Energy Benchmarking and Disclosure

Summary of a Workshop on City Experiences, Market Impacts, and Program Evaluation

Lucy O'Keeffe, Karen Palmer, Margaret Walls, and Kristin Hayes

DISCUSSION PAPER

RESOURCES
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Abstract

Energy benchmarking and disclosure laws have been passed in 10 US cities and one county and are under consideration in many more. The laws require owners of commercial and, in some cities, multifamily residential buildings to annually disclose their energy use and benchmark it relative to similar buildings. This discussion paper summarizes the presentations, discussion, and findings from a December 2014 workshop hosted by Resources for the Future on benchmarking and disclosure. Participants included representatives from the cities where laws have been passed and are being considered, electric utilities, the real estate sector, energy service companies, energy data analytics companies, non-governmental organizations, the federal government, and academia. A major focus of the workshop was on evaluation of the programs and how to go about assessing their ability to reduce energy use and greenhouse gas emissions.

Key Words: energy efficiency, commercial buildings, disclosure, benchmarking, energy use intensity, Energy Star, LEED, program evaluation

Contents

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I. Introduction

As the largest users of energy in cities, buildings represent a significant access point for improving the energy efficiency of the US economy. Building energy benchmarking and disclosure (B&D) programs are the first systematic attempt to collect—and importantly, disclose to local governments, prospective tenants and buyers, and the public at large—high-resolution building energy use data at the city scale. A primary motivation for these B&D programs is the so-called "energy efficiency gap" or "energy paradox": the observation that consumers and firms fail to make energy efficiency investments that more than pay for themselves in the stream of energy savings they yield (Gillingham and Palmer 2014; Gerarden et al. 2015). Incomplete and asymmetric information is commonly believed to be an important source of this market failure; therefore, policies and programs to mitigate this issue must first address the information gap.

As of December 2014, 10 US cities and one county had passed B&D laws. Moving forward, these programs are likely to emerge in more cities; in fact, Atlanta, Georgia, Portland, Oregon, and Kansas City, Missouri are all currently considering them. Since many of the existing benchmarking and disclosure programs are still in their first or second year of reporting, it is still uncertain what long-run effect these policies will have on changes in building energy use and associated emissions. In the meantime, cities are beginning to draw insights on the data they have gathered and continue to adapt their programs based on their experiences thus far.

Resources for the Future (RFF) organized a workshop on city B&D programs on December 4, 2014. This workshop had four primary objectives:

- identify common and distinguishing features of benchmarking and disclosure ordinances and provide an initial assessment of implementation, compliance, and experiences in cities where the laws are currently in place;

- evaluate the laws' potential impacts on real estate market participants;

- assess the role of utilities, both as data providers and data users; and

- figure out how best to evaluate the programs in their ability to generate energy savings and CO_2 emissions reductions.

The content of the workshop was divided into four sessions. (The complete agenda is provided in the Appendix.) The first session dealt with the implementation of B&D policies from the perspective of city program representatives. In the second session, several utility representatives discussed the role of their employers in providing data access, coordinating with municipal governments, and administering other programs related to energy efficiency. The third session featured representatives from the commercial and multifamily residential real estate sectors and energy service companies providing their perspectives on market and firm responses to B&D policies. The final session concluded with a discussion of how to successfully evaluate B&D policies. Rigorous and careful program evaluation is critical. What is the proper way to assess whether these new policies, which appear to be growing in popularity across the United States, are achieving measurable reductions in energy use and CO_2 emissions?

The workshop was invitation-only and included approximately 60 participants from the real estate sector, utilities, energy service and energy data analytics companies, local governments, the US Environmental Protection Agency (EPA) and US Department of Energy (DOE), nongovernmental organizations (NGOs), and academics. The workshop was governed by the Chatham House Rule, allowing participants to freely share their observations, viewpoints, and knowledge without concerns over attribution. Each panel included only short presentations, leaving ample time for discussion.

This report provides a summary of the discussion and main lessons learned from the December 2014 workshop hosted by RFF and highlights directions for future research on B&D programs.

