventilation, domestic hot water, lighting and electrical, elevators, motors, and pumps;

2. if applicable, address building systems located in tenant spaces owned and maintained by the owner;

3. detail energy improvement measures that include operational improvements, equipment retro-commissioning or recommissioning, and equipment replacement; and

4. consist of a package of cost-effective energy improvement measures that maximize energy savings.

D. The plan must acknowledge, on a form approved by the Director, that an accepted building performance improvement plan does not guarantee compliance with County or State building energy performance standards.

18A.43A.01.11 Building Performance Improvement Plan Evaluation

A. The Director must evaluate a building performance improvement plan based on the completeness of materials submitted and the resulting energy savings, taking into consideration the factors of economic infeasibility or circumstances beyond the owner's control documented in the building performance improvement plan.

B. The Director may require that additional measures be assessed, additional documentation be provided, or that additional energy performance improvements be included in the plan. The building owner may then submit an updated building performance improvement plan that addresses the Director's requirements for review.

C. If, after consulting with the Building Performance Improvement Board, the Director approves the building performance improvement plan, the owner must record the building performance improvement plan as a covenant in the County land records and deliver a certified copy of the recorded plan to the Department.

D. If the Director does not approve the plan, the Director must provide the applicant with a written summary of the grounds for denying the building performance improvement plan and the covered building must satisfy the applicable interim or final standard or be considered noncompliant.

18A.43A.01.12 Demonstration of Compliance

A. After the Director receives the certified copy of the recorded plan, the covered building will be deemed to be in compliance with the applicable interim or final performance standards as long as the owner fulfills the terms of the building performance improvement plan within the timeline specified in the plan.

B. Building owners must demonstrate fulfilment of the terms of the building performance improvement plan by reporting annually on June 1 of energy improvement measures implemented in the previous calendar year in a form approved by the Director.

C. Annual building performance improvement plan reporting must also provide information on correcting any noncompliance or deviation from the plan.

D. If, by the final performance target date, the building's EUI is below the EUI target, or the building has fulfilled all of the requirements of the approved building performance improvement plan, the building owner may submit to the Department a request to terminate the covenant

recorded under Section 18A-42B(d) of the County Code for review and approval. If approved by the Department, the County will release the covenant.

E. If the building has not fulfilled the requirements of the approved building performance improvement plan by the final performance target date, the owner must continue to submit annual building performance improvement plan reports.

18A.43A.01.13 Extensions and Adjustments

In addition to the extensions and adjustments criteria outlined in Section 18A-42C of the County Code, the Department may grant an extension to an interim or final performance standard for a covered building whose owner submits a request along with documentation at least 90 days before the deadline for submitting documentation of compliance with an interim or final performance standard if any of the following conditions apply:

A. on average, less than one full-time equivalent employee occupied the building during the calendar year being reported;

B. a change of building ownership where the new building owner cannot obtain necessary benchmarking data for the interim or final performance standard year;

C. affordable housing refinancing timelines that do not align with interim or final performance standard dates; or

D. a building is subject to historic preservation requirements.

18A.43A.01.14 Severability

If a court holds that part of this regulation is invalid, the invalidity does not affect other parts.

18A.43A.01.15 Effective Date

This regulation takes effect upon approval by the County Council.

Approved:

Marc Elrich
County Executive

1/12/2024
Date

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject BUILDING ENERGY PERFORMANCE STANDARDS	**Number** 17-23
Originating Department DEPARTMENT OF ENVIRONMENTAL PROTECTION	**Effective Date** 1/12/2024

APPROVED AS TO FORM AND LEGALITY
OFFICE OF THE COUNTY ATTORNEY:

Assistant County Attorney — Date: 1/8/24

Walter E. Wilson

EXECUTIVE REGULATION 17-23

BUILDING ENERGY PERFORMANCE STANDARDS

JANUARY 2024

BLACKLINED COPY

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

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B. If a building type is designated as "Other" in the benchmarking tool or if evidence suggests that the incorrect building type was entered into the benchmarking tool, the Department must assign the most accurate building type. The Department must reassign a building type that the Department determines to be more accurate based on available data. The owner will have the opportunity to dispute the building type after the Director's decision on the building type.

