slipstream

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Building Performance Standards Utility Attribution Framework

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1. INTRODUCTION

A growing number of states and local jurisdictions are adopting building performance standards (BPS) to address energy savings in existing buildings. To measure and claim savings tied to BPS policies, utilities need to develop attribution frameworks outlining actions they can take to support BPS policy adoption and compliance in their region. Similar to efforts by some utilities to claim energy savings from the support for adoption and compliance of building energy codes in new construction, an attribution framework can provide a pathway for utilities to claim savings for existing building policies.

ClearlyEnergy and Slipstream are developing a BPS attribution framework with funding provided by the Department of Energy (DOE) Resilient and Efficient Codes Implementation (RECI) grant. This document introduces the framework for quantifying BPS savings and the role of utilities in supporting BPS policies. The framework is intended to apply to energy utilities across all regions and various ownership structures (e.g., investor-owned utilities, municipal utilities, and sustainable energy utilities), although utilities will need to adjust the framework strategies to meet their specific needs and circumstances.

Attribution for BPS refers to the share of energy savings from buildings that comply with state or local BPS policies that can be directly credited to a utility's efforts to advance or support these regulations. Utilities are often required by state or local law to demonstrate energy savings from various initiatives, claiming savings from their energy efficiency programs, such as energy codes and appliance standards. While attribution for energy codes and standards programs is an innovative practice that many states and utilities have not yet adopted, this framework builds on the work of other organizations, including the American Council for an Energy-Efficient Economy (ACEEE), Institute for Market Transformation (IMT), Pacific Northwest National Laboratory (PNNL), and ComEd. It expands on this foundation for how utilities may claim savings for BPS. Establishing an attribution framework for BPS provides utilities with a unique opportunity to achieve energy savings over an extended period, driving market transformation by fostering structural changes that reduce greenhouse gas emissions and create long-term opportunities for workforce development.

In addition to the BPS attribution framework, ClearlyEnergy and Slipstream convened a Utility Working Group (UWG) to gather utility input on attribution models and long-term support for building performance standards. See the UWG section below for more information.

2. BACKGROUND ON BUILDING PERFORMANCE STANDARDS (BPS)

BPS policies are evolving as an essential tool to reduce emissions and achieve climate targets. Enacted by states or municipalities, these laws set performance levels for improving existing commercial and multifamily buildings over a designated timeframe. BPS policies set interim and long-term performance targets to reduce a building's energy use, water use, and/or greenhouse gas emissions, and typically apply to public and private buildings above a specified size threshold. A BPS policy may address a single purpose or multiple objectives, such as energy efficiency, greenhouse gas reduction, electrification, renewables, water efficiency, indoor air quality, and resilience. Typically, jurisdictions have mechanisms in place to impose penalties for noncompliance. Many BPS policies also include flexible compliance pathways to accommodate affordable housing and other buildings needing assistance.[1]

[1] "What Defines a Building Performance Standard (BPS)?," Institute for Market Transformation, June 2, 2025, https://imt.org/wp-content/uploads/2025/04/BPS-One-Pager_4.01.2025.pdf.

First BPS in Illinois

Evanston, Illinois, is the latest city to adopt an ordinance creating a BPS as of March 10, 2025.[2] Evanston joins St. Louis as the second BPS in the Midwest. Beginning in 2031, this policy will cover around 500 buildings in Evanston and require commercial buildings over 20,000 sq. ft. and residential buildings over 50,000 sq. ft. to meet the new performance standards.

CURRENT BPS POLICIES

The map in Figure 1 illustrates the status of BPS adoption at the state and local levels nationwide as of April 2025. New York City and the District of Columbia (DC) were among the first jurisdictions to implement BPS. In total, fifteen jurisdictions and states have BPS policies that require buildings to meet an energy or carbon emissions target by a specific deadline.

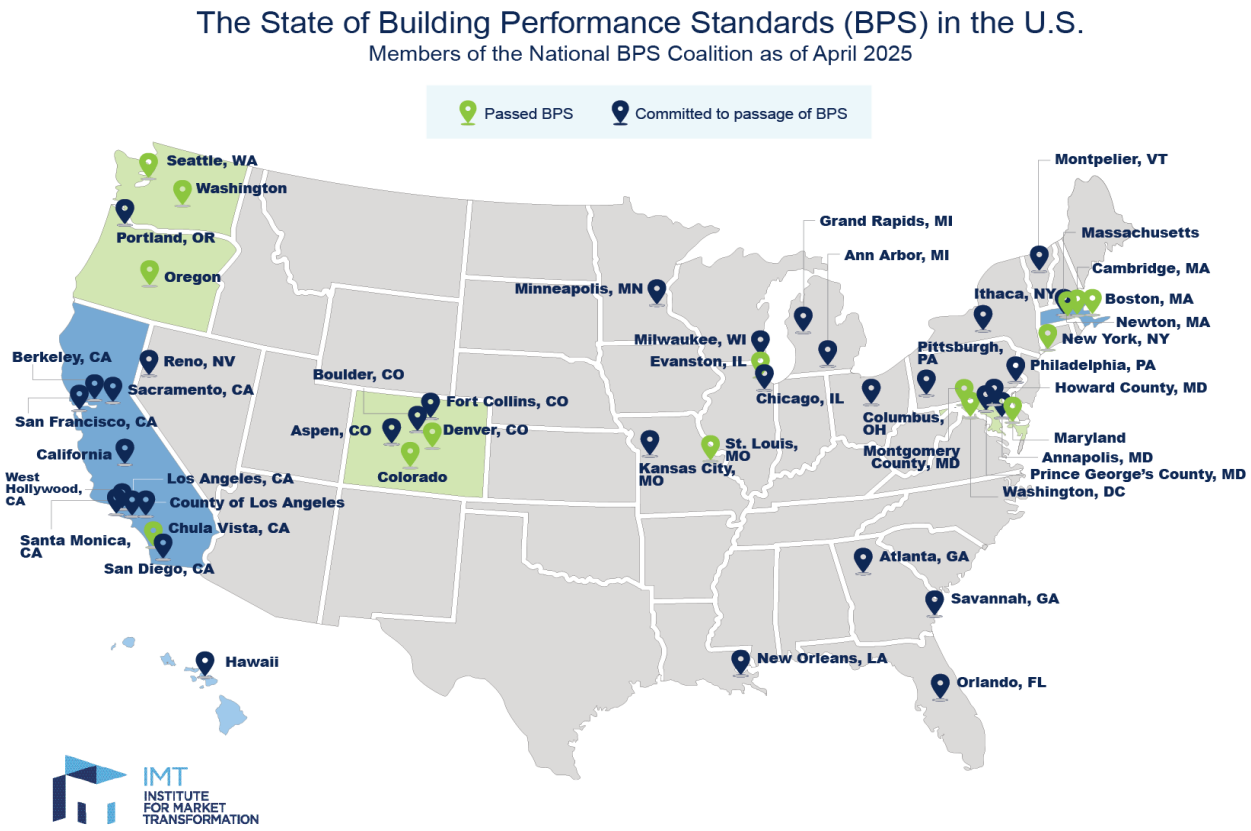

Figure 1. Map of BPS policies that have been passed or are committed to passage across the United States. (Source: https://imt.org/wp-content/uploads/2024/07/IMT-BPS-Status-Map.png)

[2] Ryan Wilmington, "Evanston Passes First Building Performance Standard in Illinois," *Illinois Green Alliance*, March 11, 2025, https://www.illinoisgreenalliance.org/evanston-passes-landmark-healthy-buildings-ordinance.