II. Overview of City Benchmarking and Disclosure Programs

The existing 11 B&D programs require buildings of a certain size to annually report their energy use and benchmark it relative to other buildings.[1] Minimum building size varies across

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[1] Palmer and Walls (2015) provide more information about the characteristics of B&D programs, analysis of their strengths and weaknesses, and some findings from the programs thus far.

cities; in most cities, buildings have been or are being phased in over time, with the largest buildings required to report first. Eight of the 11 localities require disclosure by municipal government buildings, and seven cities include multifamily residential properties. All of the programs require energy use to be reported to the government, and most require disclosure on a public website of some subset of that information, sometimes with a delay or exempting the first year of data from public disclosure. Austin and Seattle do not require public disclosure of building-level data but instead require disclosure as part of certain real estate transactions or to current building tenants.

All of the cities have similar reporting requirements. Building owners or their energy providers are required to submit monthly electric and natural gas bills (as well as other energy purchases and purchases of district steam) and certain building characteristics, including gross square footage, year built, and operating hours, to the administering agency in the city. Some city ordinances also have additional requirements such as energy audits or retrocommissioning.[2]

For benchmarking, most cities require (and all allow) the use of EPA's Portfolio Manager (PM) tool. The responsibility for benchmarking lies with the building owner, in most cases, to collect and correctly input monthly utility bill data and other information pertaining to the building into PM.[3] PM is then able to calculate a building's Energy Star score, a measure of relative building energy performance for a particular building type, and its weather-adjusted energy use intensity (EUI), a measure of total energy use adjusted for the size of the building.[4] The final report in PM gets sent to the municipal office in charge of administering the benchmarking program. Assuming all of the criteria for reporting are accurate and complete, the administrating office discloses this information to downstream users—either to the public at large, typically via a website, or in the case of Austin and Seattle, upon request.

The intention of disclosure is that publicizing building energy efficiency (EUIs, Energy Star scores, or both) will provide valuable information to potential renters, buyers, and financiers. This will make it easier for them to take into account the energy characteristics of buildings, in particular the likely energy costs of building operations, when making purchase,

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[2] Some cities also require buildings to report their monthly water usage data.

[3] In Seattle, the utilities directly input the information.

[4] PM converts "site" EUIs into "source" EUIs based on conversion factors that take into consideration the type of fuel used to produce electricity consumed in the building, efficiency of electricity production, and energy losses in electricity transmission (Palmer and Walls 2015).

lease, and financing decisions. Gradually, the information is expected to move the commercial and multifamily residential building markets toward greater efficiency as building owners invest in energy improvements in order to compete for tenants and buyers. For this market transformation to have a chance of occurring, however, data provided by these programs have to be reliable, easily accessible, and presented in such a form that they are useful to buyers and tenants in making decisions.

Even if B&D programs are able to relieve some of the information deficit issues that are believed to be currently constraining investments in energy efficiency, can we expect that market actors will actually respond to this information? How do we measure the degree of that response? We also want to know more about the mechanism that is driving the market response. What information is conveyed and the form it takes may influence the saliency of the message; for example, should the information provided vary depending on the characteristics of the building or the occupancy type? These are some of the questions that should be carefully considered during the early stages of program evaluation.

III. Insights and Lessons Learned from the RFF Workshop

Data Quality

Data quality has been an issue in B&D programs in virtually all cities. Common problems affecting data quality include incomplete compliance with the law, unreliability of the reported data, and complications with address matching. Compliance is improving as building owners become more familiar with the laws. Moreover, cities are iteratively making changes to better facilitate the reporting process and improve data quality. Measures taken by city programs thus far to improve data quality include educational outreach and assistance programs, frequent data quality checks, and third-party verification. Some building owners have outsourced their compliance to independent consultants; however, as some of the city representatives noted, this does not guarantee better data quality.

Some common data entry errors that workshop participants reported include incorrect units for district steam consumption, gaps or overlaps in meter interval dates, and in some cases incorrect building identification. Multimetered buildings pose particular challenges and can contribute to the building identification errors, which in turn create problems for cities trying to merge PM records with tax assessment data.