C. The Department has the final authority to assign a building type to a covered building.

18A.43A.01.05 Establishment of Final Performance Standards by Building Type

A. The following table sets forth the building types and the final performance standard for each building type. If additional building types are created or changed in the benchmarking tool, the Department must set performance targets for those buildings based on best available local and national data and update the building types and targets on the Department's Building Energy Performance Standards website.

Building Type	**Final Performance Standard (kBtu/sq.ft.)**
Adult Education	46
Aquarium	145

Automobile/Vehicle Dealership	61
Bank Branch	85
Bar/Nightclub	220
Barracks	38
Bowling Alley	84
Casino	41
College/University	57
Convenience Store with Gas Station	137
Convenience Store without Gas Station	137
Convention Center	40
Courthouse	47
Data Center	145
Distribution Center	19
Enclosed Mall	44
Fast Food Restaurant	220
Financial Office	58
Fire Station	47
Fitness Center/Health Club/Gym	59
Food Sales	137
Food Service	220
Hospital (General Medical & Surgical)	144
Hotel	60
Ice/Curling Rink	84
Indoor Arena	41
K-12 School	36
Laboratory	144
Library	55
Lifestyle Center	58
Mailing Center/Post Office	48
Medical Office	70
Mixed Use Property	Area-weighted final performance

	standard, see 18A.43A.01.06 Mixed-Use Buildings
Movie Theater	57
Multifamily Housing	37
Museum	29
Non-Refrigerated Warehouse	30
Office	55
Other - Education	45
Other - Entertainment/Public Assembly	48
Other - Lodging/Residential	37
Other - Office	55
Other - Other	54
Other - Public Service	61
Other - Recreation	78
Other - Restaurant/Bar	219
Other - Retail/Mall	81
Other - Services	51
Other - Specialty Hospital	144
Other - Stadium	23
Other - Technology/Science	183
Outpatient Rehabilitation/Physical Therapy	46
Performing Arts	57
Personal Services (Health/Beauty, Dry Cleaning, etc.)	47
Police Station	54
Pre-school/Daycare	48
Prison/Incarceration	38
Race Track	41
Refrigerated Warehouse	38
Repair Services (Vehicle, Shoe, Locksmith, etc.)	52
Residence Hall/Dormitory	38
Residential Care Facility	50

Restaurant	219
Retail Store	48
Roller Rink	84
Self-Storage Facility	7
Senior Living Community	50
Social/Meeting Hall	39
Stadium (Closed)	23
Stadium (Open)	21
Strip Mall	58
Supermarket/Grocery Store	137
Transportation Terminal/Station	56
Urgent Care/Clinic/Other Outpatient	46
Veterinary Office	46
Vocational School	46
Wholesale Club/Supercenter	48
Worship Facility	32
Zoo	41

B. If a covered building consists of one building type, then its final performance standard is the final performance standard for the building type in which it belongs.

18A.43A.01.06 Mixed-Use Buildings

A. Mixed-use buildings have an area-weighted final performance standard based on the percentage of gross floor area assigned to each building type.

B. If a covered building consists of more than one building type, the Department will calculate an area-weighted final performance standard that averages final performance standards of each building type as calculated by the benchmarking tool, excluding parking, using the following formula which illustrates, for example, a mixed-use building that contains three building types:

$EUI_{AW} = [(GFA_A / GFA_S) \times EUI_A] + [(GFA_B / GFA_S) \times EUI_B] + [(GFA_C / GFA_S) \times EUI_C]$

Key: EUI_{AW} is the area-weighted final site EUI standard
GFA_A is the gross floor area of the largest building type within the covered building
GFA_B is the gross floor area of the second largest building type within the covered building

GFA_C is the gross floor area of the third largest building type within the covered building
GFA_S is the sum of the gross floor area of a GFA_A, GFA_B, and GFA_C
EUI_A is the final performance standard for the building type corresponding to GFA_A
EUI_B is the final performance standard for the building type corresponding to GFA_B
EUI_C is the final performance standard for the building type corresponding to GFA_C[1]

C. Buildings with completely enclosed and/or partially enclosed parking are provided a parking adjustment of 6 kBtu per square foot of parking gross floor area using the following formula:

For covered buildings that consist of one building type:

Parking-adjusted final performance standard = [(Final performance standard x building GFA) + (6 kBtu per GFA x parking GFA)] / building GFA

For mixed use buildings that have an area-weighted final performance standard:

Parking-adjusted final performance standard = [(Area-weighted final performance standard x building GFA) + (6 kBtu per GFA x parking GFA)] / building GFA

