



**Testimony on Bill # 120428 before the  
Committee on the Environment of the Council of the City Philadelphia  
Laurie Actman, Deputy Director, Energy Efficient Buildings Hub**

Chairwoman Reynolds Brown and members of the Committee, thank you for the opportunity to testify today. My name is Laurie Actman and I am the Deputy Director of the Energy Efficient Buildings Hub.

The Energy Efficient Buildings Hub (EEB Hub) was established as an Energy-Regional Innovation Cluster (E-RIC) at the Navy Yard in Philadelphia on February 1, 2011 with funding from the Department of Energy (DOE), the Economic Development Administration (EDA), the National Institute of Standards and Technology (NIST), the Small Business Administration (SBA), and the Commonwealth of Pennsylvania. As a multi-agency sponsored E-RIC, the EEB Hub has a unique dual mission of improving energy efficiency in buildings and promoting regional economic growth and job creation. We are led by Penn State University and include 22 other partners including University of Pennsylvania, PIDC, Ben Franklin Technology Partners, DVIRC and others.

We were created by the federal government to help find solutions to a national problem: reducing building energy use. Currently, buildings use 40 percent of our nation's primary energy, and that number has not been significantly reduced for the last thirty years. Energy efficient technology solutions and systems exist to upgrade and 'retrofit' buildings so that they operate with less energy, but the education and cost hurdles can be hard to surmount for the average size building, which is our focus.

Our overall goal is to reduce annual energy use in the commercial buildings sector in Greater Philadelphia by 20 percent by 2020. Our vision for how to achieve this is to design, demonstrate and deploy market proven solutions in the ten-county Greater Philadelphia region so that the buildings sector accomplishes its full potential for ongoing energy efficiency. We believe that we need to enable the EEB Hub goal through informed people, validated information, and proven technologies. This legislation can provide a new tool for making progress on our goal.

**Philadelphia's position as a sustainability leader:**

Both the Mayor and City Council have undertaken significant initiatives that are contributing to Philadelphia's position as a sustainability leader and have enabled us to effectively compete for national investment that supports energy innovation, the EEB Hub serving as the latest success story. Since 2009 Philadelphia and the region have attracted over \$350 million federal dollars to invest in our city and region's electricity infrastructure and energy savings goals. The ambitious Greenworks plan for example, articulates a goal of 30 percent reduction in city government energy consumption and a 10 percent reduction in buildings of all sectors by 2015. Two weeks ago the EEB Hub testified about how the new

Philadelphia Energy Authority can contribute to the city's and the EEB Hub's energy efficiency and sustainability goals, and we believe this legislation will further position the City as a national and international sustainability leader.

**Characteristics of our real estate market:**

Last fall, the EEB Hub commissioned a study of our regional commercial real estate market of buildings between 20,000 and 100,000 square feet and found that that nearly half of the average size commercial buildings in the Greater Philadelphia region are good candidates for energy efficiency retrofits, and that undertaking these retrofits could spur \$618 million in local spending and support 23,500 jobs. For buildings of all sizes we found nearly 80 percent of properties in the Philadelphia region's stock of commercial properties are retrofit ready. This includes 7,138 properties with a total square footage of 311.6m square feet.

The study also found that the average Philadelphia commercial property owner spends approximately \$2.84 per foot per year on energy costs. By contrast, the average U.S. commercial property spends \$2.21 per foot per year. Thus, Philadelphia's energy expenditures are 29 percent above the national average, and the fourth-highest among major cities.

We also found that the top 25 property owners in the region own barely ten percent of all commercial buildings, revealing how diffuse the ownership of mid-sized commercial properties is in the Philadelphia area. Even the two largest and most recognized commercial landlords, Brandywine Realty and Liberty Property, account for only three percent of all commercial space, whether measured by number of properties or total square footage.

What this tells us is that the market in the city and region has huge potential in terms of retrofit activity, but that we need new tools to spur education and interest in energy efficient commercial space among owners and tenants, especially because the majority of our commercial stock is not owned by larger, well-resourced companies that may have the ability to invest in understanding and improving their building energy use and leveraging existing incentives or programs.

**Why Benchmarking?**

Understanding building energy use is a critical first step for engaging building owners in energy efficiency and retrofit strategies and achieving sustainability and energy savings goals locally and nationally. Benchmarking and disclosure of building energy use is an innovative policy that has been adopted by an increasing number of cities and states across the country to support these goals.

Mandatory benchmarking seeks to provide building owners with a snapshot of how much energy their building uses and how their building relates to comparable buildings. Mandatory disclosure seeks to provide building users with a basis for comparing buildings they may rent or purchase. This is a form of labeling similar to EnergyStar ratings on appliances or miles per gallon ratings on automobiles, which help consumers make informed choices as well as incentivize sellers to make improvements to their product so it can be appropriately valued by consumers in the market.

We believe that benchmarking and disclosure will accelerate the market for retrofit in Philadelphia by generating interest and demand among owners and tenants in energy efficient space.

The Institute for Market Transformation (IMT) has played a critical role in recent years by sharing best practices on benchmarking and disclosure and analyzing the effect of these new laws. In 2012, IMT studied the impacts of a national benchmarking and disclosure policy and estimated it would:<sup>1</sup>

- Create more than 23,000 net new jobs in 2015 and more than 59,000 jobs in 2020.
- Reduce energy costs for building owners, consumers, and businesses by approximately \$3.8 billion through 2015 and more than \$18 billion through 2020.
- Generate more than \$7.8 billion in private investment in energy efficiency measures through 2020, yielding \$3 to \$4 in energy cost savings for every dollar invested.

