ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT (EECBG) PROGRAM

Key Activities Summary

Blueprint 2D: Building Performance Standards and Stretch Codes

This Key Activities Summary provides a concise overview of the **Building Performance Standards and Stretch Codes**. DOE plans to provide technical assistance support to all entities who select this Blueprint, which may include one-on-one attention from DOE or national lab experts, webinars, and peer learning opportunities.

blueprints
Energy Efficiency & Conservation Block Grant Program

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STATE & COMMUNITY ENERGY PROGRAMS

What

Building Performance Standards are outcome-based policies and laws aimed at improving energy efficiency and reducing the carbon impact of the built environment by requiring existing buildings to meet increasingly stringent energy and/or greenhouse gas emissions-based performance targets. These performance targets typically increase in stringency every 4-6 years in order to reach a goal in a target year (e.g., 2050). This enables long-term energy and emissions performance planning for existing buildings to incrementally move toward that long-term, high performance (e.g., zero energy) or low emissions (e.g., zero carbon) goal. Building performance standards typically focus on commercial and multifamily buildings over 10,000 ft2 and, when combined with building codes for new construction and major renovations, they are powerful policy tools that enable a lifecycle approach to building performance and can empower state and local governments to deliver on their long-term energy and carbon goals for the building sector. Examples of cities that have adopted building performance standards for existing buildings include Chula Vista, Boston, Denver, New York City, Reno, Seattle, St. Louis, and Washington, DC.

Stretch Codes are locally mandated codes or alternative compliance paths that are more aggressive than the current state or local energy code, resulting in new construction and renovated buildings that achieve higher energy savings. The baseline state or local code can be the national model code based on the International Energy Conservation Code (IECC – for residential buildings) or ASHRAE 90.1 (for commercial buildings), a version of these codes with amendments, or a state-developed code (e.g., CA Title 24). For local jurisdictions, it will be important to review whether your state allows the adoption and implementation of stretch codes. Some states with statewide energy codes require local jurisdictions to adopt and enforce the state code and do not allow the jurisdiction to adopt or enforce a more aggressive stretch code. Other states either do not have a statewide code or else allow local jurisdictions to adopt a stretch code that is more efficient than the state code. Examples of stretch codes include the Massachusetts Stretch Building Energy Code, New York's NYStretch Energy Code, and IECC Zero Energy Appendices CC and RC.

Justice and Equity

Building Performance Standards and Stretch Code policies impact energy use, carbon emissions, health, and jobs - issues that are central to creating more equitable cities and improving the energy efficiencey of builings in disadvantaged communitites. These policies also afford opportunities to collect and share data in a way that advances equity goals in tandem with energy and climate goals.

Why

In the US, commercial and residential buildings account for nearly 40% of energy consumed and over 30% of GHG emissions. Improved performance in new and existing buildings can help jurisdictions achieve decarbonization goals and deliver many additional benefits, including energy cost savings, increased building asset values, local job creation, improvements to indoor air quality, tenant comfort and productivity, and improved air quality from reduced power plant emissions.

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Key Activities

These selected Key Activities are high-level suggestions of important considerations a government should undertake as they embark on their stretch code and/or building performance standard journey. EECBG Program awardees that utilize a blueprint will receive expedited application review from DOE. Applicants must execute at least one of the key activities listed under each selected blueprint but should avoid going beyond the recommended activities. Going beyond these key activities may trigger additional reviews of your EECBG Program project to ensure you're meeting National Environmental Policy Act (NEPA), historic preservation, and/or other federal regulations. While each step is important, they should be seen as a guide. Awardees should determine their own priority activities based on their local context.

1. **Stakeholder Engagement**
2. **Data Collection & Benchmarking**
3. **Metric Selection and Target Setting**
4. **Determine Compliance and Enforcement Approach**

Stakeholder Engagement

A variety of stakeholders will need to be engaged in the development of building performance standards and stretch codes. These may include community-based organizations, private sector entities, utilities, owners, occupants, residents, and others. Jurisdictions that have successfully implemented these types of policies have worked to align policy objectives with community priorities. This involves gathering input from individuals directly affected by the policy, as well as understanding the needs of underserved groups. Stakeholder and community engagement is critical to ensure that building performance standards and/or stretch codes support equitable outcomes across a jurisdiction and align with Justice40 priorities. As outlined in EPA's resource, **Building Performance Standards: Overview for State and Local Decision Makers**, there are three main stakeholder engagement strategies to consider:

Key Resource

Building Performance Standards: Overview for State and Local Decision Makers (EPA)

- **Identifying interested stakeholders** – Define a comprehensive list of internal and external stakeholders who should be involved in the process.
- **Create a structure of engagement** – Set up a flexible platform for participating stakeholders to meet and share information.
- **Allow for ongoing engagement** – Maintain a network among stakeholders to offer support and resources that increase compliance and assist building owners and their representatives.

As an example, the following stakeholders were assembled as part of Rhode Island's stretch code development team: representatives from the state Office of Energy Resources, Rhode Island's Energy Efficiency and Resource Management Council (EERMC), Rhode Island Energy, the Green Building Advisory Committee (GBAC), the Rhode Island Code Commission, Northeast Energy Efficiency Partnerships (NEEP), and other subject matter experts.

Data Collection & Benchmarking

Considerations around data collection will be critical in two main areas: (1) initial policy development (e.g., understanding the current performance of a jurisdiction's building stock in order to set aggressive and achievable targets that support other energy and climate action policies); and (2) policy implementation (e.g., ensuring that affected building owners have access to the data required to demonstrate performance/compliance).

