

# **“It is amazing what you can accomplish if you do not care who gets the credit”: Creating Alignment between Cities and Utility Energy Efficiency Programs**

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## **ABSTRACT**

Cities are increasingly acting as market catalysts to encourage and require building owners to improve energy performance. However, cities implementing building performance policies that require actions like audits or re-tuning may experience conflicts with their regulated utilities' efficiency programs, which depend on energy savings being additional—not attributable to market adoption or preexisting laws. These utility programs preclude free ridership, meaning that the energy savings should be achieved by someone who otherwise would not have acted in the absence of the incentive or rebate. Utilities may decline to offer incentives where cities require particular actions, in turn dissuading cities from enacting ordinances that would lead to further efficiency improvements. This regulatory challenge impedes what could otherwise be a shared goal of improving energy efficiency. Finding solutions that allow city ordinances and utility programs to coexist is vital as cities are taking climate and energy matters into their own hands. Cities and utilities have so far navigated this problem informally. One potential approach is to apply established models from the world of energy codes, where some state regulators have permitted utilities to earn energy savings credit from supporting adoption of energy codes, or from improving code compliance. We consider how this approach and other frameworks could be applied to building performance policies. More specifically, this paper lays out a theory for how utilities can collaborate with local partners to drive deeper energy savings, with oversight from regulators, and examines the question of attributing the savings between the city and utility.

## **Introduction and Background<sup>1</sup>**

Cities across the U.S. have been developing climate and sustainability plans since the 1990s, incorporating energy efficiency programs as a key strategy for reducing greenhouse gas emissions and meeting other sustainability goals. Bolstered by their successes, cities have set increasingly aggressive energy and climate goals in support of their commitments to climate action.<sup>2</sup> Vanguard cities have also been working to raise the baseline performance of new and existing buildings by adopting higher energy codes and other mandatory building performance policies like benchmarking, transparency, audits, and energy “tune-ups” (retrocommissioning).

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<sup>2</sup> For example, more than 250 city and county leaders in the U.S. have signed the We Are Still In campaign, which pledges to “continue to support climate action to meet the Paris agreement” (We Are Still In 2018). Also, more than 60 mayors have signed the Chicago Climate Charter, which provides a more detailed commitment and roadmap for how local governments can achieve the goals of the Paris Climate Agreement (Emanuel 2018).

Currently, 24 cities and 2 counties require benchmarking and transparency for private sector buildings, and a further 11 cities require audits or energy actions like tune-ups (see Figure 1).<sup>3</sup>

