

PHILADELPHIA'S BENCHMARKING AND ENERGY USE REPORTING PROGRAM



Energy efficiency is expected to be a key compliance option for states under the Clean Power Plan because it can minimize cost impacts to consumers and utilities.¹ For states using a rate-based emissions target, efficiency gains will need to be documented in comparison to an energy baseline to count toward compliance. For states using a mass-based emissions target, documenting efficiency gains will be important to ensure states and utilities are enacting effective efficiency programs and making progress toward long-term goals.

While not subject to the Clean Power Plan, U.S. cities are increasingly making ambitious commitments to reduce their carbon footprints. Philadelphia, for example, set a goal to reduce citywide carbon dioxide emissions by 20 percent of 1990 levels by the end of 2015. In 2016, the city will set a new target and is working with Drexel University to develop a framework for reducing carbon emissions by 80 percent of 1990 levels by 2050.

Among a host of policies designed to reduce Philadelphia's carbon footprint, the city's benchmarking program stands out. Like many large cities, energy use in buildings is Philadelphia's largest source of emissions. The city recently launched an energy benchmarking and reporting program for public buildings and non-residential buildings over 50,000 square feet. Benchmarking refers to developing and using standardized performance metrics to compare the energy or emissions intensity of users within the same sector. Philadelphia determines an energy score for each building based on energy and water use, as well as building-specific characteristics. Based on submitted data, city sustainability officers provide an annual report card to each building owner showing how their energy use compares to their peers. This data is ultimately

disclosed publicly to inform policymakers, property managers, and tenants.

Overall, states, cities, and businesses need better information to evaluate options, compare potential solutions, and share success stories. Benchmarking can help cities understand energy end-users and target initiatives to improve energy use. This data can help private and public stakeholders work together to find potential energy and cost savings. Over time, better knowledge among all stakeholders can identify opportunities for improved energy efficiency and emissions reductions and help states and utilities meet Clean Power Plan objectives.

PHILADELPHIA'S BENCHMARKING AND REPORTING PROGRAM AND CITYWIDE CARBON REDUCTION GOALS

In 2009, Mayor Michael Nutter adopted *Greenworks*, the city's first comprehensive sustainability plan. *Greenworks* set carbon and energy reduction goals for 2015, including reducing citywide energy consumption levels by 10 percent of 2006 levels.

Building energy use accounts for 60 percent of Philadelphia's total emissions, and so became an obvious focus of city efforts.² In 2011, public buildings began benchmarking and reporting their energy use. In 2013, non-residential buildings exceeding 50,000 square feet also began mandatory reporting. Large buildings often have energy managers focused on improving energy performance and making long-term planning decisions.

Using the U.S. Environmental Protection Agency (EPA) Portfolio Manager tool, each building reports its energy and water use data to the Mayor's Office of

Sustainability (MOS), along with information on its characteristics such as age, type of use, operating hours, and the amount of area heated and air-conditioned.³ MOS prepares Building Energy Performance Profiles for each building and compares its energy performance to similar buildings of similar purpose and use. MOS then can work on an individual basis to identify ways to improve energy performance.

MOS summarized the benchmarking program's second year of data collection. Overall, 90 percent of required buildings, or approximately 1,900 buildings that account for a quarter of the city's square footage, submitted data. Key findings include:⁴

- Among buildings eligible for ENERGY STAR scoring, the average rating for Philadelphia's buildings was 58, or 8 points better than the national average. High-performing ENERGY STAR-certified buildings must receive a 75 rating, so many buildings in the city have room for improvement.
- Universities and hospitals accounted for nearly half of the carbon dioxide emissions of reporting buildings.
- Offices and schools accounted for more than half of reporting buildings. The school district's first-ever sustainability plan, to be released this fall, will include targets for improving building efficiency and reducing greenhouse gas emissions.

With continued data collection and building owner engagement, MOS will further refine its program, which it plans to expand to multi-family buildings in 2016.

HOW DO CITY EFFORTS CONNECT TO THE CLEAN POWER PLAN?

In its final rule, EPA acknowledged that states have long run energy efficiency programs that have delivered real carbon dioxide reductions. If similar local-level programs can demonstrate efficiency gains, they may become compliance options for utilities under the Clean

Power Plan and potentially give cities a role going forward.

As evidenced by Philadelphia's benchmarking program, cities are becoming more knowledgeable about energy use and are working collaboratively with businesses and residents. The data provided by benchmarking can identify energy reduction and energy efficiency opportunities, and inform the potential effectiveness of demand-side management programs in large buildings.

Furthermore, cities have strong interest in ensuring that low-income communities benefit from clean energy and energy efficiency investments. The Clean Power Plan would establish an optional Clean Energy Incentive Program to reward early investments in renewable energy and demand-side energy efficiency measures in low-income communities. The energy efficiency measures will receive extra credits for each megawatt-hour (MWh) of avoided generation. Building on their understanding of low-income communities, cities can work with state and utility partners to identify potential projects.

ENDNOTES

1 Hopkins, J. Modeling EPA's Clean Power Plan: Insights for Cost-Effective Implementation. 2015. Center for Climate and Energy Solutions Last accessed 21 September 2015. <http://www.c2es.org/publications/modeling-epas-clean-power-plan-insights-cost-effective-implementation>.

2 City of Philadelphia Benchmarking Report 2014. Mayor's Office of Sustainability. 2014. Last accessed 21 September 2015. http://www.phillybuildingbenchmarking.com/year_2_flipbook.

3 "What is Benchmarking." Mayor's Office of Sustainability. Last accessed 21 September 2015. <http://www.phillybuildingbenchmarking.com/who-what-where-when/benchmarking/#ref1>.

4 Mayor's Office of Sustainability, 2014.



The Center for Climate and Energy Solutions (C2ES) is an independent, nonprofit, nonpartisan organization promoting strong policy and action to address our climate and energy challenges. The C2ES Solutions Forum brings together businesses, states, and cities to expand clean energy, reduce greenhouse gas emissions, and strengthen resilience to climate change.