



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

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.

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or

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COMCOR 18A.43A.01 Building Energy Performance Standards

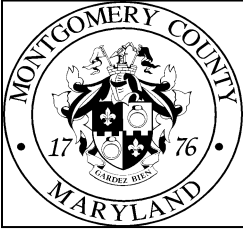
18A.43A.01.01 General Provisions

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.



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- 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.



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- 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.

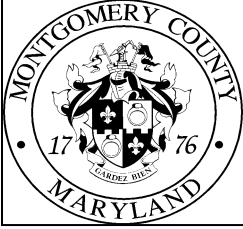
18A.43A.01.04 Establishment of Building Types

- 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

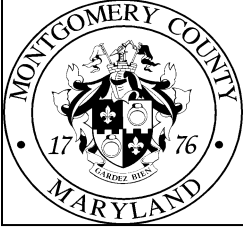


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Automobile/Vehicle Dealership	61
Bank Branch	85
Bar/Nightclub	220
Barracks	38
Bowling Alley	84
Casino	41
College/University	57
Convenience Store with Gas Station	137
Convenience Store without Gas Station	137
Convention Center	40
Courthouse	47
Data 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



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	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



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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



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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_C¹

- 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.



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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



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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.



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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.



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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



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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.

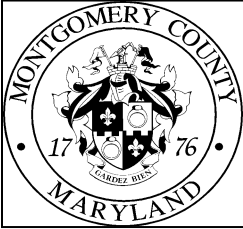
18A.43A.01.15 Effective Date

This regulation takes effect upon approval by the County Council.

Approved:

Marc Elrich
County Executive

Date



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APPROVED AS TO FORM AND LEGALITY
OFFICE OF THE COUNTY ATTORNEY:

A handwritten signature in blue ink, appearing to read "W. E. Wilson", written over a horizontal line.

Assistant County Attorney

Walter E. Wilson

1/8/24

Date