Maryland Department of the Environment

COMAR 26.28

Building Energy Performance Standards

What You Need to Know

July 1, 2024

Purpose

The purpose of this action is to create the Maryland Building Energy Performance Standards (BEPS) as required by the Climate Solutions Now Act (CSNA) of 2022. See, in relevant part, Title 2, Subtitle 16 of the Environment Article, Annotated Code of Maryland. The goal is to reduce direct greenhouse gas (GHG) emissions and improve overall energy efficiency from Maryland's building sector for certain buildings that are 35,000 square feet or larger. The regulation requires covered building owners to measure and report data to the Maryland Department of the Environment (MDE). The regulation further requires that covered building owners meet specific net direct GHG emissions. The regulation also contains record keeping and reporting requirements for electric and gas companies and district energy providers.

Additional regulatory actions on BEPS will be taken at a later date. Per language in the Budget Bill (Fiscal Year 2025), SB 360/Chp. 716 of 2024, MDE plans to adopt energy use intensity (EUI) standards in 2027 following the submission of a report to the General Assembly and calculation of EUI standards based on data reported to MDE in 2026. EUI standards are important for promoting efficient electrification to enable Maryland's clean energy transition, minimize electricity grid impacts, and achieve Maryland's goal of net-zero GHG emissions by 2045.

Submission to EPA as Revision to Maryland's State Implementation Plan (SIP)

This action will not be submitted to the U.S. Environmental Protection Agency (EPA) as part of Maryland's SIP.

Background

In 2022, the Maryland General Assembly passed the CSNA that modified Maryland's GHG emissions reduction goals in response to the latest science indicating that more stringent goals are necessary to combat climate change. CSNA set new goals to reduce statewide GHG emissions by 60% below 2006 levels by 2031 and achieve net-zero emissions by 2045. Among the requirements outlined in the new law is that Maryland implement BEPS. CSNA requires MDE to develop BEPS for covered buildings that: achieve a 20% reduction in net direct GHG emissions on or before January 1, 2030, as compared with 2025 levels for average buildings of similar construction; attain net-zero direct GHG emissions on or before January 1, 2040; and include EUI targets by building type.

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Covered buildings will be required to benchmark energy use utilizing the United States Environmental Protection Agency's (EPA) ENERGY STAR Portfolio Manager tool, which is a free, interactive resource management tool that enables the benchmarking of energy use of any type of building. Covered buildings are subject to interim performance standards beginning in 2030 and running through 2039, and to a final performance standard that must be achieved on an annual basis in 2040 and beyond. Covered buildings are those defined in the regulation and further elaborated in TM 24-01 A.1.2. Building owners who believe their buildings are exempt must follow the procedure for exemption laid out in TM 24-01 A.1.2.2.

In July 2023, Maryland joined the White House National Building Performance Standards Coalition,[1] which is a nationwide group of state and local governments that have committed to inclusively design and implement building performance policies and programs in their jurisdictions. Maryland's development of BEPS has been supported by federal agencies, labor, and non-governmental organizations that provided resources for workforce engagement, technical analysis, equity strategies, policy design, and stakeholder engagement.

Sources Affected and Location

The proposed regulation applies to buildings in Maryland that are 35,000 square feet or larger (excluding the parking garage area). Historic buildings, public and nonpublic elementary and secondary schools, manufacturing buildings, agricultural buildings, and federal buildings are exempt. There are approximately 9,000 covered buildings in Maryland located across all counties. Electric and gas companies and, in limited cases, tenants in covered buildings are required to maintain and provide energy consumption data for covered buildings.

Requirements

This regulation requires covered building owners to report data to MDE through the EPA ENERGY STAR Portfolio Manager tool. Benchmarking will begin in 2025 and compliance with direct GHG emissions will begin in 2030. Covered building owners may need to make improvements to their buildings to meet the net direct GHG emissions standards. Covered buildings must meet interim standards in 2030 through 2039 and final standards in 2040 and beyond or pay an alternative compliance fee. Interim and final standards are set in the regulation. Electric companies and gas companies are required to maintain and provide energy consumption data for all covered buildings and provide to the building owner accurate

[1] National BPS Coalition (July 2023), https://nationalbpscoalition.org/.

and timely information on the actual amount of electricity, gas, or fuel delivered to a covered building. District energy companies are required to provide information on the emissions intensity of their district energy system to their customers.