D. Buildings with heated swimming pools are provided a kBtu adjustment based on EPA Portfolio Manager Technical Reference: Swimming Pools and the ENERGY STAR Score in the United States and Canada using the following formula:

For covered buildings that consist of one building type:

Pool-adjusted final performance standard = [(Final performance standard x building GFA) + pool kBtu adjustment] / building GFA

For mixed-use buildings that have an area-weighted final performance standard:

Pool-adjusted final performance standard = [(Area-weighted final performance standard x building GFA) + pool kBtu adjustment] / building GFA

E. Buildings with completely enclosed and/or partially enclosed parking and heated swimming pools are provided both adjustments according to the following formula:

For covered buildings that consist of one building type:

[1] Although final performance standards are established per building type in this regulation, the Department may not be able to provide a unique area-weighted final performance standard for a mixed-use building until the building owner submits the first benchmarking report for the mixed-use building.

Adjusted final performance standard = [(Final performance standard x building GFA) + (6 kBtu per GFA x parking GFA) + pool kBtu adjustment] / building GFA

For mixed-use buildings that have an area-weighted final performance standard:

Adjusted final performance standard = [(Area-weighted final performance standard x building GFA) + (6 kBtu per GFA x parking GFA) + pool kBtu adjustment] / building GFA

F. Final performance standards are calculated based on the covered building's most recent benchmarking submission. If a building's type changes from the prior benchmarking submission, then the Department will provide the owner with updated targets to align to the updated square footage breakdown.

18A.43A.01.07 Demonstration of Compliance

A. Covered buildings must demonstrate compliance with the interim and final performance standards by reporting building energy benchmarking data to the Department using the benchmarking tool.

B. The Department must determine compliance by comparing the performance metric against the interim or final performance standard for each covered building.

C. The performance metric is normalized net site EUI and accounts for the renewable energy allowance, using the following formula:

$EUI_{NN} = (EU_N - REA) / GFA$

Key: EUI_{NN} is the normalized net site EUI, expressed in kBtu per square foot
EU_N is normalized site energy use, expressed in kBtu
REA is the renewable energy allowance, expressed in kBtu
GFA is the covered building's gross floor area

18A.43A.01.08 Renewable Energy Allowance

A. The renewable energy allowance will credit all electricity generated from onsite renewable energy systems, whether used onsite or exported back to the grid.

B. Owners of covered buildings must follow the guidance of the benchmarking tool to report renewable energy. To receive a renewable energy allowance, inputs must include:

1. grid energy sent to the building;

2. total renewable energy generated on site;

3. renewable energy used on site; and

4. any renewable energy generated on site and exported back to the grid.

C. Entering net-grid delivered electricity alone is not sufficient for energy benchmarking or to calculate a renewable energy allowance.

18A.43A.01.09 Building Performance Improvement Plans

A. 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.

B. 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.

18A.43A.01.10 Building Performance Improvement Plan Submission

A. The owner must submit a building performance improvement plan to the Department no later than 90 days before the deadline for submitting documentation of compliance with interim or final performance standards in a form prescribed by the Director.

B. A building performance improvement plan must satisfy the following the requirements: The plan must include supporting documentation that demonstrates economic infeasibility or circumstances outside of the owner's control preventing the building from reaching the interim or final target.

1. The building performance improvement plan must include the results of an energy audit that was performed not more than four years earlier that follows the Level 2 Procedures defined in the most current version of ASHRAE Standard 211, or a comparable standard as approved by the Director, and contains engineering calculations of energy savings and a simple payback analysis of each potential energy improvement measure covering, at a minimum:

   (a) operational improvements;

   (b) low and no-cost energy improvement measures;

   (c) retro-commissioning or recommissioning of existing equipment that is planned to remain in service past the final performance standard date; and

   (d) replacement of existing equipment that is planned to be replaced before the final performance standard date.

2. The plan must contain an assessment that evaluates the initial cost and annual energy savings of potential energy upgrades that include:

   (a) replacement options of existing equipment that is planned to remain in service past the final performance standard date;

   (b) electrification feasibility for replacement of fossil fuel combustion equipment; and

   (c) onsite renewable energy systems.

