



## PRESIDENT & CEO

Mahesh Ramanujam

## FOUNDERS

David Gottfried

Michael Italiano

S. Richard Fedrizzi

2101 L St. NW  
Suite 500  
Washington, DC 20037

202-828-7422

usgbc.org

July 15, 2021

Montgomery County Council  
Council Office Building  
100 Maryland Avenue, 6th Floor  
Rockville, MD 20850

Montgomery County Department of Environmental Protection (DEP)  
2425 Reedie Drive, 4th Floor  
Wheaton, MD 20902

RE: U.S. Green Building Council support for a Building Energy  
Performance Standard (BEPS) (Bill 16-21)

On behalf of the U.S. Green Building Council (USGBC), and our strong community in Montgomery County Maryland, we are pleased to provide our support for a BEPS in Montgomery County (Bill 16-21). We thank the County for their leadership in addressing the built environment's role within the County's broader efforts to reduce greenhouse gas (GHG) emissions and applaud Montgomery County's continued work towards meeting its ambitious climate and energy goals.

Building performance standards are a promising approach aiming to achieve a highly effective, long-term, technology-neutral method to improve building performance. The results from BEPS offer numerous benefits for building owners, operators, users, and the surrounding environment. Especially of note, when buildings are required to meet defined levels of performance, the County has increased certainty of progress towards its goals and the market can plan to meet the increased retrofit demand.

USGBC is eager to leverage our quarter century of experience leading the design, construction and maintenance of high-performing, sustainable buildings, communities and cities to assist Montgomery County with their commitment to achieve net zero carbon emissions by 2030 and in implementing a successful BEPS. LEED provides a valuable and complementary tool for building owners and operators to achieve sustainable and low-carbon buildings. We are available to provide additional technical resources and we welcome the opportunity to provide more information about the industry-leading tool LEED, as well as LEED Zero.

Please do not hesitate to contact me if you have any questions or wish to discuss these issues further.

Sincerely,

*Jennifer Gunby*

Jennifer Gunby, PE, LEED AP  
State and Local Advocacy Manager  
U.S. Green Building Council

**Enclosure:**

LEED and Building Performance Standards: Working Together to Support Sustainable and Low-Carbon Buildings

**USGBC and LEED in Maryland:**

USGBC is a nonprofit organization dedicated to transforming the way buildings and communities are designed, built, and operated, enabling an environmentally and socially responsible, healthy, and prosperous world. Our flagship green building system, LEED, already has been embraced in Montgomery County by property owners, developers, business owners, and building professionals.

LEED takes a comprehensive approach to buildings, considering objectives such as energy and water efficiency and indoor environmental quality, as well as resource efficiency. LEED projects must meet a set of rigorous criteria in a flexible system of prerequisites and optional credits that, when combined, set building projects on the path to excellence in sustainability and support resilience. And that has led to LEED becoming the most widely used green building program in the world.





# LEED and Building Performance Standards: Working Together to Support Sustainable and Low-Carbon Buildings

Cities and states are taking the lead in climate action by making ambitious pledges to reduce greenhouse gas emissions (GHGs) and to reduce overall energy demand. Before the U.S. rejoined the Paris climate agreement in 2021, hundreds of mayors signed pledges to reduce their cities' emissions to meet Paris-level standards.<sup>1</sup> States also took bold steps to reduce causes of climate change, including joining the U.S. Climate Alliance to commit to meeting the terms of the agreement at the state level.<sup>2</sup>

To meet these goals, jurisdictions must accelerate carbon reductions from building operations. Buildings are a significant consumer of energy, including on-site fuels and drawing electricity from power grids. They and their construction together account for 28% of energy consumption and 34% of energy-related carbon dioxide emissions each year in the United

States.<sup>3</sup> Energy consumption by and carbon emissions from buildings are leading contributors to climate change - but much of this could be avoided through enhanced performance.