Local Government BPS policies: Seattle, WA; Chula Vista, CA; Denver, CO; St. Louis, MO; Evanston, IL; Washington, DC; Montgomery County, MD; New York City, NY; Cambridge, MA; Boston, MA; Newton, MA.

Statewide BPS policies: Washington, Oregon, Colorado, Maryland.

State and Municipal Policies in Action

Navigating both Statewide and Local Policies in California

The State of California has a unique policy landscape that includes various advanced building energy efficiency policies enacted at the state and local levels, from reach codes and appliance standards to benchmarking and BPS.[3] The State requires large commercial and multifamily building owners to benchmark and report their energy usage to the California Energy Commission annually.[4] As of May 2025, seven California jurisdictions are exempt from needing to comply with this state law due to the passage of robust benchmarking ordinances at the local level. Utilities with larger service territories may cover some jurisdictions with buildings subject to state benchmarking law and others that must comply with local laws with different reporting metrics. As California considers implementing statewide BPS requirements that use greenhouse gas as a performance target, as required by the California Building Energy Savings Act (SB 48), a utility's role may become increasingly complicated due to shifting alignment between state policy goals, local policy goals, and utility attribution and energy program goals. For instance, California utilities cannot receive energy savings from meeting greenhouse gas reduction targets; this policy limits alignment between state and utility priorities.

BPS Technical Assistance for Boston and Cambridge, Massachusetts

Boston offers technical and financial support through various initiatives, including the Building Decarbonization Advisor Program and the Equitable Emissions Investment Fund. The latter supports achieving carbon net neutrality among Boston's largest buildings through the Retrofit Resource Hub, which offers options for building retrofitting and provides technical and financial resources. Cambridge has a one-stop shop for buildings over 25,000 square feet or 50 units. The Cambridge Building Energy Retrofit Program provides energy efficiency technical support, including:

- Comprehensive planning services
- Expert guidance, including a dedicated Eversource Energy Efficiency team, vendor referrals, and specialized building technologies
- Energy Efficiency offerings and incentives tailored to building type and size
- Building Operator Certification training classes for facilities staff

Additionally, several local governments and states have committed to implementing a BPS policy in their jurisdictions. The map in Figure 1 indicates jurisdictions that have already implemented BPS policies in green and those committed to doing so in blue. The progress varies on policy adoption across those

[3] Emily Garfunkel and Michael Waite, *Utility Energy Code Programs and Their Potential Extension to Building Performance Standards* (ACEEE, 2024), https://www.aceee.org/sites/default/files/pdfs/utility_energy_code_programs_and_their_potential_extension_to_building_performance_standards_2_1.pdf.

[4] "Building Energy Benchmarking Program," California Energy Commission, California Energy Commission, accessed June 2, 2025, https://www.energy.ca.gov/programs-and-topics/programs/building-energy-benchmarking-program.

committed localities. Examples of policies that are nearing adoption include Reno, NV, which currently has a benchmarking requirement in place but expects to add additional performance reporting requirements in 2026,[5] and the State of Hawai'i, which plans to advance legislation or regulation for a BPS policy by April 2026.[6]

BENCHMARKING AS A PRECURSOR TO BPS

Energy benchmarking policies require building owners, often of medium—to large-sized commercial and multifamily buildings, to track their buildings' energy use over time and report this data to the jurisdiction on an annual basis.[7] This data-driven approach helps building owners, operators, and policymakers understand how a building performs relative to similar buildings and identify opportunities to reduce energy use and lower operating costs.

Jurisdictions typically adopt a benchmarking policy prior to moving forward with a BPS. Benchmarking builds the administrative capacity, data foundation (e.g., establishing performance baselines for covered buildings), and stakeholder awareness needed for successful BPS implementation. Consistently tracking energy use can also prompt building owners to take actions to improve their buildings' efficiency, leaving them better prepared to meet future performance targets.

For utilities, there is significant crossover between the types of activities needed to support both the adoption and compliance aspects of benchmarking and BPS policies (the latter of which will be described in further detail in the "Utility Companies and BPS Benefits, Opportunities, and Challenges" section below). Example utility activities that are common between these two policies include:

- Contributing to research studies and providing expertise during the policymaking process
- Providing jurisdictions with implementation assistance
- Developing communications and educational resources for stakeholders
- Providing data access services to help building owners easily report whole-building energy usage data.

When considering attribution, some utilities have explored the possibility of claiming energy savings for benchmarking-related activities, recognizing the value of data access and transparency as precursors to deeper energy savings. However, to date, no utility has implemented attribution mechanisms

Benchmarking Support to Evanston, IL, through ComEd

To alleviate staff capacity challenges, ComEd is funding staff time from Slipstream and MEEA to assist the City of Evanston with various tasks necessary to implement its benchmarking ordinance. Activities include responding to inquiries from building owners and developing resources to educate stakeholders on policy and compliance requirements. Evanston is utilizing the Building Energy Analysis Manager (BEAM) tool to track compliance and streamline policy implementation for its current benchmarking ordinance and lay the groundwork for future Building Performance Standards (BPS) enforcement.

[5] "Energy and Water Efficiency," City of Reno, accessed June 2, 2025, https://www.reno.gov/community/sustainability/energy-and-water-efficiency.

[6] Alexandra Laney, "Hawai'i Joins National Building Performance Standards Coalition to Improve Buildings, Lower Energy Costs," *Institute for Market Transformation*, April 7, 2025, https://imt.org/news/hawaii-joins-national-bps-coalition/.

[7] "Energy Benchmarking and Transparency Benefits," Institute for Market Transformation, n.d., accessed June 2, 2025, https://imt.org/wp-content/uploads/2018/02/IMTBenefitsofBenchmarking_Online_June2015.pdf.

specifically for benchmarking support. It is important to note that approaches to calculating energy savings differ between utility support for benchmarking and BPS policies. To learn more about how energy savings from benchmarking could be assessed, see section 4.4.1 of the "Evaluation of U.S. Building Energy Benchmarking and Transparency Programs: Attributes, Impacts, and Best Practices" report by Lawrence Berkeley National Laboratory in 2017.