Last month, the EEB Hub asked Econsult to estimate the impacts of a new benchmarking and disclosure policy in Philadelphia and they concluded:<sup>2</sup>

- The estimated energy efficiency improvements undertaken as a result of the legislation would result in the retrofit of approximately 5.3 million square feet of office space for a total cost of \$1.9 million, supporting 157 direct jobs. The ripple effects of that activity would generate an additional \$1.6 million in activity, for a total of \$3.5 million in economic value to the Philadelphia economy.
- Rent reductions spurred by increased competition between landlords would induce a one-time absorption of 443,000 square feet of office space, supporting 1,480 to 2,950 new office jobs, with an annual payroll of \$66.8 million to \$133.5 million.

#### **Implementation Issues:**

Many jurisdictions have met some of the obvious challenges to the successful implementation of benchmarking and disclosure policies-and I know Philadelphia will too.

Sub-metering- Most leases for commercial space are “triple net”, where the tenant carries the costs of occupancy, including utility bills. In this case, it makes it difficult for the owner to disclose the energy use of the building if they do not have access to its utility expenditures. However, more utilities are now engaging in efforts to share energy data with their customers (Chicago’s ComEd is a pioneer in this work) and PECO is exploring strategies to make this easier for building owners in the region as well. The EEB Hub has been asked by the Pennsylvania Public Utilities Commission to establish a regional working group of building energy efficiency stakeholders to focus on common policies, standards and implementation strategies for access to building data that can potentially be adopted by utilities including PECO. Creating common standards and practices could foster both increased energy efficient building market activity and innovation as both potential clients (building owners) and service companies benefit from more uniform and accessible market rules. In addition, we expect this work to inform and benefit implementation and compliance with the City of Philadelphia’s benchmarking legislation so that we can become a model for the rest of the country.

Split Incentives- The structure of most leases means that the owner would pay for the improvement but the tenant- who pays the utility bills- would reap the benefit. Green leases can help to align the financial and

---

<sup>1</sup> Burr, Andrew C., Heidi Garrett-Peltier, Cliff Majersik, and Sarah Stellberg. *Analysis of Job Creation and Energy Cost Savings From Building Energy Rating and Disclosure Policy*. Institute for Market Transformation and Political Economy Research Institute, March 2012.

<sup>2</sup> Econsult Corporation. *The Potential Impact of the Mandated Disclosure of Commercial Building Energy Use in Philadelphia*. Report submitted to the Energy Efficient Buildings Hub, May 2012.

---

energy incentives of building owners and tenants so they can work together to save money, conserve resources, and ensure the efficient operation of buildings. The EEB Hub is a partner in the Green Lease Library, a centralized resource for commercial green leasing sources and will be hosting a workshop on June 12<sup>th</sup> with the Delaware Valley Green Building Council, IMT and the local real estate community and national experts to discuss strategies for solving split incentive issues that we can incorporate in our local market.

High Cost to Compete- In the current market, most retrofits do not pay for themselves within the amount of time demanded by most owners. The retrofit may increase the value of the building, but the rate at which benefits are capitalized is typically too low, too slow, or both for the owner to be incentivized to undertake the retrofit at their own expense. New York City requires that owners pursue a technique that often yields high returns at minimal investment: retro-commissioning. While the proposed Philadelphia ordinance does not require retro-commissioning, the technique is available to owners who wish to improve the benchmarking of poor performing buildings. Retro-commissioning is the process by which an existing building undergoes a quality control assessment by applying a systematic process for improving and optimizing a building's operations and supporting those improvements with enhanced documentation and operator training. The Econsult report summarizes findings on the economics of retro-commissioning:

- Average cost for commissioning is \$0.30/SF (range: \$0.15/SF to \$0.60/SF);
- Average payback on retrofits is 1.1 years (range: 0.4 years to 2.4 years);
- Average cash-on-cash return is 91 percent (range: 49 percent to 210 percent).
- Average resulting savings were 16 percent (range: 8 percent to 31 percent) reduction of current costs.

**Conclusion:**

If owners disclose the efficiency of the space they are selling or renting, it would allow for more appropriate sorting of tenants into the space they are willing to pay for, along with more appropriate pricing of space based upon its relative energy efficiency. And, if owners are willing to improve the energy efficiency of their space to gain the higher rent, and it is profitable to do so, then the overall energy efficiency of the stock of commercial space could potentially be improved. If current rents and prices do not accurately reflect utility and maintenance costs, and there is market value for this information, then commercial office space market may be improved by government actions such as mandatory benchmarking that improve information symmetries between the market's participants. Building owners who invest in technologies and practices that improve their buildings' energy performance would be rewarded by prices that better reflect such value. Building occupants who seek more transparency in the space they lease or purchase would have firmer information on which to base their choices.

The EEB Hub is committed to helping provide implementation support to the City of Philadelphia, PECO and other utilities and building owners and tenants so that this proposed legislation achieves its desired energy savings and economic outcomes. Thank you for the opportunity to testify today.