With enhanced performance comes reductions in fossil fuel consumption and their associated carbon emissions. Many cities and states are taking action to achieve this by increasing the stringency of building codes and implementing efficiency and solar-ready requirements for new construction.

These steps are important, so that we “get it right” with new buildings, but in many places across the U.S., the volume of new buildings constructed each year is minimal compared to a jurisdiction's total building stock. Thus, improvements must be made to the overall performance of existing buildings to enact

---

<sup>1</sup> [Member Cities](#), Climate Mayors.

<sup>2</sup> [Report: U.S. States with Climate Commitments Off Track to Reach Science-based Emissions Goals](#), Environmental Defense Fund.

<sup>3</sup> [2020 Global Status Report for Buildings and Construction](#), Global Alliance for Buildings and Construction and UN Environment Programme.

transformational reduction in GHGs and reduce impact on the climate.

To address existing buildings, more and more jurisdictions are considering and adopting building performance standards, sometimes called “BPS.” When buildings are required to meet defined levels of performance, the jurisdiction has increased certainty of progress towards its goals, and the market can plan to meet the increased retrofit demand. The energy intensity reductions resulting from building performance standards offer numerous benefits for building owners, operators, users, and the surrounding environment, as well, and these co-benefits are important considerations.

Building performance standards are a promising approach aiming to achieve a highly effective, long-term, technology-neutral method to improve building performance. This brief explores the power and potential of performance mandates to make transformational changes in building performance, and the relationship between green buildings and BPS.

### What are Building Performance Standards?

Building performance standards at a minimum encompass three elements:

- 1) establishing a measurable standard of performance, which may be based on energy intensity, carbon intensity, or other metric;
- 2) requiring certain buildings to achieve the standard within a set period or deadline, and
- 3) providing for reporting and compliance.

Some building performance standards include additional elements. For example, some may specify the steps to be taken if a building doesn’t meet minimum performance targets, such as undergoing specific retrofits. Some performance standards including provisions for targets to become more stringent over time, resulting in long-term impact on building performance.



Figure 1: The [American Geophysical Union building](#) in Washington, DC underwent a major renovation enabling it to reach high levels of performance. The project achieved net zero energy status using LEED as a guide and tool.

### How does ENERGY STAR Portfolio Manager support BPS?

The [ENERGY STAR Portfolio Manager](#) system, developed and supported by the U.S. Environmental Protection Agency (EPA), enables building owners and operators to measure and then benchmark their building portfolio’s energy usage online. Around 25% of commercial building space in the U.S. is already actively using ENERGY STAR Portfolio Manager to benchmark their energy usage.



Figure 2: [Entegri headquarters](#) in Little Rock, Arkansas was the first LEED Zero building in the United States.

Accordingly, all of the state and local building BPS utilize ENERGY STAR Portfolio Manager for reporting. In a few cases such as in

Washington, DC, the BPS uses the ENERGY STAR Score as the key performance metric.<sup>4</sup>

#### What are some of the ways BPS vary?

**Standards.** While building performance policies can target carbon emissions and water use, they most often specify energy consumption using an energy intensity metric.

**Scope.** Building performance policies are most frequently mandated for state-owned facilities, in leadership policies. Increasingly, states and cities are adopting a performance standard for private sector commercial buildings as well, to impact the building footprint across their jurisdiction. BPS most commonly include covered buildings that are 50,000 square feet or larger, and require smaller buildings, ranging from 5,000 to 10,000 square feet to comply over time.<sup>5</sup>

#### How do Building Performance Standards Affect Building Owners?

Performance standards trigger under-performing buildings to implement energy-saving or carbon-saving measures over time, thereby reducing energy consumption and/or carbon emissions, where the reduced operating costs provide payback to the owner. Owners usually have flexibility in determining what upgrades to make in order to meet the standard. By having a degree of flexibility, owners can better meet the standard, while government entities can avoid political backlash as well as a large number of unnecessary exemptions.<sup>6</sup>

#### Why are Performance Mandates Important?

Building performance standards represent a step up from incremental policies like lighting upgrades and building tune-ups, which are beneficial yet not tied to a specific ongoing performance outcome. By mandating certain performance by buildings, cities and states can ensure that building portfolios are demonstrating long-term efficiency success.<sup>7</sup>

By implementing minimum performance standards, states and municipalities can ensure that buildings in their jurisdiction will not only improve but will reach specific targeted levels of energy efficiency or carbon emissions.