3. The plan must be completed by a recognized energy auditor that possesses an active credential in good standing of one of the following:

   (a) a credentialing program approved by the U.S. Department of Energy Better Buildings Workforce Guidelines for Building Energy Auditors or Energy Managers;

   (b) a Professional Engineer license; or

   (c) another professional license or building energy training program credential recognized by the Director.

C. The building performance improvement plan must contain a retrofit plan identifying the cost-effective energy improvement measures to be implemented in the building, the calendar year or qualifying event during which such energy improvement measures will be made, and the predicted annual energy savings resulting from implementing the energy improvement measures. The retrofit plan must also:

1. address all building systems, including envelope, heating, cooling, ventilation, domestic hot water, lighting and electrical, elevators, motors, and pumps;

2. if applicable, address building systems located in tenant spaces owned and maintained by the owner;

3. detail energy improvement measures that include operational improvements, equipment retro-commissioning or recommissioning, and equipment replacement; and

4. consist of a package of cost-effective energy improvement measures that maximize energy savings.

D. The plan must acknowledge, on a form approved by the Director, that an accepted building performance improvement plan does not guarantee compliance with County or State building energy performance standards.

18A.43A.01.11 Building Performance Improvement Plan Evaluation

A. The Director must evaluate a building performance improvement plan based on the completeness of materials submitted and the resulting energy savings, taking into consideration the factors of economic infeasibility or circumstances beyond the owner's control documented in the building performance improvement plan.

B. The Director may require that additional measures be assessed, additional documentation be provided, or that additional energy performance improvements be included in the plan. The building owner may then submit an updated building performance improvement plan that addresses the Director's requirements for review.

C. If, after consulting with the Building Performance Improvement Board, the Director approves the building performance improvement plan, the owner must record the building performance improvement plan as a covenant in the County land records and deliver a certified copy of the recorded plan to the Department.

D. If the Director does not approve the plan, the Director must provide the applicant with a written summary of the grounds for denying the building performance improvement plan and the covered building must satisfy the applicable interim or final standard or be considered noncompliant.

18A.43A.01.12 Demonstration of Compliance

A. After the Director receives the certified copy of the recorded plan, the covered building will be deemed to be in compliance with the applicable interim or final performance standards as long as the owner fulfills the terms of the building performance improvement plan within the timeline specified in the plan.

B. Building owners must demonstrate fulfilment of the terms of the building performance improvement plan by reporting annually on June 1 of energy improvement measures implemented in the previous calendar year in a form approved by the Director.

C. Annual building performance improvement plan reporting must also provide information on correcting any noncompliance or deviation from the plan.

D. If, by the final performance target date, the building's EUI is below the EUI target, or the building has fulfilled all of the requirements of the approved building performance improvement plan, the building owner may submit to the Department a request to terminate the covenant

recorded under Section 18A-42B(d) of the County Code for review and approval. If approved by the Department, the County will release the covenant.

E. If the building has not fulfilled the requirements of the approved building performance improvement plan by the final performance target date, the owner must continue to submit annual building performance improvement plan reports.

18A.43A.01.13 Extensions and Adjustments

In addition to the extensions and adjustments criteria outlined in Section 18A-42C of the County Code, the Department may grant an extension to an interim or final performance standard for a covered building whose owner submits a request along with documentation at least 90 days before the deadline for submitting documentation of compliance with an interim or final performance standard if any of the following conditions apply:

A. on average, less than one full-time equivalent employee occupied the building during the calendar year being reported;

B. a change of building ownership where the new building owner cannot obtain necessary benchmarking data for the interim or final performance standard year;

C. affordable housing refinancing timelines that do not align with interim or final performance standard dates; or

D. a building is subject to historic preservation requirements.

18A.43A.01.14 Severability

If a court holds that part of this regulation is invalid, the invalidity does not affect other parts.

18A.43A.01.15 Effective Date

This regulation takes effect upon approval by the County Council.

Approved:

Marc Elrich
County Executive

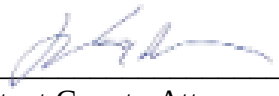
1/12/2024
Date

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject BUILDING ENERGY PERFORMANCE STANDARDS	**Number** 17-23
Originating Department DEPARTMENT OF ENVIRONMENTAL PROTECTION	**Effective Date** 1/12/2024

APPROVED AS TO FORM AND LEGALITY
OFFICE OF THE COUNTY ATTORNEY:



Assistant County Attorney

Walter E. Wilson

1/8/24

Date