A tenant of a covered building is required to provide requested benchmarking information to a covered building owner that cannot otherwise be acquired from other sources.

Projected Emissions Reductions

According to Maryland's GHG Emissions Inventory,[2] direct fuel use in buildings produced nearly 14 million metric tons of carbon dioxide equivalent (MMTCO2e) in 2020. Electricity consumption, almost all of which was consumed in buildings, generated approximately 18 MMTCO2e in 2020. Through their direct fuel use and electricity consumption combined, Maryland's buildings accounted for roughly a third of all statewide GHG emissions. Buildings covered by BEPS accounted for approximately 5 MMTCO2e in 2020. In combination with state and federal policies to achieve 100% clean power generation, BEPS is modeled to reduce emissions by approximately 8.8 MMTCO2e between 2025 and 2050 based on a 2024 study by the U.S. Department of Energy's Lawrence Berkeley and Pacific Northwest National Laboratories. According to a 2023 study by the U.S. Department of Energy's Lawrence Berkeley and Pacific Northwest National Laboratories, the inclusion of future site EUI standards are modeled to further reduce emissions by approximately an additional 10 MMTCO2e.

Planned Future Actions

MDE will conduct an updated analysis after the 2025 benchmarking data are submitted in 2026 to determine if the interim standards need to be modified based on actual 2025 benchmarked building energy performance. As part of this action, the Department will develop interim and final EUI standards for all property types. These standards will be included in a future update of the regulation. The combination of direct GHG and site EUI standards delivers efficient electrification, which will not only make it easier for the state to achieve its GHG reduction goals, but also enable the covered building stock to electrify at a sufficient scale to achieve the BEPS emissions goals by mitigating winter peak electricity demand.

A 2023 study by the U.S. Department of Energy's Lawrence Berkeley National Laboratory found that a sample including 87% of Maryland's covered buildings currently has a peak electricity demand of around

[2] Maryland Greenhouse Gas Emissions Inventory (September 26, 2022), https://mde.maryland.gov/programs/air/climatechange/pages/greenhousegasinventory.aspx.

2.74 gigawatts occurring on hot summer days. According to that study, the proposed BEPS regulation with only GHG emissions standards will lead to peak electricity demand shifting to the winter and increasing 24% to 3.4 gigawatts by 2040. With the future addition of site EUI standards to BEPS, peak electricity demand is expected to decrease 6% to 2.58 gigawatts by 2040. Reducing peak demand reduces the need for ratepayer funded grid improvements and helps Maryland efficiently use existing electric grid infrastructure. A copy of the Lawrence Berkeley National Laboratory's peak electricity demand study is included in the Technical Support Document.

Economic Impact on Affected Sources, the Department, other State Agencies, Local Government, other Industries or Trade Groups, the Public

Between 2025 and 2040, building owners whose buildings do not already meet the BEPS standards will be required to implement energy efficiency measures and/or electrification measures or pay alternative compliance fees in order to comply with BEPS. A BEPS regulation including EUI standards would lead to significant energy savings and returns on investment for building owners. MDE advises building owners that analysis has shown implementing energy efficiency measures will reduce energy costs. The current BEPS regulation, which establishes emissions standards but does not yet establish EUI standards, may lead to weaker returns on investment if electrification measures are pursued without consideration of reducing EUI as well.

Results from a 2024 study by the U.S. Department of Energy's Lawrence Berkeley and Pacific Northwest National Laboratories demonstrate that during BEPS implementation (2025-2040), under the current regulation that includes emissions standards but does not yet include EUI standards, all covered buildings combined will spend more on efficiency measures ($205 million) and electrification measures ($5.53B) than the energy cost savings accrued in this period ($1.2B). On a longer time horizon (2025-2050), energy cost savings increase to $4.6B. On average, over the 2025-2050 time horizon, covered buildings spend $0.65 per square foot. However, there is significant variation with 25% of covered buildings modeled to save more than $0.06 per square foot and 25% of covered buildings modeled to spend more than $2.65 per square foot.