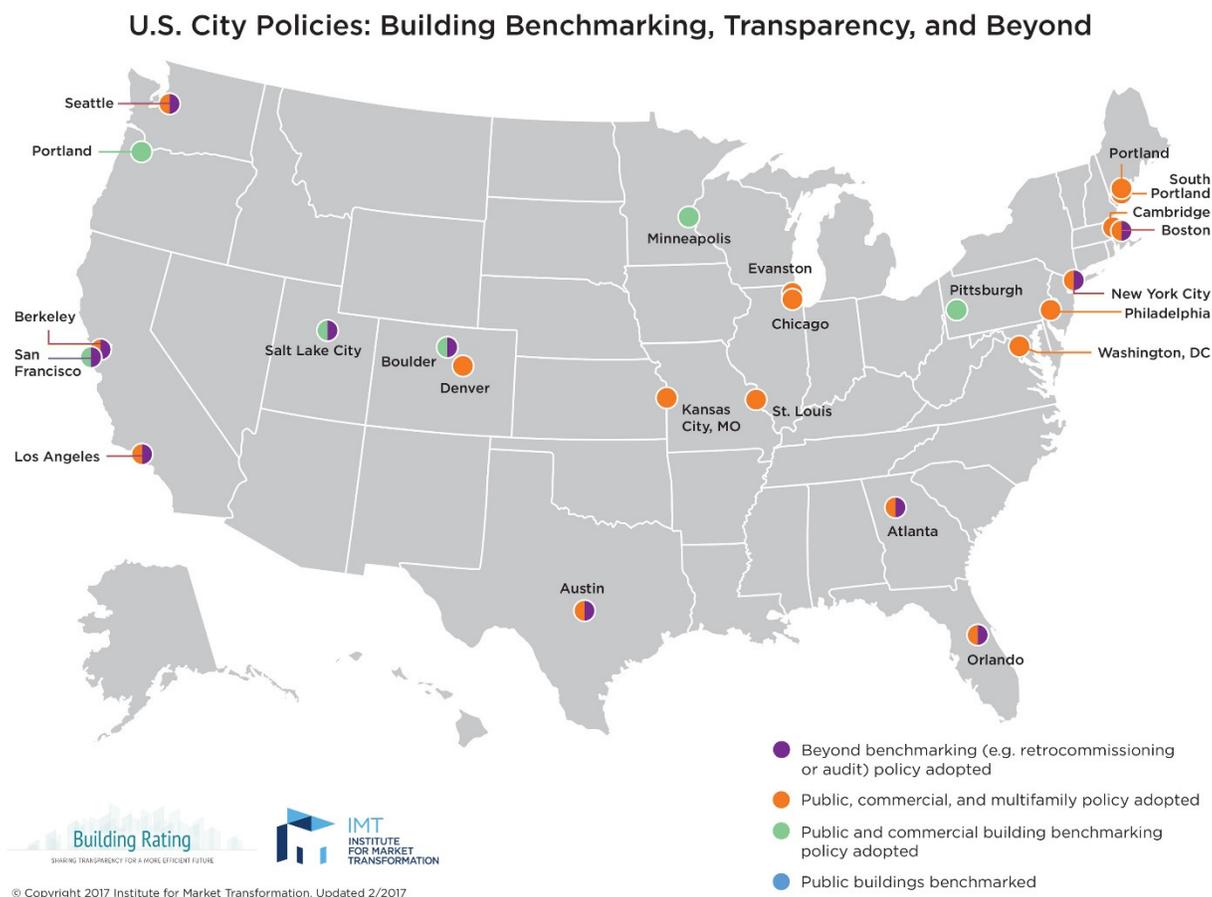


Figure 1. U.S. city building benchmarking and transparency policies.  
*Source:* IMT 2017.

### Cities Often View Utility Partnership as Key to Higher Compliance and Deeper Efficiency

Partnering with electric and natural gas utilities is necessary to ensure that implementation of these local policies goes smoothly. In the case of benchmarking and transparency policies, cities frequently ask energy utilities to provide whole-building data solutions to building owners. This requires utilities to combine meter or account data into building-level data, a process which makes it easier for building owners to understand usage trends and assess energy and equipment performance while reducing the time they spend compiling and cleaning data. For example, the City of Boston and Eversource have worked collaboratively in the implementation of the Building Energy Reporting and Disclosure Ordinance under a memorandum of understanding that led to development of an online data access tool and a dedicated utility staff member who works with the City on energy efficiency issues (U.S. DOE 2016).

<sup>3</sup> Those cities that do require audits or energy actions tend to provide exemptions for highly efficient buildings that perform well under ENERGY STAR, LEED, or other certification standards.

In addition to data, utilities offer efficiency expertise, foster qualified trade allies, and provide funding for energy efficiency rebates and services, including energy audits and retrocommissioning programs. Cities often leverage these utility services to drive deeper efficiency. For example, cities and utilities may work together to fund trainings and workshops that cover both the energy benchmarking process, as well as using the information collected as a result, to make energy efficiency upgrades (Mims et al. 2017). Additionally, the Retrofit Accelerator in the New York City Mayor’s Office of Sustainability uses building performance data—primarily the equipment and fuel information provided in the energy audit reports that building owners must submit under Local Law 87—to reach out to building owners about rebates and services offered by utilities like Con Edison (Crandall 2018). Between 2015 and 2017, the Retrofit Accelerator worked with decision-makers from 2,300 properties, resulting in 1,500 properties that investigated or completed energy or water efficiency projects, many pursuing electric or natural gas rebates offered by local utilities. While utilities provide efficiency funding, cities can provide community relationships, outreach, and engagement that may lead to deeper efficiency without added cost to the utility.

### **Utilities May Be Conflicted In Their Support for Local Programs**

However, where local governments are setting requirements around energy performance—such as energy codes for new construction, or benchmarking, energy audits, and retrocommissioning for existing buildings—utilities may be conflicted in their willingness to provide support. Particularly where a city chooses to require, for example, commercial buildings over a certain size to receive an energy audit, anecdotal evidence suggests that utilities may be reluctant to subsidize energy audits within the city due to regulatory concerns about free ridership. Free ridership is based around the idea that utilities should only receive credit for energy savings that are reasonably attributable to their actions—typically meaning those improvements that are not required by law or likely to occur naturally in the market. In general, if the federal, state, or local governments require a standard like appliance energy efficiency, utilities cannot receive credit for helping consumers meet that standard, even if it is cost-effective. Regulators enforce this standard with varying degrees of rigor and nuance.<sup>4</sup>