#### Community-Scale Benefits

By implementing minimum standards of building performance, cities and states can experience various benefits beyond energy savings. Reduced on-site fossil fuel combustion, for example, can improve localized air quality and indoor air quality, which can alleviate adverse health impacts and environmental outcomes.

A buildings performance standard can also support the local economy, by creating opportunities for the expansion of energy efficiency and clean energy sectors, and local job creation. Additionally, improved performance can support energy cost savings, increased

<sup>4</sup> [Building Energy Performance Standards \(BEPS\)](#), Department of Energy and Environment, Washington, DC.

<sup>5</sup> [Implementing Building Performance Standards: Consistency is Key](#), New Buildings Institute.

<sup>6</sup> [Raising the Standard: Building Performance and the Reshaping of City and State Energy Regulation](#),

David Cohan, Institute for Market Transformation, and Kimberly Cheslak and Jim Edelson, New Buildings Institute, 2020 ACEEE Summer Study on Energy Efficiency, American Council for an Energy-Efficient Economy.

<sup>7</sup> [Building Performance Standards](#), Institute for Market Transformation.

building asset values, and enhanced resilience at the building and community levels.<sup>8</sup>

### Performance Mandates in Practice

By adopting a BPS policy, cities and states establish their priorities for building performance and their long-term goals. States adopting building performance standards have most frequently done so for state-owned or state-operated facilities. Many states that have started with policies for state buildings have expanded to mandate a performance standard for commercial buildings as well.

Developing and adopting a building performance standard can take several years. Typically, the jurisdiction undertakes extensive analyses to understand the current levels of performance. Models are used to evaluate different targets and scopes, and to estimate potential costs.

Buildings can't become "high-performing" immediately, thus making a BPS a long-term, forward-thinking commitment towards building performance that often achieves incremental targets for efficiency and carbon reductions.<sup>9</sup>

#### Audit & Retrofit Requirements

A precursor to building performance standards, mandatory audit and retrofit policies have been used in some jurisdictions to make strides in improving performance of public facilities. These policies require the actions, but not a specific outcome performance level. The audit typically identifies cost-effective energy conservation measures, and the retrofit implements some or all of the measures.

These policies are popular because they decrease building energy costs borne by the government entity, and as a result, alleviate taxpayer burden. In some cases, a policy started as an audit

requirement, with the retrofit requirement added later. States or cities that mandate audits and retrofits in tandem may be more effective by reducing the possibility for audit recommendations to become "stale" or otherwise not be acted upon.

In a few places, such as Seattle, Washington, audit and retrofit requirements have been issued for private sector buildings as well as public facilities.

### Examples of Building Performance Standards

For a map and links to all BPS in the U.S., see the Institute for Market Transformation's (IMT) [Building Performance Standards Map](#) for a summary of U.S. jurisdictions that have passed BPS. Below, we provide representative examples of BPS in practice in the U.S. Note this is not an exhaustive list of BPS.

Washington, DC (2018)

Washington, DC's [Building Energy Performance Standards](#) policy includes mandates for both privately-owned and DC-owned buildings. The standard uses EPA's [ENERGY STAR](#) as its performance metric, requiring that buildings receive an ENERGY STAR score, or an equivalent metric. For buildings eligible to receive an ENERGY STAR score, the building energy performance standard in DC is no lower than DC's median ENERGY STAR score for buildings of each property type. For buildings not eligible to receive an ENERGY STAR score, they must still benchmark and report their data to the Department of Energy and Environment (DOEE) via the Portfolio Manager platform. DOEE is to issue new performance standards every six years.