One potential solution to some of these data problems is direct data uploads by utilities, as in Seattle. This approach provides the advantage of improved data accuracy at the whole building level but at additional cost to the utilities and with the potential disadvantage that building owners may pay less attention to their energy use. Seattle city officials believe that the direct upload system is responsible for their high compliance rate—99 percent of buildings subject to the law were in compliance by the second reporting year.

Beyond automatic utility uploading, there are a few upstream measures that workshop participants suggested cities may consider or that are being implemented in some locales. One idea on the table is to introduce a requirement that individuals in charge of benchmarking undergo mandatory PM training. The City Energy Project, a joint initiative of the Institute for Market Transformation and the Natural Resources Defense Council, is working to make this a requirement in its partner cities that have B&D programs. Workshop participants noted that this might be complicated in cases where there is continual turnover in who is doing the benchmarking for a particular building.[5]

Other preventative measures are built into the PM benchmarking program to prescreen for data quality issues before the energy report is submitted. PM data checker, although previously an add-on program, has been updated and is being added automatically for this reporting year. Additionally, the DOE's Standard Energy Efficiency Data (SEED) platform, an open source software application that organizes building energy performance data, can have a data-cleaning module attached, which is an ex-post flagging system to let cities know where there are problems in the data.

To overcome problems of noncompliance, cities can use the penalty system built into all of the B&D laws. Most workshop participants agreed that extensive outreach for noncompliers should take place before penalties are levied. There are challenges, however; some city representatives pointed out that program administrators have only a limited time frame in which to reach out to noncompliers. This reinforces the need for outreach early in program implementation.

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[5] So far, most cities have targeted their outreach and training programs mainly toward smaller, nontraditional building types (e.g., buildings owned by nonprofits or religious groups), which tend to have the most difficulty complying with B&D laws.

Moving from Data to Insights

Once cities have the initial tranche of clean data, they can start thinking about creative ways to deliver this information to the public and also back to building owners and managers. Philadelphia and Seattle both send energy scorecards to building owners via email and have begun tracking the share of those emails that are opened. While there is some anecdotal evidence that these scorecards are effective, for many buildings there is more to the story than can be explained by a single score. Several workshop participants noted that there might be an opportunity to randomize the information that gets distributed back to building owners for the purpose of tracking behavioral response and measuring the effectiveness of this information approach. The utility of information provided through energy scorecards may also largely depend on when it is received. For example, information provision on an individual building's energy efficiency may be more impactful if it arrives at a point in time when the owner is prepared to make a large investment in the building's energy system. One participant suggested that benchmarking data could be matched with mortgage data to find touch points for energy efficiency investments.

City programs have also been using these data internally to conduct their own trend analyses and to describe the building stock itself. Most important is that cities have been using this initial data to establish strong baselines from which they can target other policies directed at building energy use. Some cities, such as Washington, DC, Philadelphia, and San Francisco, use the SEED Platform to manage, validate, and share large amounts of data on the energy performance of buildings. One of the benefits of this program is that it transforms the building data into a common format, allowing for accurate comparison between data sets. It also provides links to PM, the DOE Buildings Performance Database, and the DOE Commercial Building Energy Asset Scoring Tool.[6]

Workshop participants engaged in a lively discussion of whether the information disclosed to the public in B&D programs is currently useful and whether we can do better. One participant suggested that simply having a government website with an Excel spreadsheet of buildings is not very user-friendly. An important next step is to think about how to make this information available to a broader set of constituents involved in real estate decisionmaking, acting on the idea that additional data analysis and visualization tools will lead to more

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[6] For more information on the DOE programs, see http://energy.gov/eere/buildings/building-performance-database and http://energy.gov/eere/buildings/building-energy-asset-score.

widespread usage of these data. To achieve this, cities may need to turn to partners in the private sector who have the commercial real estate knowledge and analytic capabilities to deliver this information to the market. After the workshop, in February 2015, Philadelphia released its own visualization tool for the data the city is collecting; these data are available for public use and allow for sorting, locating, and comparing building data.[7] The city also hopes to be able to analyze user interaction with this program.