UTILITY COMPANIES AND BPS BENEFITS, OPPORTUNITIES, AND CHALLENGES

Historically, utility programs have been categorized as resource acquisition or market transformation programs, with a clear distinction between the two. Resource acquisition programs, like traditional energy efficiency rebates (lighting retrofits or heat pump incentives), focus on short-term savings through specific actions by individual customers. Market transformation programs aim to create lasting changes by influencing the broader landscape of energy-efficient products and practices. Supporting BPS is the evolution of utilities offering resource acquisition, market advancement, efficiency initiatives, support of codes and standards, stretch codes, and benchmarking programs. BPS policies and programs have the potential for much deeper savings. Utility companies can benefit from BPS by generating significant energy savings, reduced emissions, improved grid reliability, potential for positive customer interactions, and compliance with regulatory mandates. The potential for BPS initiatives to address utility grid management, such as demand response, time of use, islanding, and distributed energy resource provisions, is a compelling reason for utility support of BPS. Utilities may also be well-suited to provide municipalities with support for BPS initiatives, as they already have mechanisms in place to provide incentives and training to building owners and can leverage partnerships with external organizations to supplement BPS adoption and compliance efforts.

The BPS saving potential for utilities are not without its challenges, and each utility will have its own unique set of barriers. Utility challenges to supporting and claiming savings from BPS may include:

- **Limited BPS alignment with state utility mandates:** Utility budget and program plans often include annual goals established by state legislatures and Public Utility/Service Commissions (PUCs/PSCs). Utilities have stated that these plans do not directly require them to support or offer BPS incentives, sometimes disincentivizing utilities from including BPS within their budget and program plans. Some utilities may also lack existing attribution frameworks from programs like energy codes and standards, making the addition of a BPS attribution program a more significant lift without foundational precedents in place.
- **Misalignment between utility planning and BPS timelines:** Utility energy efficiency plans typically operate in three-year cycles with annual savings targets, while BPS often have multi-year compliance checkpoints. This misalignment can create uncertainty about when savings will materialize, making it difficult for utilities to attribute savings to their programs. Additionally, compliance-driven activity may spike before interim targets and drop afterward, further complicating savings expectations.
- **Other utility program priorities:** Distributed Energy Resources (DERs), Demand Management, and Time-of-Use initiatives are growing focuses for utilities and may serve as competing priorities to BPS. However, some BPS policies recognize common DERs, such as onsite renewable energy generation, as eligible pathways towards meeting building performance requirements, offering potential areas for alignment.

- **Limits on Claiming Fuel Switching Savings:** BPS compliance often involves electrification and fuel switching measures. However, many utilities do not or cannot claim savings from fuel switching activities, or lack fuel-neutral performance benchmarks, limiting the energy savings that can be claimed.
- **Scaling efficiency programs:** Expanding utility efficiency programs beyond energy codes and incentives for single technologies, such as heat pumps or lighting, to more complex whole-building initiatives.
- **Staffing constraints:** Limited bandwidth or insufficient staff to manage and support BPS initiatives.
- **Cross-departmental complexity:** Challenges coordinating funding, incentives, and activities across departments for new construction, existing buildings, and renewable energy programs.
- **Data Dissemination:** Different municipal BPS programs often require varying data points or reporting formats. These inconsistencies can make it challenging for utilities to supply the information BPS administrators need.

This report focuses on the benefits and challenges of claiming BPS savings for utilities. However, it is essential to note that states and municipalities, which are the primary drivers of the BPS policies, also experience their own set of benefits and challenges. Many advantages to these jurisdictions are similar to those of utilities, such as energy savings and emissions reductions; however, these goals are usually driven by constituents and local policy. Municipalities and utilities are inherently linked in sharing benefits and collaborating to effectively solve common challenges. For municipalities, the challenges to BPS adoption and successful implementation may include:

- Staffing bandwidth (staff time in general, lack of staff, lack of technical expertise)
- Funding limitations or lack of funding
- Access to utility data
- Property owner, builder, and contractor participation and pushback
- Competing policy prioritization

BPS Building Owner Benefits

BPS policies offer building owners various benefits, including reduced maintenance and operating costs, long-term energy and water savings, increased property value, and enhanced tenant satisfaction. They also support state and local governments in achieving their environmental and climate-related objectives. In effort to comply with BPS, building owners may also receive additional benefits such as technical assistance and financial or regulatory incentives to improve building efficiency.

Utilities are well-positioned to support building owners and municipalities before and after BPS policies take effect by expanding current programs and initiatives, offering incentives, and providing technical assistance. A utility could support BPS by supplying:

- **Technical Assistance:** Utilities provide energy modeling, energy audits, and expertise in achieving efficiency upgrades (e.g., envelope and HVAC building science, product specifications, grid interconnection, and optimizing fuel switching).

- **Policy Support:** Utilities can use their legislative and policy experience to support BPS legislation and promote regulation at the state and local levels. Utilities have data demonstrating how past energy-related legislation benefits consumers and business interests. See the TECH Clean California call-out box for an example of how data can inform policy.
- **Program Design:** Utilities can incorporate benchmarking and BPS compliance into existing program models by leveraging their experience designing efficiency and incentive programs.
- **Staffing Support:** Utilities can fund circuit rider or shared energy analyst positions to support staffing functions needed to administer BPS programs. These professionals assist government staff and building owners by providing technical guidance and answering questions. Similar to energy code circuit riders, utilities may be able to claim energy savings by funding these positions.
- **Education/Outreach/Workforce Development:** To support BPS, utilities can provide technical assistance, education, and outreach activities such as training, workshops, webinars, and printed and audiovisual media. Utilities can also establish relationships with local community colleges, technical schools, and trade associations to enhance certification and continuing education opportunities, essential for supporting the local energy workforce.
- **Data Access:** Incorporating services that connect to energy tracking platforms (e.g., ENERGY STAR Portfolio Manager) to provide building energy usage data to owners and jurisdictions, enabling performance measurement and tracking aligned with BPS goals.
- **Financial Incentives:** Offering rebates, grants, financing, and loan products for efficiency upgrades related to BPS compliance.

Policy Informed by Data: TECH Clean California

TECH Clean California is a utility-sponsored initiative with the goal of "informing California's decarbonization decision-making with public data, analyses, and case studies." Project staff quantify program data and highlight where and which policies need to be implemented to forward the state's energy efficiency and decarbonization goals.

Depending on the regulatory environment governing utility actions, some utilities may be precluded from engaging in activities considered to be policy advocacy or support. In the case of energy codes, state public utility commissions generally determine whether utilities can claim savings from adoption activities, compliance activities, or both. For instance, several states, including Arizona, Colorado, Connecticut, the District of Columbia, Minnesota, New Hampshire, and Vermont, limit utilities to claiming savings from only compliance-focused energy codes and standards programs.[8] Similar regulatory restrictions may apply to utility-led BPS programs. Each utility should determine which activities they are permitted to support, but the remainder of this framework document assumes a utility role for both policy advancement and implementation.