<sup>8</sup> [Benchmarking and Building Performance Standards Policy Toolkit](#), Energy Resources for State and Local Governments, U.S. Environmental Protection Agency.

<sup>9</sup> [Building Performance Standards: A Power New Tool in the Fight Against Climate Change](#), Institute for Market Transformation.

### **How do Building Performance Standards relate to LEED and Green Building?**

For over 20 years, the Leadership in Energy and Environmental Design (LEED) green building rating system has been pushing the top tier of buildings towards better performance. LEED began as a tool for market transformation – and just as the private sector embraced LEED, so did government agencies. Federal, state, and local governments were attracted to LEED’s systematic approach, the ability to use LEED to convey the agency’s sustainability goals to its contractors, as well as internal staff, and the results they saw.

The growth in LEED certifications, even as the system has evolved with increasingly stringent versions, shows that improving the quality and performance of our buildings, including existing and historical buildings, is achievable. In this way, LEED and improved building codes have helped move the industry to a point where increased building performance is expected, and therefore requirements for such performance in the form of building performance standards are more likely to be accepted. In fact, we’ve seen a nexus between jurisdictions’ use of green building and the adoption of benchmarking and beyond benchmarking requirements, including establishment and utilization of GHG emission inventories and transparent reporting practices.<sup>1</sup>

In the context of the current suite of building performance standards, LEED provides a valuable and complementary tool for building owners and operators to achieve sustainable and low-carbon buildings.

First, LEED is a proven system for achieving goals, and building teams can apply its integrated process and best practice strategies to enable meeting a BPS requirement. Project teams can rely upon the mature support systems, extensive resources and education, system updates reflecting emerging practices, use of performance measures, and market feedback.

Secondly, LEED provides added value beyond the energy or carbon intensity reduction that is the sole focus of the building performance standards. For owners with interest in more holistic sustainability – for example, considering beneficial outcomes for habitat and water quality – or in ensuring a healthy indoor environment for occupants, LEED is a valuable companion to any upgrades being undertaken to meet a building performance standard. Moreover, these “other” outcomes often come with their own carbon emissions reductions as well. In fact, according to a 2014 University of California-Berkeley study, buildings built to LEED standards contributed 50% fewer GHGs than conventionally built buildings due to water consumption, 48% fewer GHGs due to solid waste and 5% fewer GHGs due to transportation.<sup>1</sup> Such GHGs are not accounted for in the building performance standards currently in place.

In terms of a direct connection between LEED and building performance to a particular standard, while there is no shortcut or substitute for the actual standard, it is important to keep in mind that levels matter. Data have demonstrated that LEED buildings at the higher tiers of certification have lower energy and carbon intensity.<sup>1</sup>

LEED can be used to reach the highest level of building performance – net zero energy and carbon. Jurisdictions considering new or revised building performance standards in the future might consider ways to incorporate LEED, recognizing its additional carbon reductions as well as other valued outcomes such as healthy indoor environmental quality requirements. Potentially, a jurisdiction could provide an incentive to achieve LEED for Existing Buildings certification along with achieving the specific building performance standard metric. Incentives could be related to a longer timeframe for compliance, financial incentive, or others.

*New York City (2019)*

New York City's Buildings Mandate ([Local Law 97](#)) was passed as part of the NYC Climate Mobilization Act in 2019. The [mandate](#) requires that commercial and multifamily residential buildings over 25,000 square feet to reduce their emissions, including those associated with grid power usage, by 40% by 2030 and by 80% by 2050. Buildings account for 71% of NYC greenhouse gas emissions, and the large existing buildings impacted by this law alone account for about 30% of citywide emissions.

Building owners face fines of \$268 per ton of emissions above their designated cap beginning in 2024. Fines could reach as high as \$5 million annually for individual buildings. Building owners can avoid fines and stay under their emissions caps by investing in energy efficiency and clean energy.