Modeling from the National Labs shows that future site EUI standards will lead most owners to cost savings. During BEPS implementation (2025-2040), under a future regulation that includes emissions and EUI standards, 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). However, on a longer time horizon (2025-2050), energy cost savings increase to $22.3B, indicating a net savings for Maryland's covered buildings. On average, over the 2025-2050 time horizon, covered buildings save $4.47 per square foot. However, there is significant variation with 25% of covered buildings modeled to

save more than $9.29 per square foot and 25% of covered buildings modeled to spend more than $4.43 per square foot.

The Building Energy Transition Task Force, created by the CSNA, delivered a report to the Governor and the General Assembly in January 2024[3] The report included recommendations relating to funding the retrofit of covered buildings to comply with BEPS. Additionally, through the efforts of various state agencies, significant funding from the federal Bipartisan Infrastructure Law and Inflation Reduction Act is expected to reduce costs of compliance with BEPS for Maryland's affected sources and speed their return on investments. For example, the federal Energy Efficient Commercial Building Deduction provides up to $5 per square foot for projects that reduce energy use intensity, including electrification projects.

According to the Lawrence Berkeley National Lab study on peak demand impacts from BEPS, the GHG emissions standard alone will increase peak demand. This would require additional grid improvements paid for by electric ratepayers. With the future incorporation of site EUI standards, the public in Maryland could see economic benefits through reduced electricity rates due to the impact of BEPS on reducing strain on the electricity grid.

Economic Impact on Small Business

As described above, on average, over the 2025-2050 time horizon, covered buildings spend $0.65 per square foot. With the inclusion of future site EUI standards, covered buildings save $4.47 per square foot over that same timeframe. The savings and costs identified in the 2024 study from the U.S. Department of Energy's Lawrence Berkeley and Pacific Northwest National Laboratories will impact small businesses that are covered building owners and may also impact small businesses that are tenants in buildings covered by BEPS.

The Building Energy Transition Task Force report included recommendations for funding the retrofit of covered buildings to comply with BEPS. Additionally, significant funding from the federal Bipartisan Infrastructure Law and Inflation Reduction Act are expected to reduce costs of compliance with BEPS for Maryland's affected sources and small businesses.

[3] https://mde.maryland.gov/programs/air/ClimateChange/Pages/BETITF.aspx

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Is there an Equivalent Federal Standard to this Proposed Regulatory Action?

In December 2022, the U.S. Council on Environmental Quality (CEQ) issued a Federal Building Performance Standard (BPS).[4] The Federal BPS was issued according to the requirements set by Executive Order (E.O.) 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*.[5] The Federal Government is considered the single largest energy consumer in the country, and the Federal BPS includes facilities owned by the Federal Government or covered facilities according to section 432 of EISA (42 U.S.C. § 8253(f)(2)(B)). The Federal BPS will deliver a net-zero emissions building portfolio by 2045, including a 50 percent GHG emissions reduction by 2032, prioritizing energy efficiency and electrification. To achieve these goals, section 205(b) of E.O. 14057 provides that agencies should use the Federal BPS to prioritize reductions in scope 1 GHG emissions. Scope 1 emissions cover standard building operational needs, including direct emissions from space heating and cooling, water heating, cooking, backup generators, and laundry.

Documents to be Incorporated by Reference

Maryland Department of the Environment Technical Memorandum 24-01, "Technical Guidance and Calculation Methodologies to Comply with Building Energy Performance Standards," July 2024.

[4] The Federal Building Performance Standard, Council on Environmental Quality (December 2022), https://www.sustainability.gov/pdfs/federal-building-performance-standard.pdf.

[5] 86 FR 70935 (December 13, 2021), https://www.whitehouse.gov/briefing-room/presidentialactions/2021/12/08/executive-order-on-catalyzing-clean-energy-industries-and-jobs-through-federal-sustainability/.