[8] Emily Garfunkel and Michael Waite, *Utility Energy Code Programs and Their Potential Extension to Building Performance Standards* (ACEEE, 2024), https://www.aceee.org/sites/default/files/pdfs/utility_energy_code_programs_and_their_potential_extension_to_building_performance_standards_2_1.pdf.

UTILITIES ON THE PATH TO SUPPORTING BPS

Slipstream has explored the forthcoming opportunity to claim savings from the formation of a BPS attribution framework through a series of individual meetings and interview sessions with utilities, including San Diego Gas and Electric (SDGE), ComEd, Eversource, and the District of Columbia Sustainable Energy Utility (DCSEU). Below, we provide examples of recent efforts by utilities to support benchmarking and BPS efforts.

The City of Chula Vista adopted a building performance standards policy in 2021. Seven other cities (Berkeley, Los Angeles, Sacramento, San Diego, San Francisco, Santa Monica, and West Hollywood) are working to adopt building performance policies. Seven cities have benchmarking programs exceeding state requirements (Berkeley, Brisbane, Chula Vista, Los Angeles, San Diego, San Francisco, and San Jose). All three of California's investor-owned utilities (Pacific Gas & Electric Company (PG&E), Southern California Edison (SCE), **San Diego Gas & Electric (SDGE)**, and Southern California Gas) support codes and standards advocacy, education, compliance, and technical support initiatives and may claim savings from efforts related to codes and standards. SDGE currently provides building data to Chula Vista toward compliance with the city's BPS policies. SDGE claims savings from codes and standards.

ComEd has supported independent contractors, including Slipstream and MEEA, to provide direct assistance to municipalities considering advanced building policies, such as BPS. This technical support includes policy development guidance, research into costs and impacts, and availability to respond to external questions during town halls or individual conversations with stakeholders. ComEd is currently exploring opportunities to develop plans for BPS attribution and claim savings for these activities in the future. ComEd has already established the market transformation framework for stretch energy codes initiative, which include the completion of an energy savings framework, a logic model and project plan, and an evaluation plan for stretch code attribution. These MT supporting documents have been presented to and confirmed by the Illinois Energy Efficiency Stakeholder Advisory Group, a convening body of stakeholders that advises on utility energy efficiency programs and policies and supports transparency and education on energy efficiency issues in Illinois.[9] ComEd is planning on presenting similar MT supporting documents for BPS policies.

Eversource offers discounts, incentives, rebates for energy efficiency products and services, energy assessments, and initiatives such as a zero program for new construction through Mass Save. Eversource supports energy code compliance and the development of energy codes. The utility has employed attribution methods to determine the portion of a state's improvement in compliance rate that can be attributed directly to their efforts. Eversource supports Massachusetts base, stretch, and zero codes and may claim savings related to the three codes. Boston and Cambridge currently have BPS policies within Eversource's service territory. Eversource has no state or PUC-mandated formal support initiative for the BPS cities, but it is engaged in providing data and linking current utility incentive programs with building owners.

The District of Columbia Sustainable Energy Utility (DCSEU) is operated by VEIC and manages the energy efficiency, Solar for All, and other decarbonization programs in DC. In addition to helping DC residents and businesses reduce energy use through financial incentives, technical assistance, and information, DCSEU has developed specific offerings to support building owners as they work to comply with DC's Building Energy Performance Standards DC (BEPS) policy. This compliance includes funding to offset the cost of ASHRAE Level II audits, and sector-specific offerings such as roundtables to share best

[9] "SAG Background," Illinois Energy Efficiency Stakeholder Advisory Group, June 9, 2025, https://www.ilsag.info/background/.

practices, exchange BEPS information, and engage in peer-to-peer discussions. The DCSEU has also developed toolkits to help guide decision making throughout a building owner's BEPS compliance journey. Additionally, the DCSEU administers the District's legislatively mandated Affordable Housing Retrofit Accelerator (AHRA) which provides comprehensive BEPS support for income-qualified multifamily and other select buildings.

The DCSEU has provided Code Adoption and Compliance Support since 2013 to help code officials, third-party reviewers, architects, and engineers increase energy code compliance for new commercial and multifamily buildings. This includes developing guidelines on specific code issues; clarifying requirements for projects, including through the development of compliance verification and documentation worksheets; and creating resources specific to DC's new building envelope commissioning requirements.

While the DCSEU's latest claim for code compliance-related energy savings was in 2019 for the years 2017-2018 (previous code cycle), it plans to again claim code compliance energy savings for the current code cycle before the end of its 5-year contract (FY 2022 – FY 2026). DCSEU's code-related attribution generally follows the standard formal attribution approach but uses a gross savings method rather than a net savings estimation method. The 2019 savings claims attributed to the DCSEU Code Compliance Support Initiative were evaluated and verified by an evaluation team, which determined a 100% realization rate for the energy savings from the Code Compliance Support Initiative, meaning the DCSEU was able to claim 100% of the documented savings from its code compliance-related efforts. The DCSEU is well positioned to claim savings from a stretch code and ideally would like to claim savings from BEPS support activities like technical assistance and education in the future, but has not yet identified a way to do so within its contract structure.

UTILITY WORKING GROUP OVERVIEW AND GOALS

To inform the goals and strategies outlined in the Evaluation Framework for Utility BPS Attribution below, ClearlyEnergy and Slipstream established a Utility Working Group convening key stakeholders (e.g., utility program administrators, evaluators, nonprofits, State Energy Office program administrators, DOE National Laboratory experts) to provide input and feedback throughout the framework development process.

The working group held six meetings spanning from June 2024 to June 2025. The three meetings in 2024 primarily focused on sharing foundational information about utility attribution models and gathering stakeholder input regarding potential areas of alignment with BPS program support. Discussions also covered anticipated challenges and opportunities in implementing a BPS attribution program. During 2025 meetings, working group sessions provided a platform for the project team to present iterative drafts of the attribution framework to participants and facilitate discussions to gather feedback and clarify questions.

Beyond developing the BPS attribution framework, another key purpose of the working group was to identify utilities considering implementing attribution models to support local BPS policies in the future. Interested utilities can receive technical assistance from the project team to establish a pilot program, including creating a tailored BPS logic model, assessing regulatory barriers to claiming savings, and helping to develop and implement a BPS attribution roadmap. In addition to Utility Working Group meetings, the project team conducted several interviews with working group participants, particularly members representing utilities. Overall, seven utilities were interviewed, representing a range of sizes and regions across the country. Interviews aimed to learn about what energy efficiency initiatives utilities support, where and how they claim savings for programs such as building energy codes, appliance standards, and explore their involvement with supporting local BPS policies. Furthermore,

upon sharing draft versions of the attribution framework, conversations aimed to assess whether the framework addressed key barriers and appeared feasible to implement from the utility perspective.