Whether the disclosed data are useful for insights on program evaluation—that is, for determining whether B&D laws have had measurable impacts on energy use—is another issue altogether and one that we return to in the Evaluation section below.

The Role of Utilities

Utilities play a central role in city B&D programs by making the data available to facilitate, target, and improve policy implementation. As mentioned previously, utility data availability differs across city programs; some utilities provide direct upload of customer data into PM, but others do not. Providing "data pushing" services like Pepco's Green Button Connect and Commonwealth Edison's Energy Usage Data System (EUDS) comes at a high cost for the utility, and it is reasonable for the utility to expect cost recovery if it does tap into its own resources to help carry out B&D programs. It is important to note that utilities have their own set of existing energy efficiency programs separate from or in collaboration with the jurisdictions they serve.

While the information generated through B&D programs stands to be mutually beneficial to both the cities and energy utilities, disclosed data are generally not being used by utility energy efficiency programs. One exception to this is the DC Sustainable Energy Utility (DCSEU), an entity chartered by DC's District Department of the Environment and operated by a private company that runs energy efficiency and renewable energy programs in the district. The DCSEU works directly with these data to promote and implement energy savings in Washington, DC. Before the DC B&D program existed, DCSEU was able to obtain energy data but with building characteristics and other useful information scrubbed. Now it can actually see who owns a building, whether it is part of a larger portfolio of buildings, and how a building's energy performance compares with that of its peers at both the local and national levels.

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[7] For access to this visualization tool, see http://visualization.phillybuildingbenchmarking.com/#/.

The more traditional utilities represented at the workshop noted that they have not seen a direct benefit in their energy efficiency outreach programs as a result of B&D policies. Given the somewhat varied perspectives of utilities on their experiences thus far working with B&D programs, it will be interesting to see how their role may evolve. Most workshop participants agreed that more collaboration between cities and utilities around B&D programs is needed.

Real Estate Markets

B&D policies have been promulgated based on the idea that transmitting energy use information to downstream users is necessary to change real estate market behavior. Workshop participants debated the extent to which this is true. On the one hand, some segments of the commercial real estate market are already moving on their own. Voluntary benchmarking using the PM software has grown enormously in recent years; according to EPA's Energy Star program, there are currently 400,000 buildings in the PM system, the majority of which are voluntary accounts.

One potential explanation for this increase in voluntary benchmarking is that many commercial buildings tend to be managed as part of a larger portfolio owned by institutional investors or a real estate investment trust (REIT). Members from the real estate panel noted that if one building represented in a portfolio is required to benchmark, the property manager will often benchmark the remainder of the portfolio because it is efficient to do so or because he or she anticipates B&D laws being passed in other cities. One workshop participant noted that the proportion of properties in a given portfolio that are required to benchmark essentially tells a company how much it has to think about building energy use in all its buildings. Large equity REITs may also be genuinely interested in improving the energy efficiency of their properties as part of their corporate strategy. Regardless of the underlying motivation for commercial benchmarking, it appears that compliance with existing mandates may not be an issue, at least for larger commercial entities.

Some anecdotal evidence suggests that B&D mandates are opening the doors to green building certification. One participant observed that owners of buildings that already demonstrate relatively high energy performance have an increased motivation to take the extra steps to get Energy Star or Leadership in Energy & Environmental Design (LEED) certified once they know their Energy Star scores. These certifications may be worth it on the basis of competitive product differentiation. Workshop participants discussed why these may be useful to prospective tenants and buyers: Is it the energy efficiency aspects of the label that matter, or other "green" attributes, or perhaps an overall symbol of quality or good building management that the label conveys?

One academic participant pointed out that findings in the economic literature show that LEED and Energy Star building certification labels are capitalized in higher rents and sale prices but that some studies show that the effect is too large to reflect only lower energy costs (Eichholtz et al. 2010, 2013; Walls et al. 2013). The extent to which B&D laws are driving building owners to LEED certification needs to be evaluated in an empirical framework, controlling for confounding factors.