The law included a provision authorizing the establishment of property-assessed clean energy ([PACE](#)) financing in New York City. Building owners may use PACE financing to finance the upfront costs of installation of energy-saving equipment or onsite renewable energy. Loans are paid back over the life of the equipment, usually 20 years or more.

*Washington State (2019)*

Washington's [Clean Buildings Bill](#) was signed into law in 2019. The law required the Department of Commerce to develop and implement an energy performance standard for commercial buildings greater than 50,000 square feet, and to provide incentives to encourage energy efficiency improvements. Industrial and agricultural buildings are exempt from the standard. The law directed Commerce to adopt ASHRAE Standard 100-2018 as a base, and to establish energy use intensity targets specific to Washington state for different building occupancy types.

In July 2021 the [Early Adopter Incentive Program](#) started, and buildings, depending on

their size, must start [complying](#) with the new standards by June 2026.

Washington's energy performance standard must be updated by 2029 and every five years thereafter. Buildings that fail to meet the targets will be subject to an administrative penalty, but buildings that comply early may be eligible for incentives.



*Figure 3: Located in St. Louis, the [Mid-Campus Center](#) of Washington University and the Barnes-Jewish Center for Outpatient Health is a 517,000 square foot building in the center of campus. This 12-story office building was certified LEED Gold in 2020. The project is included on the [covered buildings list](#) for the city ordinance and has already started reporting energy performance data, showing it is on track to meet the city's Building Energy Performance Standard.*

*St. Louis, Missouri (2020)*

St. Louis, Missouri Mayor Lyda Krewson signed a law in 2020 establishing a mandatory [Building Energy Performance Standard](#) in the city. The standard requires large commercial, multi-family, institutional, and municipal buildings (50,000 square feet in size and larger) to reduce energy use in order to meet an energy performance standard by May 2025. The standard is to be reviewed and updated every four years. Performance standards are set by the Building Energy Improvement Board and measured in

the amount of energy used per square foot at the building (site energy use intensity or EUI) and based on building type.

Building owners will be required to comply with standards using [ENERGY STAR's Portfolio Manager](#) too. Along with enacting the performance standard, the law created the Office of Building Performance to oversee the implementation, compliance and enforcement of the existing Building Energy Awareness ordinance and any future ordinances related to building energy improvement and performance.

### **Example of a Building Benchmarking and Tune Up Policy**

Not all jurisdictions are ready to enact a performance standard, and as noted above, having a benchmarking policy is an important first step to understand the energy intensity of local buildings on which to establish performance standards. Below is an example of a recent policy that combines benchmarking with a requirement for periodic audit and/or prescriptive measures.

#### *Chula Vista, California (2021)*

The city of Chula Vista adopted its [Building Energy Savings Ordinance](#) in 2021 to support its 2017 Climate Action Plan. Buildings measuring 20,000 square feet or larger are required to comply with the regulations, which include annual benchmarking reporting using ENERGY STAR Portfolio Manager and conservation measures. All properties over 20,000 square feet must complete certain conservation measures every five years. The ordinance also [requires](#) buildings to “measurably improve” their

performance over each five-year period or undertake an audit, and it requires prescriptive updates for buildings that have not improved in two five-year increments.

### **Resources**

American Council for an Energy-Efficient Economy (ACEEE)

- [Mandatory Building Performance Standards: A Key Policy for Achieving Climate Goals](#) (2020)

Institute for Market Transformation (IMT)

- [Building Performance Standards Are a Powerful New Tool in the Fight Against Climate Change](#) (2020)
- [Comparison of U.S. Building Performance Standards](#) (2021)

New Buildings Institute (NBI)

- [Implementing Building Performance Standards is Key](#) (2020)

Northeast Energy Efficiency Partnerships (NEEP)

- [Building Energy Performance Standards Policy Considerations](#) (2020)

U.S. Environmental Protection Agency (EPA)

- [Benchmarking and Building Performance Standards Policy Toolkit](#) (2021)
- [Building Performance Standards: Overview for State and Local Decision Makers](#) (2021)