For governments that have already implemented energy benchmarking and disclosure ordinances for existing commercial and multifamily properties – a significant first step in achieving energy and GHG reductions from the built environment – it is expected that data will be available to support target setting for a building performance standard. Entities that do not have an energy benchmarking and disclosure ordinance in place may opt to design a policy that includes both a benchmarking ordinance and building performance standard, to be deployed sequentially (see, e.g., Colorado's **Energy Performance for Buildings** law and Washington State's **Clean Buildings Performance Standard**). Additionally, market segmentation studies can help governments gain a better understanding of baseline conditions by detailing the types of buildings by size, locations, demographics, ownership (owner vs. renter), use types, and energy usage. Although this step in the process is not essential for stretch code development, the information gathered through benchmarking and/or market segmentation studies can be beneficial when establishing targets and aligning BPS and stretch code policies.

Where statewide (as opposed to locality-specific) implementation of a building performance standard is being considered, it will be also important to address requirements for the provision of aggregate whole-building consumption data by utilities. This is particularly important for owners of large multi-tenant and multifamily properties, where the effort required to obtain individual tenant-level data release authorizations may be prohibitive. Even if building performance standards will be implemented at the local level, state-level policymakers should still consider the role of whole-building aggregate data access policies (since utilities are regulated at the state level, and absent this policy, each local jurisdiction would be responsible for obtaining data access support from its relevant utilities).

Key Resource

Building Performance Standards — A Framework For Equitable Policies To Address Existing Buildings (USDN)

Key Resource

Building Energy Benchmarking and Transparency: Overview for State and Local Decision Makers

Key Resource

Data Access: A Fundamental Element for Benchmarking and Building Performance Standards (EPA)

Metric Selection and Target Setting

Jurisdictions must choose the metric or combination of metrics that best aligns with their key strategies to achieve energy and decarbonization goals. Metrics generally fall into two broad categories—energy metrics and GHG metrics—but many possible variations exist within those categories. For example, metrics could be based on intensity values (e.g., energy per square foot or GHG emissions per square foot) or absolute values (e.g., total energy use or total GHG emissions). Other variations for energy metrics include site or source energy metrics.

When setting targets for a building performance standard or stretch code, state and local governments will need to consider alignment with existing building codes and energy and greenhouse gas emission goals. Targets should be attainable if they are to achieve measurable impact, so understanding the current/baseline energy and carbon intensity of a jurisdiction's building portfolio is a critical first step to target setting. As noted above, a pre-existing requirement for building owners to benchmark using the ENERGY STAR Portfolio Manager tool can serve as an important source of data on the energy use intensity of buildings by property type.

When setting targets for building performance standards and stretch codes, it will be important to establish interim targets (e.g., every 4 – 6 years), that will enable a stepped approach to achieving long-term goals. This approach helps jurisdictions meet their energy and climate goals while providing implementation support and time for the market to respond.

Key Resource

Recommended Metrics and Normalization Methods for Use in State and Local Building Performance Standards (EPA)

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Understanding and Choosing Metrics for Building Performance Standards (EPA)

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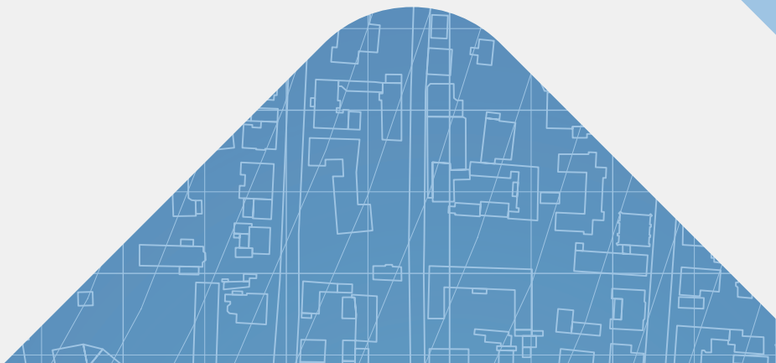
Building Performance Standards: A Technical Resource Guide (ASHRAE)

Key Resource

Building Energy Codes Program Stretch Codes Module (DOE)



Determine Compliance and Enforcement Approach

Managing a building performance standard requires that jurisdictions track and report on properties that are required to comply each year. Jurisdictions need to track building performance requirements each cycle, including how (and possibly to what extent) each building did or did not comply with the standard. Additionally, it should be anticipated that not every building will be able to meet the building performance standard, due to either financial or technical constraints. Most energy reporting will be handled through ENERGY STAR Portfolio Manager, a free online software supported by EPA. The collection and tracking of building performance data from ENERGY STAR Portfolio Manager may require specialized software and infrastructure that may not currently exist.

For building performance standards, the consequences of non-compliance should be significant enough to incentivize owners to seek compliance through performance upgrades rather than paying not to comply. Where alternative compliance paths are provided for buildings that have not met their interim targets, it will be critical to ensure that these pathways are driving meaningful improvements that will lead to energy and GHG emissions reductions.

Implementing a state or local stretch code will typically be the same process as enforcing a base energy code. Enforcement is often performed by a local building department and will require a plan review and on-site inspections.

Key Resource

Putting Policy in Action: Building Performance Standard Implementation Guide (IMT)

Learn More

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