BRIGHT POWER

ENERGY SCORE CARDS MINNESOTA

Benchmarking is widely considered a leading driver of energy and water savings for buildings. This premise underlies recent state and local laws and ordinances and informs business decisions by real estate owners on a regular basis. But what evidence is there that benchmarking works for multifamily buildings? Due to complicated metering and the challenges of gathering utility data, many in the industry still consider multifamily building benchmarking not yet feasible; some municipal and state policies even specifically exclude multifamily buildings.

BACKGROUND

Benchmarking is a measurement process used to identify certain performance characteristics and compare performance to a baseline standard over time. Energy and water benchmarking involves comparing building consumption to other similar buildings or to the same building over time.

EnergyScoreCards Minnesota was a pilot program led by Bright Power with several local Minnesota partners designed to test the feasibility and impact of energy and water benchmarking in over 550 multifamily buildings in Minnesota. Participants were offered free access to EnergyScoreCards, Bright Power's energy analysis software which includes a dedicated Account Manager to assist in understanding the data and developing a strategy for energy and water management.

The program was designed as a two-year controlled experiment; a treatment group received two years of free access to the EnergyScoreCards service, and a control group was tracked in EnergyScoreCards, but did not have access to the service until after the second year, allowing a comparison of outcomes between the two groups. A third party firm, Center for Energy and Environment, provided a process evaluation and conducted a thorough audit to verify the impact analysis.

FINDINGS

Statistically significant energy and water savings were found in master-metered buildings receiving the EnergyScoreCards services in comparison to the control group.

Master-metered buildings (buildings in which owners pay all utilities) receiving the service showed 5% energy savings and 30% water savings in the second year compared to master-metered buildings in the control group - measured at the 95% confidence interval.

5

% Site Owner Energy Index change for master-metered buildings

30

% Water Index change for master-metered buildings

FINDINGS CONT'D →

Multifamily energy and water benchmarking is demonstrably feasible at scale in Minnesota.

The program exceeded recruitment goals, collecting utility and property information on over 550 Minnesota multifamily buildings (93 owners and property managers and approximately 30,000 units). Only owner-paid utilities were tracked for this pilot. Buildings were compared to similar buildings in which owners paid for the same portion of utilities.

Benchmarks for typical energy and water performance among Minnesota multifamily buildings were developed.

Benchmarks can provide owners, program managers or policy makers perspective on the potential for energy and water savings in their buildings, and help target future efforts.

30,000

units

A participant survey documents the importance of hands-on support as part of a benchmarking service.

Documented strategies to engage participants and help them benefit from the service include providing dedicated support staff alongside benchmarking software, building a relationship with owners as a long-term partner, providing benchmarking services at a portfolio level, coordinating with other technical providers and establishing programs to bridge action.

Benchmarking was used by participants for many purposes beyond motivating immediate action to save energy or water.

Including: tracking the results of energy and water improvements, informing long-term capital planning, informing operations and maintenance procedures, enabling competitions among residents, as an internal communications tool to share the results of projects and convince decision-makers to take action, and as a business management tool to assist with budgeting, key performance indicators, and other asset management functions.

Additional Applications

WHAT'S NEXT?

As a first-of-its-kind large-scale experiment on multifamily benchmarking, this research suggests new approaches and avenues for further research. The results of the pilot lend support to the notion that benchmarking, whether adopted voluntarily or mandated by policies, can have measurable positive impacts on energy and water performance and serve an important function for managing energy and water in multifamily portfolios. The lessons learned on successful strategies in this pilot may also suggest ways that policymakers or real estate organizations, can improve the use of benchmarking to increase impacts. The results suggest that benchmarking could be used as a component on a more comprehensive multifamily retrofit or energy management program to improve long-term program results. This can include improving program outreach and completion rates, targeting successful projects, measuring impacts, and troubleshooting projects to ensure lasting savings. This type of large-scale experiment on benchmarking (or other energy and water efficiency interventions) should be replicated in different locations, with more buildings, or with varying experimental design (e.g. offering more time, including a variety of service levels, tighter integration with utilities or adding more hands-on technical assistance for owners).

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