3. EVALUATION FRAMEWORK FOR UTILITY ATTRIBUTION

The evaluation framework leans on the structure created and applied in other utility service territories related to energy codes. Several codes and standards (C&S) programs have allowed utilities to support aspects of the energy code and claim savings. While the framework below presents an option for assessing and evaluating utility impact on policy adoption and implementation, each utility must review whether this framework falls within their regulatory environment and purview. For example, some utilities may require public utility commission approval, while others need other levels of oversight. However, the framework presented below provides elements of common methods of utility attribution and savings calculations.

Utility Attribution for Energy Codes

Utility Energy Code Attribution involves calculating the net energy savings from energy code initiatives administered by utilities or related program administrators and determining the portion of those savings that can be attributed to the specific activities of a utility or program administrator. Attribution activities include the utility's involvement in code development, compliance, or other activities contributing to code adoption (training) and enforcement.

Utility energy code attribution determines how much energy savings from the building energy code-related initiatives are attributed to utilities' efforts. Code attribution quantifies the contribution of these efforts to the overall energy efficiency gains achieved through code compliance and adoption.

Future Attribution: Inflation Reduction Act (IRA)

IRA Home Energy Rebates aim to incentivize energy efficiency, electrification, and the decarbonization of homes. IRA attribution refers to how energy savings generated from programs utilizing the Inflation Reduction Act (IRA) Home Energy Rebates are distributed between existing state energy efficiency programs and the new IRA rebates. By attributing IRA savings, states can ensure that program resources are used effectively. States need to consider how existing programs and the roles of utilities, third-party program administrators, and other stakeholders will coordinate with IRA Home Energy Rebates in attributing IRA savings.

MARKET TRANSFORMATION OR RESOURCE ACQUISITION PROGRAM?

As described above, utility support for BPS can be wide-ranging and can include various market actors, such as municipal staff, building owners, and contractors/trades. Due to the broad spectrum of market actors, BPS programs can be considered market transformation (MT) initiatives. Market transformation efforts address barriers across many market actors, have a long-term horizon, and may encompass multiple levels of engagement. This contrasts with resource acquisition (RA) programs that typically have shorter time horizons for program implementation and evaluation, includes a more limited scope, and has limited effect on multiple markets. While RA programs may also affect market changes over a longer time horizon, most planning and evaluation consider their impact on an annual basis. Since BPS programs affect multiple market actors, include structural changes that may occur over a longer period, and may yield savings that are difficult to quantify on an annual basis, we consider BPS to be suitable for

a market transformation initiative. However, each utility will ultimately need to decide whether the MT or RA framework best fits them.

The majority of the framework below provides evaluation context from an MT perspective, but we do provide additional considerations for utilities taking an RA approach.

UTILITY BPS PROGRAM LOGIC MODEL

The evaluation framework relies on the program logic model as a first step to identify how the program structure leads to anticipated energy savings or market effects and to clarify the relationship between program components and their intended effects. The Slipstream project team has developed a logic model (Figure 2) that provides the starting point for a defensible flow of how barriers and constraints are overcome by utility activities that create outputs informing short-, medium-, and long-term expected outcomes. The barriers listed in the framework logic model have been identified through secondary research and direct communication with municipalities and related stakeholders, making it difficult to move forward with BPS adoption and the successful implementation of BPS policies. The target markets are described in Table 1.

Logic Model Definition

A logic model is a visual representation that illustrates the relationship between a program's resources, activities and intended effects, showing how particular actions lead to achieving goals. The BPS attribution logic model is composed of Barriers/Constraints, Utility Activities, Outputs, Short Term (1-2 years), Midterm (3-7 years) and Long Term 8-10 years) Outputs.

Table 1: Targeted market actors for utility BPS advancement and implementation programs

Targeted Market Actors	Description of Actors
Jurisdiction/Policy-Making Sector (TM1)	Jurisdiction-level policy development or adoption bodies, such as city/county councils, mayors, sustainability managers, public stakeholders and/or working groups, etc.
Building Owners and Managers (TM2)	Building owners, managers, and operators
Building Retrofit Contractors (TM3)	Mechanical/electrical contractors, HVAC retrofit specialists, energy auditors and consultants, renewable system installers, etc.

The evaluation of program impacts relies on several key market progress indicators. Market Progress Indicators (MPIs) are the metrics that will be tracked to assess the effectiveness of the activities identified in the program logic model. MPIs assess the progress of market transformation efforts on the key outcomes outlined in the logic model. These MPIs assess the impact of both advancement and compliance support programs. See the Tables 2 and 3 in the Appendix for a list of MPIs tied to the BPS attribution logic model. While the logic model and MPIs presented in this framework are designed to address common needs and barriers across a wide range of utilities, individual utilities may need to customize them to reflect their specific regional or regulatory contexts. For instance, utilities operating in jurisdictions with local and state benchmarking or BPS policies may need to adapt the framework to identify opportunities for aligning utility activities with multiple policy objectives. This can help reduce the burden of navigating a patchwork of requirements and instead support a more coordinated approach to meeting both local and state goals.