In one example, the City of Chicago was researching the possibility of updating its existing energy benchmarking ordinance, which currently requires annual reporting of energy information and data verification every three years. One potential update was to require energy audits or retrocommissioning. Currently, the local utility provides very simple “facility assessments” (which may be considered to be light audits) for no charge, as well as low- or no-cost retrocommissioning services under its energy efficiency portfolio. If Chicago were to mandate either audits or retrocommissioning, the utility may no longer be able to provide these ratepayer-funded efficiency services at low or no cost. This was one of the considerations and issues taken into account when Chicago did not move forward with the requirements. Chicago also estimated that if all reporting buildings covered by its benchmarking ordinance with ENERGY STAR scores below 90 were to improve their scores by only 10 points, buildings would see savings of over \$70 million per year (City of Chicago 2018). This is an example of types of savings being left on the table due to the regulatory challenge identified in this paper.

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<sup>4</sup> For example, PECO can receive credit for energy savings attributable to energy efficiency upgrades even where customers also received ARRA funding, provided the customers also received utility services or rebates (PPUC 2015).

Forward-looking utilities, and utilities in regulatory environments that require high energy efficiency performance, have tended to fund collaborative work with cities around building performance policies using “non-resource” marketing or market transformation dollars.<sup>5</sup> This is based on the theory that more information leads to a greater uptake of rebate offerings, which is where energy savings and cost-effectiveness are measured.<sup>6</sup> Other cities and utilities have found reasonable approaches that involve mandatory energy actions. For example, the City of Boston requires owners of low-performing buildings to take energy actions, but they offer many paths to compliance, including LEED certification or attaining a particular ENERGY STAR score, such that no one activity is required (Boston Municipal Code 2013).

Unfortunately, these creative efforts on the part of some utilities may not scale up to achieve the savings possible were utilities allowed to administer mainstream, ratepayer-funded programs to support compliance with locally mandated requirements. Free ridership concerns ignore the reality that even where a city (or county or state) has enacted requirements that should theoretically drive improvements in energy efficiency, those benefits will not be realized unless sufficient resources are allocated to support both compliance and enforcement. Under-resourced local governments may be unable to dedicate the necessary staffing and other resources needed, leaving a critical gap that utilities could help to fill. The outcome of this conflict between cities and utilities (and by extension, their regulators) tends to be one or more of three options. First, cities may expend significant resources negotiating with utilities to obtain support that the utility may be disinclined to provide. Second, the utility’s concerns about their ability to provide resources may prevent cities from initiating stronger efficiency requirements. Finally, a city may pass a requirement but the utility may feel that it can no longer offer incentive programs or discounted services, the existence of which were key to passage. A more organized effort to align city and utility efforts could benefit all stakeholders and lead to significantly higher energy savings.

## **Reconsidering Free Ridership in City-Utility Partnerships**

Regulatory concerns about free ridership remain a barrier in the ability of cities and utilities to collaborate actively around building performance policies. However, markets are not transformed overnight, meaning it may be reasonable to adjust free ridership policies in certain cases. We see four options for doing so:

- A utility could seek permission from regulators to reduce energy savings goals after netting out those achieved by local governments implementing policies. Though this would retain practices around free ridership and attribution, it would not necessarily create an incentive for partnership between the city and the utility to work together to achieve greater levels of energy efficiency.
- Remove free ridership limitations entirely in the case of community-based programs. While this could increase the amount of credit utilities obtain for efforts driven by other

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<sup>5</sup> For example, Commonwealth Edison and Xcel Energy consider costs associated with providing whole-building data as market transformation costs, and Puget Sound Energy groups them with programmatic support costs (Commonwealth Edison 2017; Public Service Company of Colorado 2016; Puget Sound Energy 2017).