Several participants emphasized the importance of how financing works in commercial real estate markets. One expert highlighted what he referred to as "key financial moments of truth," which occur during leasing, property sale, and appraisals. From a financial decisionmaking standpoint, it is critical that energy efficiency information enter into these processes in order to drive market behavior. This point was echoed in comments by an academic participant about the timing of engineering reports in the context of appraisal and underwriting. She emphasized that engineering reports currently come after the appraisal process. If we expect building energy use data to have any effect on real estate markets, it should be provided in time to ensure that this information is packaged into the appraisal information sent to banks and mortgage lenders.

Many participants noted that how building energy use metrics and green building certifications are weighed in the overall structure of a lease will depend on many factors. Property view, location, and proximity to transportation are among a long list of building attributes that enter into the final decision made by tenants and buyers. Overall, there was some disagreement among workshop participants on the relative importance of energy efficiency as a determinant of real estate transactions, and more research on this topic is needed.

Private Sector Innovation

City B&D policies have enhanced the market for comprehensive building energy management services. Traditional energy service companies such as Schneider Electric, Johnson Controls, Siemens, and Ingersoll Rand and new market participants such as CodeGreen Solutions, Goby, Bright Power, and FirstFuel are retained to manage the energy efficiency for large portfolios of commercial properties. Many of these third-party service providers do everything from B&D reporting and data verification to energy audits and green building certifications. Client building energy portfolios are often managed via a cloud-based software platform designed to help commercial property managers strategically plan and optimize investments in energy efficiency across their entire portfolios.

Firms that specialize in energy data analytics have also leveraged their computational resources to design creative tools that can be widely accessed in the market. These include mobile apps that allow building owners to see their Energy Star scores and those of buildings around them. Some participants pointed out that these tools could be used by commercial property real estate agents to communicate building energy performance information to perspective tenants. This is a good example of how private sector firms, working in the energy efficiency space, may be able to move the raw data generated by B&D laws into a position where they can actually be used.

Evaluation

Policy researchers want to be able to precisely identify a causal relationship between city B&D laws and the energy savings and GHG emissions reductions they produce. Answering the question of what does or does not affect market behavior in enough contexts will help illuminate the generalizability ("external validity") of any individual set of results. By providing an overview of standard methodologies applied by economists to evaluate public policy, the final workshop panel aimed to clarify the important difference between correlation and causation.

An academic participant kicked off the final session by highlighting the "credibility revolution" that has taken place in the field of economics over the past 20 years. In particular, there has been an increased emphasis on estimating causal effects and designing research to allow maximum confidence that studies really are answering the question of interest.[8] Conducting a simple trend analysis to evaluate the before and after effects of a policy does not adequately control for other factors that could influence energy consumption over the same time period when the policy was being implemented. All academics were in agreement on the importance of controlling for these so-called "correlated unobservables" in any program evaluation.

We can measure causal effects in a few different ways; the gold standard method is a randomized control trial (RCT). RCTs require a control group and one or more treatment groups. The assignment to each group is random, meaning there are no confounding factors affecting the treatment that each group receives. Next, researchers must determine what they want to test for (e.g., energy savings, additional LEED buildings, Energy Star scores). Finally, they must decide

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[8] Two useful references suggested by an academic participant are Glennerster and Takavarasha (2013) and Angrist and Pischke (2009).

on the level of randomization (e.g., individual level, building level, city level). Data for the treatment and control groups must be obtained from before the treatment data and analyzed to capture any prepolicy trends. Another important factor in designing an RCT is that the sample size needs to be large enough to discern an effect.

Because it may not be practical from a public policy standpoint to systematically randomize benchmarking from the outset, cities might consider applying this approach to evaluate the effect of the information provided via the energy scorecards that get delivered back to building owners or other kinds of ancillary features of the B&D programs. Other times when it might be easier to roll out an RCT are when resources are limited and thus a program or policy will not be globally applied. One could thus devise approaches to random assignment of the "treatment" (e.g., a lottery approach to randomize who gets the intervention).