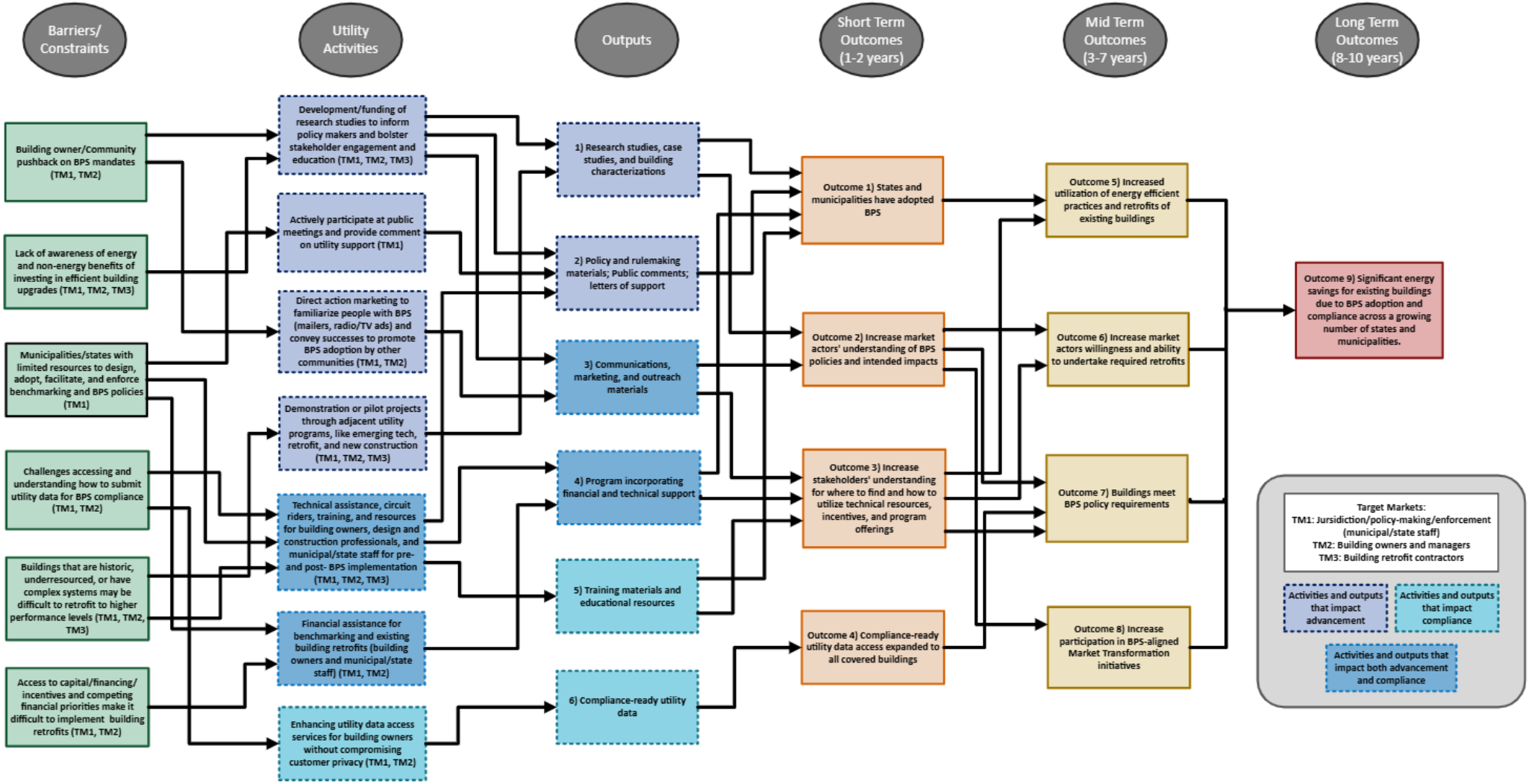

Figure 2. Logic Model for Utility Support of Building Performance Standards

METHODS FOR QUANTIFYING SAVINGS FROM UTILITY PROGRAMS FOR BPS

Below, we provide a graphical overview of the flow of information and outputs in calculating net energy savings from a BPS program (Figure 3). The method below reflects the project team's experience in energy code attribution development and also builds upon prior research from others (e.g., Garfunkel and Waite, 2024; Lee and Stacey, 2018[10]).

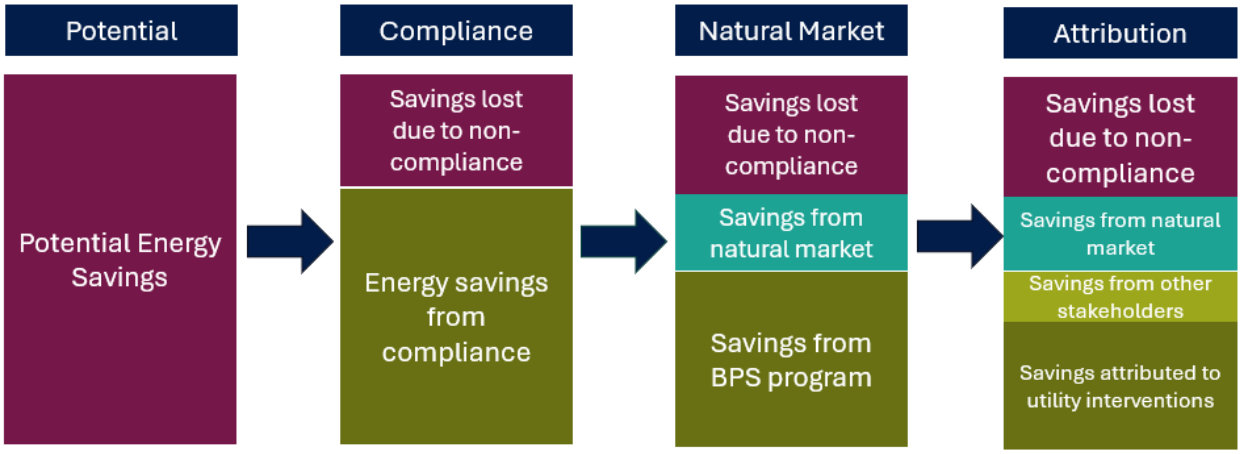

Figure 3. Overview of Evaluation Framework for BPS Programs

The evaluation begins with an estimate of overall potential savings. With BPS, the overall savings are directly related to the policy adopted by any given municipality. All BPS policies to date have relied on benchmarked building data from previous years to quantify the buildings covered by the BPS policy. Each of those buildings has energy use and/or emissions data and short and long-term performance targets; the difference between the energy or emissions data and a performance target will be the estimated potential savings that we expect to see from a BPS program a given performance period. While the performance period may vary, it is likely that performance periods are longer than the annual cycle of typical RA programs. Most BPS policies have a ramp-up period or a specified timeframe for a building to comply and reach performance targets, typically ranging from 3 to 5 years. The evaluation period should align with the interim targets and iterative performance periods of established by BPS policies.

Gross savings: Savings Lost Due to Non-compliance

The gross savings value for energy savings lost due to non-compliance with BPS policies would include any buildings required to meet energy efficiency performance targets but could not do so within the performance period timeframe for policy compliance. Several jurisdictions also include alternative pathways for compliance, which may not lead to immediate energy savings or result in savings expected to extend beyond the typical compliance period. In such cases, the unrealized savings are generally treated as a deduction from total potential energy savings for the current evaluation period. However, if those savings are expected to occur in a future period, they may instead be tracked and credited in that subsequent evaluation cycle.

[10] Allen Lee and Jerica Stacey, *Attributing Codes and Standards Savings to Program Administrator Activities: Review of Approaches in Canada and the United States* (Cadmus, 2018), Appendix CC, https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/regulatory-planning-documents/regulatory-filings/rra/bch-f20f21-rra.pdf.

To quantify the lost savings from non-compliance, we can estimate and calculate these compliance values from the data collected on the municipal level to determine compliance. While empirical data on compliance with Building Performance Standards (BPS) policies is still limited, given that most jurisdictions remain in the early years of performance periods, some initial research has been conducted. A recent ACEEE paper summarizes benchmarking-based compliance estimates for five jurisdictions: Washington, DC; New York City; St. Louis; Boston; and Denver.[11] Based on publicly available benchmarking data, between 30% and 80% of buildings across these cities already meet the first BPS compliance standard, and 24% to 25% of those with established 2030 targets meet those standards. These estimates reflect early progress and target-setting methodologies that vary by city, such as percentile-based targets and modeling. While these figures provide a helpful reference point, additional research may be needed to determine appropriate assumptions of BPS compliance for jurisdictions of interest.