<sup>6</sup> Theory-based evaluation (TBE) involves describing a program theory that specifies the sequence of events a program is intended to cause, along with the precise causal mechanisms leading to these events. Evaluation then focuses on comparing observed events with the overall program theory (State and Local Energy Efficiency Action Network 2012).

actors, like cities passing ordinances, it is similarly not a guarantee of collaboration. Moreover, few regulators would be inclined to go that far.<sup>7</sup>

- Apply less rigorous cost-effectiveness tests to programs that involve community-based partnerships. This could be analogous to how many states set lower cost-effectiveness thresholds or assign benefit adders to low-income programs. An approach like this would recognize the long-term benefit of building relationships and credibility within communities, which are often not fully valued under current utility cost-effectiveness tests (Opinion Dynamics 2017). While this approach could be valid, cost-effectiveness may not be the primary issue here. Indeed, it is possible that by using building performance policy data to reach out to building owners, cities could help make utility programs more cost-effective by reducing marketing expenses (specific data on this front is still lacking).
- Adopt a regime similar to how utilities in some states are approved by regulators to provide support for state and local energy code compliance and adoption. Energy code support programs ignore free ridership concerns for the targeted purpose of bringing utilities' expertise and funding to bear to increase the energy performance of new buildings.<sup>8</sup> In other words, utilities help raise the baseline that their savings are measured against, and they may receive energy savings credit for doing so. As we discuss, we believe this approach has merit for aligning the incentives of cities and utilities around local efficiency in a way that regulators can support.

### **How Utility Code Support Programs Allow Utilities to Claim Energy Savings**

Energy codes define mandatory minimum energy efficiency requirements for equipment and systems installed in newly constructed or renovated buildings. Even though energy codes are adopted at the state or local level, some state regulators have allowed utilities to claim a portion of energy savings where they provide subject matter expertise to develop higher energy codes, help local jurisdictions adopt higher energy codes, or help local jurisdictions increase energy code compliance. Using the model of energy codes in California as an example, the California Energy Commission found that this type of utility support for energy codes can be extremely cost-effective. More specifically, California's Codes and Standards program allows the utilities to support compliance improvement for California standards such as the Title 24 energy code through education and training initiatives. They estimated that between 2010 and 2012 every dollar invested in non-codes and standards energy efficiency returned \$1.04, while investments in advocating and supporting codes and standards provided a return of approximately \$3.64 on every dollar (CPUC 2015). While the practices vary by state, there tend to be two key steps in a utility-supported energy code program: attribution and allocation (Burgess 2017).

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<sup>7</sup> The Public Utilities Commission of Ohio recently approved a settlement that rejected First Energy's proposal to receive shared savings credit (i.e., to be compensated for exceeding statutory efficiency goals) for a Customer Action Program and other offerings that assessed energy efficiency actions taken outside of regulated programs, including cities forming energy districts. (PUCO 2017.)

<sup>8</sup> For example, the California Public Utilities Commission (CPUC) established separate goals for codes and standards and, in its Energy Efficiency Program Manual, affirmed that 100 percent of verified net savings can be counted toward meeting these goals. The energy savings are measured by technical analysis that considers the difference between the previous code as the baseline (or the prevailing market practice, in the case of standards), and the new code or standard. (CPUC 2013). Finally, for the savings related to codes and standards, free riders are not considered, and additionality is not a consideration.

The attribution step assesses how much total energy savings could be generated by the state adopting a new energy code (e.g., California) or by Home Rule local governments adopting higher energy codes (e.g., Arizona). Utilities or their third-party evaluators tend to calculate energy savings based on models of how buildings should perform under the current and proposed energy codes. They monitor construction trends in the jurisdictions they work with to identify the number of buildings that are constructed under the new code, often allowing a time lag for builders and building departments to become more familiar with its requirements. Sometimes, utilities deduct savings due to an estimate of non-compliance. In California, Massachusetts, and Rhode Island, utilities may further apply a reduction to calculated energy savings from standards due to naturally occurring market adoption (NOMAD), or the prevalence of efficient equipment within the existing market.

The allocation step decides how the total energy savings should be divided among various contributors, which could include the utility, state agencies, code adoption bodies, and other organizations. Allocating the total energy savings between utilities and other drivers is complex. Utilities may provide energy code trainings, fund code books for local building departments, and participate in local processes to adopt new codes by providing technical assistance; often, they have to demonstrate specifics in their filings. States have taken different approaches to parsing out whether these activities lead to meaningful energy savings for which utilities can earn credit. Massachusetts assesses and attributes energy savings to utilities based on a Delphi panel of experts (Massachusetts Program Administrators 2015). Rhode Island considers contributions by multiple actors in increasing both stretch codes and compliance (NMR Group 2017). Utilities regulated by the Arizona Corporation Commission can count up to 30% of the energy savings associated with Home Rule cities passing higher local codes toward their regulated efficiency goals, while Salt River Project (SRP) can count up to 50%. SRP maintains an active presence in the Arizona codes world, providing troubleshooting and codes trainings tailored to specific needs raised by local building departments (Bonesteel 2017).