Sometimes policy researchers can look retrospectively or exploit different aspects of the data to mimic natural experiments or situations that are "as good as" randomly assigned. The inclusion of building size and geographic thresholds in the design of B&D programs allows for natural experiments with well-defined control groups; for example, buildings that fall just short of the minimum building size threshold are very similar to those just above the threshold, but only one set needs to comply. Likewise, buildings similar to those covered by a B&D policy but located just outside the geographic area where the mandate exists could also serve as a potential control group. In either example, one could compare energy use before and after the policy takes effect between these buildings, controlling for other factors such as weather. A regression discontinuity approach enables such an evaluation and should provide an unbiased estimate of the energy savings resulting from the policy. In order to build a counterfactual scenario, though, researchers need the same standardized data on buildings not covered by the law, information that is currently difficult to obtain. Many researchers at the workshop emphasized the need for access to individual building-level data from utilities in order to do a proper evaluation of this type.

One academic participant also emphasized the importance of understanding how energy performance is capitalized in real estate markets and the role that B&D laws may play in helping with this. For one thing, because the laws are mandatory, one does not need to infer effects from a set of buildings that are voluntarily LEED or Energy Star certified. For another, the laws may help distinguish between capitalization effects that are due to certifications and those from the underlying energy performance, an important issue discussed earlier in the workshop.

Designing a qualified study of this type requires access to good-quality data for both before and after a B&D policy is implemented. In the absence of prepolicy data, researchers could use predisclosure data in cities where the first year of reported data is not publicly disclosed. As one academic researcher pointed out, no data set is larger than that available to EPA through its PM program, so stakeholders might consider further opportunities to use these data to help in evaluating B&D policies.

Beyond evaluations of the energy use reductions from the laws, the building-level data produced by these ordinances may also simply help improve our understanding of the factors that influence and predict building energy use and EUIs. One of the academic researchers at the conference has used these data to pursue this question, and he reported that he has identified six to ten variables that describe most of the variation in building EUIs, but these are not the same as those included in Energy Star's current algorithm for predicting building EUIs.

Finally, in recognition that cities may not have the resources or research connections to conduct a formal or statistically complex policy evaluation, the DOE is producing a handbook for evaluating benchmarking programs, emphasizing other indicators of program effectiveness and other methods of evaluation. On the indicators side, the handbook focuses on identifying ways in which real estate markets are using the benchmarking and disclosure information in advertising and how decisionmakers are using this information. On methods, the handbook recommends surveys of building owners and other relevant stakeholders affected by benchmarking mandates. In terms of measuring the effects of the policy on aggregated energy use intensity, the handbook focuses on evaluation of the disclosed data and tracking its evolution over time. The major drawback of this latter type of evaluation is that it does not isolate the effects of the policy itself and therefore may lead to biased measurement of the policy impact.[9]

IV. Conclusion

City B&D ordinances are important new policies that are growing in popularity across the United States. The programs have created a valuable source of information on energy

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[9] Benchmarking and disclosure programs may also have spillover effects on neighboring jurisdictions where buildings are not covered by the policy but nonetheless start to engage in voluntary B&D to a greater extent because of market forces, particularly if this information has the potential to enhance building value. These spillover effects will complicate evaluations that use neighboring jurisdictions as a control group and are worthy of evaluation in their own right. At the very least, careful evaluation should be able to bound these effects.

features of the US building stock, information that city officials are hoping will move real estate markets toward greater energy efficiency and lower greenhouse gas emissions. The RFF workshop focused on how to evaluate these policies and determine whether they are achieving their goals. We identified six take-away messages from the workshop:

- Questions remain about the veracity and completeness of the data being collected by B&D programs. Cities are working hard on this problem, and both compliance rates and quality have tended to improve as the programs mature. Cities should communicate regularly with each other to establish best practices.

- Direct upload of data by utilities is likely to improve both compliance and data quality. But there are trade-offs in terms of costs and possibly building owner attentiveness to energy use. More discussion among utilities, city officials, and building owners is needed to address the possibility of direct upload and to facilitate data reporting more generally.

- How best to communicate the information from B&D programs so that it is most useful to the marketplace is an open question. This includes issues related to where information is displayed, such as on a government website, via cell phone apps, or displayed in building lobbies, and exactly what is disclosed—only Energy Star scores, EUIs and scores, or more detailed information on consumption by fuel type. More analysis and comparison of alternative approaches to information provision are needed.