Net Savings: Quantifying the Naturally Occurring Market Adoption

The Naturally Occurring Market Adoption (NOMAD) represents the state of the market that would occur in the absence of utility invention. This is sometimes called the Natural Market Baseline (NMB) in market transformation initiatives. Based on our logic model, we expect that if the utility company completes the listed activities, the outputs will result in the outcomes outlined in the logic model. The reverse is true for the Natural Market Baseline; if the utility never undertook those activities, we would expect fewer results and outcomes. However, in the case of any market transformation initiative, we also need to estimate external market forces, outside of utility companies, that may also influence the market actors. Figure 4 provides a representation of the elements of the NMB and total market changes over time.

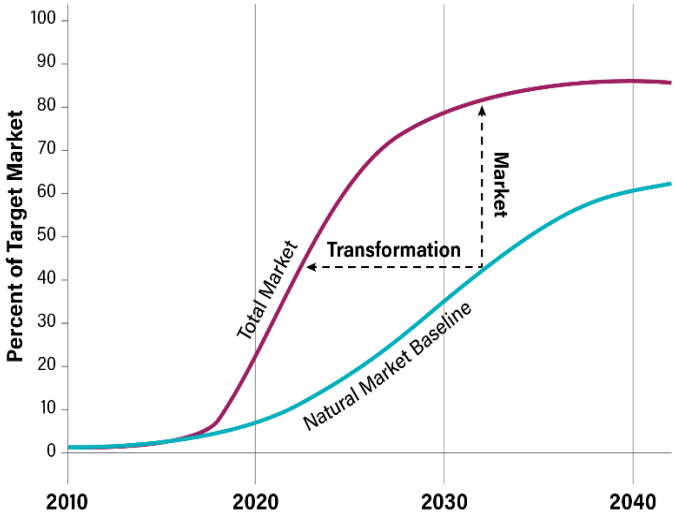

Figure 4. Representation of market transformation effects over time.

To estimate the NOMAD, we can use the historical energy consumption and apply an assumed energy savings over time that would be considerably smaller than the savings achieved through compliance with the BPS program. The utility or evaluation team could review prior participation levels in energy efficiency programs to use this value as an estimation for expected savings in the absence of a BPS program. The utilities may consider how federal funding or other external market factors play into overall changes in the market; if data are available for federal funding uptake for energy conservation measures, the evaluations should consider their impact on the natural market baseline in the absence of a BPS policy.

Net Program Savings: Assigning Utility Influence

This step involves reviewing several sources of information to understand the utility's influence on the program's success. These should reflect the Market Progress Indicators (MPI) that are developed and

[11] Marshall Duer-Balkind et al., *Lessons from the Ground: Implementing Building Performance Standards* (Institute for Market Transformation, 2024), https://imt.org/resources/lessons-from-the-ground-implementing-building-performance-standards/.

finalized as part of the logic model. Since this step aims to quantify a counterfactual of what might have happened without utility intervention, evaluating the utility effect may need to consider more qualitative feedback and incorporate information from multiple sources. These sources of information could include:

- Participation data and compliance data from BPS databases
- Interviews and surveys of program implementors (state or municipal staff, typically) on utility role in BPS adoption and implementation
- Interviews and surveys of building owners to understand the utility role on their support for BPS policy and reducing barriers to complying with the BPS
- Interviews and surveys with building contractors to understand impact of training and/or technical materials to understand and comply with the BPS
- Expert judgment panels to assess compliance levels, review surveys, and interview data, and understand external market actor effects.

Allocating Savings to Multiple Utilities

In municipalities with different electric and gas utilities; the final step is to allocate and apportion the net program energy savings to each utility. These proportions can be determined by assuming a specific proportion of building savings for electricity and gas. If two utilities in a municipality have program elements that are significantly different, the proportion of allocation should reflect the scale of those differences, as determined through evaluations of net program savings research. This allocation should be based on the net program savings attributable to each utility's efforts in supporting BPS compliance, not simply allocating savings by fuel type. Because fuel switching is a key strategy building owners use to comply with BPS requirements, and electric utilities often drive these electrification measures, most of the impact may result in gas savings. These situations reinforce the need to consider fuel-neutral approaches to savings allocations during the evaluation process.

Emissions or Energy

For BPS programs where carbon emissions are the primary metric (as opposed to total energy saved) or where fuel switching is a key objective, additional layers of assessment may be necessary to determine where the energy savings should be allocated. Since specific actions taken to comply with the BPS may result in a reduction of gas use but an increase in electrical consumption (in the case of electrifying technologies), evaluators may need to assign a weighted factor based on the level of utility intervention and the associated overall reduction in energy savings.

Avoiding Double Counting

If a utility claims savings through an MT initiative, there is the risk of double counting if the existing program savings were attributed also to a resource acquisition program. Because BPS policies are typically set at the municipal level, clear geographic boundaries need to be accounted for in program planning and evaluation. We recommend clearly delineating between buildings in a BPS-municipality and those outside a BPS-municipality. At the outset of the BPS program development, for those building owners that take advantage of RA program funding outside of the BPS community, those savings could continue to be attributed to RA savings.

Timeline Challenges for BPS Utility Attribution

The multi-year nature of BPS policies with defined compliance checkpoints introduces uncertainty around when energy savings will materialize, posing challenges for how to account for savings using a

MT approach while also trying to meet annual savings targets. Utilities may see surges in program participation and energy savings leading up to compliance years, followed by steep declines immediately after. Similarly, high rebate demand just before a compliance deadline may risk exceeding maximum budget caps, while the drop-off in participation afterward can make it difficult to meet required minimum spending levels. This volatility makes it difficult to maintain consistent program performance and creates a misalignment with utility planning cycles. Circumstances like this demonstrate the need for utilities to thoroughly plan out how to account for energy savings in ways that meet expected savings cycles, whether a MT or RA approach is being considered.

There may be opportunities to better align BPS and utility evaluation timelines. One opportunity could involve making assumptions about savings occurring incrementally over the performance period, rather than solely in the final compliance year. Since benchmarking data is reported annually, tracking and validating savings trends over time may be feasible, allowing for a more continuous accounting approach. Counting savings as they occur, rather than deferring all attribution to the year of compliance, could help adjust for this misalignment and provide the consistency needed to meet utility program planning timelines.