### **Applying Utility Code Support Programs to Building Performance Policies**

This section looks at how to apply the model of utility-supported codes and standards programs to a new program model in which utilities could support local building performance policies. In this new model, called the Utility-Supported Local Energy Requirements Program, a utility could support the adoption of a new local policy requiring buildings to complete actions (such as audits or tune-ups), or to improve energy performance. Utilities could also support compliance, and would then claim credit for the resulting energy savings with no or reduced consideration of free ridership.

As with the energy code support model, there would first be an attribution step, to assess the total energy savings associated with building performance policies. A growing body of literature is creating evaluation, measurement, and verification (EM&V) methodologies for benchmarking policies. For example, the *Benchmarking & Transparency Policy and Program Impact Evaluation Handbook* summarizes several approaches for assessing overall energy savings and non-energy benefits from benchmarking policies (Navigant Consulting and Steven Winter Associates 2015). The recently released *Impact Assessment: A Guide for City Governments to Estimate the Savings from Energy Benchmarking and Energy Efficiency Programs* summarizes how cities across the country are calculating energy savings associated with policy implementation (Antonoff 2018). While these publications provide useful

methodologies and protocols for measuring energy savings from local policies, most cities that have enacted these policies have limited insight into the specific drivers of energy consumption changes year-to-year. For example, cities rarely have access to information about what kinds of upgrades building owners invest in after they benchmark, audit, or tune up their buildings, which would enable more specific calculations and allocation of energy savings to particular actions.

Measuring the total energy savings derived from support of local efforts could vary in a few ways, as the following two examples show.

**Example 1 – Utility involvement with policy development.** If the utility supported development and adoption of energy audits, building tune-ups, and other energy performance policies required by local governments, the baseline would be the typical number of building owners that take advantage of these programs in any given year. The evaluator would then look at the number of new building owners to take part in these programs due to the local requirement. Finally, the energy savings would be the energy reductions from the new building owners enrolling in these programs, who have not taken advantage of such programs in the past.

**Example 2 – Utility involvement with policy execution and compliance.** Were the utility to support local government policies under which building owners were required to improve performance to a certain level, the baseline would simply be the energy use prior to when the new requirement was enacted. Any improvements achieved after the requirement is enacted would constitute savings that could then be analyzed for allocation.

Following the calculation of energy savings, there would be an allocation step. The following list provides options for how the utility could receive credit for energy savings associated with local building performance policies:

- The utility could receive full credit for energy savings, where it provides energy efficiency data and other support to owners of covered buildings required to make upgrades;
- The utility could receive credit based on a Delphi analysis, which should include staff of local governments with ordinances;
- The utility could receive credit proportionate to its financial contribution to program implementation compared to that of the city; or
- The utility could receive pre-designed percentages of credit based on undertaking particular supportive actions.

The particular path that works best may depend on the preferences of the regulator, utilities, and cities involved, as well as existing requirements in rules or laws. By allowing utilities to receive partial or even full credit for supporting local mandates—as opposed to no credit at all—utilities will have a stronger reason to support development of more stringent local policies, and to also support high levels of compliance with those policies. Moreover, many cities are more interested in achieving high levels of energy savings than in who receives credit for driving more efficient, high-performing buildings.

### **Steps Utilities Can Take to Support Building Performance Policies**

A key component of allocation is laying out the actions that the utility could take to justify its contribution toward energy savings from city-imposed building performance policies, whether they require benchmarking and transparency, energy audits, retrocommissioning, or

other actions. Accordingly, there are a series of seven potentially high-impact activities that utilities could undertake to demonstrate that they should receive credit for a portion of the energy savings associated with policy implementation. By showing they have taken these actions, utilities can justify that they should be allocated varying levels of credit for energy savings as calculated in the prior steps.