- More research is also needed into the role of ancillary policy instruments such as building "scorecards" within cities and audit and retrocommissioning requirements that some cities have adopted. Whether the additional benefits from these "nudges" and mandates, beyond the simple information provision features of B&D, are worth the extra costs is an important question.

- How market participants—building owners, tenants, real estate agents and brokers, and financiers—consider energy efficiency in their decisionmaking and thus will use B&D information is unclear. It was agreed in the workshop that some large institutional real estate investors appear to be motivated to "green" their building stock. However, it is unclear how widespread this movement is and whether B&D programs will move others in the market toward greater efficiency.

- Rigorous evaluation of the impacts on energy use and CO_2 emissions from B&D laws is critical. This kind of evaluation needs to go beyond a mere tracking of Energy Star scores in benchmarked buildings over time. Rather, modern program evaluation techniques should be employed to the greatest extent possible. For individual cities, this will likely

require data from buildings that are not required to disclose. Additional discussions should take place among researchers, city officials in charge of these programs, utilities, and others on how to gather such data and carry out these studies.

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Appendix: Workshop Program

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Energy Benchmarking and Disclosure Programs:
Moving from Design and Implementation to Evaluation

RFF Workshop
December 4, 2014
RFF's First Floor Conference Room
1616 P Street NW, Washington, DC

AGENDA

Ten US cities and one county have adopted energy benchmarking and disclosure (B&D) ordinances for commercial buildings above a certain size and several more are considering doing so. These programs are designed to bring more information about energy use and energy performance to the attention of building owners, tenants and others involved in commercial real estate markets. They are also intended to help energy efficiency program managers at utilities or other organizations better target their energy efficiency efforts to buildings with greater energy savings potential. Typically B&D programs are one of many components of a local climate action plan that is intended to help the city reach a particular emissions reduction goal. The purposes of this invitation-only workshop are fourfold:

1. To identify common and distinguishing features of benchmarking and disclosure ordinances and provide an initial assessment of implementation, compliance, and experiences of those affected by the programs;
2. To assess what we are learning from the data that these programs are producing;
3. To assess whether these programs are producing the information about efficiency potential needed to best target our energy efficiency policies; and
4. To figure out how best to evaluate the programs in their ability to generate energy savings and CO_2 emissions reductions.

8:15 – 8:45 AM   **Continental Breakfast**

8:45 – 9:00 AM   **Introduction and Welcome**

9:00 – 10:30 AM   **Session 1: Implementing B&D Policies: Reflections
                                      from the Cities**

The design of B&D programs is similar across cities, but implementation experiences may differ. In this first panel, city representatives will discuss their experiences to date with reporting compliance, data quality, and early experiences with program evaluation.

10:30 – 10:45 AM   **Coffee Break**

10:45 AM – 12:00 PM   **Session 2: The Role of Utilities: Data Access, Coordination with
                                      City Government Agencies, and Utility Efficiency Programs**

Utilities can play an important role in the success of B&D programs, particularly in ensuring that energy use data are available to building owners for reporting purposes. The information collected by these programs may also help utilities target their own energy efficiency program dollars. The role of utilities in B&D programs will be addressed in this second panel.

12:00 – 12:45 PM   **Lunch**

12:45 – 2:00 PM   **Session 3: Market and Firm Responses to B&D Policies**

By providing information to the marketplace, B&D programs are expected to drive efficiency improvements in buildings. In this session, panel members will discuss experiences thus far, strengths and weaknesses of benchmarked energy consumption data, and the connection to real estate markets.

2:00 – 2:15 PM   **Coffee Break**

2:15 – 3:30 PM   **Session 4: Successfully Evaluating B&D Policies**

As B&D programs mature in the early-adopting cities and more cities pass B&D ordinances, how will we know what the programs are achieving? What evaluation methods have been or can be used by different groups? What is the best way forward for cities to evaluate the costs and benefits of these programs?

3:30 – 4:00 PM   **Wrap-up and Conclusion**

4:00 – 5:00 PM   **Reception**