Claiming Savings Using a Resource Acquisition Model

For utilities that may not be able to move forward using the MT approach, a simplified approach is available that considers the savings achieved through BPS programs and existing retrofit programs. The evaluation would occur within a typical annual or biannual cycle and would be narrowly focused on the buildings in BPS municipalities that are utilizing utility funding. The evaluation would place less emphasis on MT program elements like trainings, educational materials, and technical assistance to overcome barriers. These savings would be inclusive of the energy and demand savings from building level retrofits and upgrades that were incentivized through the resource acquisition programs. The challenges in this evaluation method may come from misalignment of the performance period and typical utility evaluation cycles. Some claimed savings may be lost to the utility if a building owner/manager complies with the BPS but does not take advantage of utility incentives.

The RA model not only measures savings from incentive and rebate programs but also considers other savings factors. For example, RA model energy efficiency programs reduce overall energy demand, lowering energy costs for consumers and easing grid demand. Reduced grid demand, in turn, minimizes the need for new power plants, generating savings that are passed on to end users. Savings can be quantified and attributed in both the short and long term.

4. NEXT STEPS FOR UTILITIES SEEKING BPS ATTRIBUTION

Utilities interested in exploring how to claim energy savings from their support of local BPS policies are encouraged to contact the report authors to discuss how the evaluation methods outlined in this framework can be tailored to their specific programs and policy contexts. Slipstream and ClearlyEnergy may also be able to offer technical assistance, including support in developing a roadmap for BPS engagement, creating a tailored logic model, and identifying regulatory barriers to claiming savings. Utilities and other stakeholders are also invited to share feedback on the framework and their experiences with attribution related to BPS initiatives.

APPENDIX

Table 2. Market Progress Indicators associated with Logic Model Outputs

Logic Model Output	MPI Number	Specific utility-supported activity associated with output	Data Source
Research Studies and building characterizations	**OP1.1**	Building stock analysis	Spreadsheet file with stock analysis, building segmentation analysis
	OP1.2	Completed research report on target setting, costs, energy savings, impacts of policy	File with research results, savings values, description of policy impacts
	OP1.3	Digital catalogue to host research results (e.g., shared drive file)	Link to digital catalogue/drive
Policy and rulemaking material; Public comments; letters of support	**OP2.1**	Repository of sample BPS adoption ordinances, policy requirements, and policy language templates from other municipalities/states with BPS	Template policy language, email communication sharing with staff
	OP2.2	Rulemaking and technical guidance templates/support	Template language, email communication and presentations sharing with staff
	OP2.3	Data on potential energy savings + costs	PDF file, email communications
	OP2.4	Roadmap for municipalities/states on policy steps	PDF file, email communications
	OP2.5	Presentation to municipal council/state legislatures	Attendance records, meeting notes, presentation
	OP2.6	Presentation to municipal/state staff	Attendance records, meeting notes, presentation
	OP2.7	Presentations to community members	Attendance records, meeting notes, presentations
Communications, marketing, and outreach materials	**OP3.1**	Website/repository of BPS sample educational materials, marketing, outreach materials from other municipalities/states with BPS	Website link/repository location
	OP3.2	Fliers, fact sheets, media, presentations, mailers for building owners and managers	PDF file, email communications
	OP3.3	Fliers, fact sheets, media, presentations, mailers for the general public	PDF file, email communications
	OP3.4	Fliers, fact sheets, media, presentations, mailers for design professionals, retrofit contractors	PDF file, email communications
	OP3.5	Programmatical data reports or dashboards (compliance percentage, progress towards interim goals, etc.)	PDF file, dashboard website link/location
Program incorporating financial and technical support	**OP4.1**	Leverage existing programs and/or draft implementation plans for advancement support	Files of draft plans with budgets
	OP4.2	Leverage existing programs and/or draft implementation plans for technical guidance support	Files of draft program plans with budgets, emails or support of potential Building Hubs, development documents around tools for benchmarking support

	OP4.3	Draft implementation plans for financial incentives	Files of draft plans with budgets
	OP4.4	Actual implementation of programs	Website, tools available for benchmarking, marketing materials, participation numbers
Training materials and educational resources	**OP5.1**	Website/repository of information, case studies on retrofits, training materials, and educational resources for building owners and managers, building construction, design professionals, retrofit contractors	Website link/repository location
	OP5.2	Deliver training webinar to municipal/state staff on benchmarking, BPS	Attendance records, Script and presentation files
	OP5.3	Deliver training webinar to building owners and managers	Attendance records, Script and presentation files
	OP5.4	Deliver training webinar to retrofit/commissioning firms	Attendance records, Script and presentation files
	OP5.5	Guidance document and FAQs for building owners and managers	File with FAQ + guidance; link to website where hosted
Compliance-ready utility data	**OP6.1**	Utility data sharing/aggregation plan	PDF file
	OP6.2	Guidance for building owners on utility data sharing services	PDF file, website link
	OP6.3	Public data reporting or dissemination protocol	PDF file, website link

Table 3. Market Progress Indicators associated with Logic Model Outcomes

Logic Model Outcome	MPI Number	MPI	Data Source
States and municipalities have adopted BPS	**OC1.1**	Increased number of introduced BPS ordinances	Meeting notes, policy drafts, passed policy language
Increase market actors understanding of BPS policies and intended impacts	**OC2.1**	Documented increased understanding of requirements	Survey responses measuring understanding of requirements for municipal/state staff, designers/retrofit contractors, building owners and managers (measured across time)
Increase stakeholders' understanding of where to find and how to utilize technical resources, incentives, and program offerings	**OC3.1**	Number of visits to existing resources	Data on number of website visits, phone calls to hotlines, etc.
	OC3.2	Stated responses that stakeholders have tools, resources, and technical information needed	Survey responses regarding use of technical resources, incentives, and program offerings from designers/retrofit contractors, building owners and managers (measured across time)
Compliance-ready utility data access expanded to all covered buildings	**OC4.1**	Increased number of buildings utilizing utility data directly from utility platforms	Data on number of buildings submitting utility data directly through utility platforms

Increased energy efficiency practices in retrofits of existing buildings	**OC5.1**	Number of buildings going through recommissioning or install EE equipment	Program participation data; efficiency measures installed data, survey responses
Increase market actors' willingness and ability to undertake required retrofits	**OC6.1**	Documented interest in EE retrofits	Survey responses for design/new construction (measured across time)
Increased number of buildings that meet the BPS policy requirements	**OC7.1**	Number of buildings that meet EUI targets	Benchmarking data from municipalities/states, penalties issued by municipalities/states
Increase participation in BPS-aligned Market Transformation initiatives	**OC8.1**	Documented increase in participation of other utility Market Transformation programs	Program participation data
Significant energy savings for existing buildings due to BPS adoption and compliance across a growing number of states and municipalities	**OC9.1**	Increased energy savings for existing buildings	Data reports or dashboards, energy savings reports, public communications and reports

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