- **Participate in development of new requirements or programs.** Utility staff can attend local meetings and participate in advisory workshops to ensure that any policies are designed in ways that they can be complied with effectively and create information that is useful to building owners and the utility. In the process, the utility can provide information to the city and to building owners who may be covered by a policy about relevant energy efficiency offerings.
- **Conduct technical analyses.** Not all cities have the ability to perform the analyses that may be required to a) determine the energy savings that could be expected from a building performance policy (pre-implementation), and b) assess the actual savings associated with a policy (post-implementation). Utilities may be positioned to more quickly analyze the policy's impact. For example, although the evaluation methodology developed by Navigant on behalf of the Department of Energy provides a well-defined framework for determining the market transformation impacts of a local benchmarking and transparency requirement, New York City is the only jurisdiction that has completed an evaluation using this methodology since it was first published almost three years ago. Although utilities are very accustomed to conducting evaluation studies, very few city governments have the resources to hire a third party or the in-house expertise to perform this type of an evaluation.
- **Provide building owners with data.** While a growing number of utilities provide building owners with whole-building data, the list remains small at 36 utility companies nationwide (ENERGY STAR 2017).<sup>9</sup> When a city implements a building performance policy that includes a benchmarking and transparency component, the city asks the utility to provide building owners with aggregated, whole-building data upon the owners' request. This provides a simpler alternative to building owners having to seek consent from each tenant to obtain their monthly energy usage data, which can be an onerous task. Utilities like Commonwealth Edison and Rocky Mountain Power have provided whole-building data based on recognition of its usefulness to building owners, but other utilities have sought direction from state regulators due to concerns about privacy or cost. Creating a clear, easy-to-use process to request and receive whole-building data is one of the most high-impact actions a utility can take in support of local energy policies.
- **Provide training and technical assistance.** A number of utilities, including Commonwealth Edison, Portland General Electric, and Ameren have funded or otherwise supported trainings for building owners who use ENERGY STAR Portfolio Manager to comply with local benchmarking and transparency requirements. This type of support helps build capacity and lead to high levels of compliance with policies.
- **Offer energy efficiency products and services.** Not only can utilities provide general information about their rebate offerings, they can continue to provide energy audits, retrocommissioning support, or other services to customers in cities with mandates just as they would to customers in cities without mandates.

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<sup>9</sup> Some of these companies, like Xcel Energy, have subsidiaries operating in multiple states.

- **Exchange data with cities.** To assess whether a building performance policy would reduce carbon emissions, cities need utilities to provide information about energy usage for particular sectors; in return, cities may be able to provide utilities with information about building types, uses, and equipment. Cities and utilities may need to be able to share data so that they can assess whether building owners who complied with a benchmarking policy also undertook energy upgrades so they can assess cause and effect.
- **Use data from building performance policies to develop new programs.** Utilities may express concern that a local ordinance requiring energy audits may prevent them from offering free or cheap audits within the city. However, as part of those audits, the city can collect unique information about building energy systems to which the utility would not otherwise have had access. In the case of New York City and Con Edison, this information led to the modification of rebate offerings to better serve multifamily steam customers within the city (Crandall 2018).

Not only does the Utility-Supported Local Government Program approach align cities and utilities around higher energy efficiency participation, it allows each party to do what it does best and sets them up to support each other in the process.

### **Steps Needed for Approval**

A growing number of cities are actively considering building performance ordinances, and the regulatory conflict between cities and utilities described in this paper is likely to continue, possibly even coming before regulators. Two major steps are necessary in order to bring the idea of a Utility-Supported Local Government Program to fruition.

First, utility regulators must recognize the role of local governments as partners in creating a path to a clean energy future. Cities often represent a wide audience of stakeholders, including types of utility customers who may have been underrepresented in energy efficiency program participation. Cities are increasingly demonstrating their capacity to design and implement creative new efficiency programs, and also have unique regulatory authority over some aspects of building operations. The framework put forward in this proposal is designed to help utilities and regulators recognize what can be gained through active partnership between cities and utilities.

Second, state regulatory approval will be required. Only a handful of states currently allow utilities to receive energy savings credit for actions that raise the baseline of mandatory energy requirements (such as codes and standards). In some states, interveners have formally or informally raised concerns about allowing utilities to obtain credit for local actions where they also receive an incentive for exceeding efficiency goals. Utilities, regulators, cities, and interveners will want to structure programs that fit their unique regulatory environment. Leading cities should be engaged in the process of developing the utility's options to support building performance policies, and in attributing and allocating energy savings.

### **Conclusion**

The increase in city engagement with utilities—and the fact that city partnership can create benefits for utilities (and thus ratepayers) as well—means that the actions of local governments deserve renewed attention in the world of utility-run energy efficiency programs.

Using the model of codes and standards as a framework, state regulators could approve new programs in which utilities partner with cities that are creating mandatory energy programs. Under our proposed Utility-Supported Local Government Requirements program, the utility could support creation and compliance with local policies, and could then receive some or all of the credit for the new energy savings under such policies. By creating new partnership models like this, state regulators have the power to enable deeper energy savings than either entity would be able to achieve alone.

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