Small Buildings and Small Portfolios

2014 Building Technologies Office Peer Review

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

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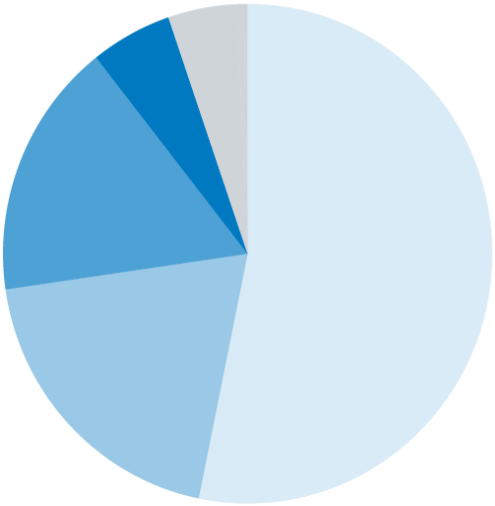
Commercial Buildings Integration

Small Commercial Buildings in the United States

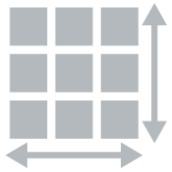


95%

NUMBER OF BUILDINGS

51%

SQUARE FOOTAGE



44%

ENERGY

Building Floor Space

- 1,001–5,000 ft²
- 5,001–10,000 ft²
- 10,001–25,000 ft²
- 25,001–50,000 ft²
- Over 50,000 ft²

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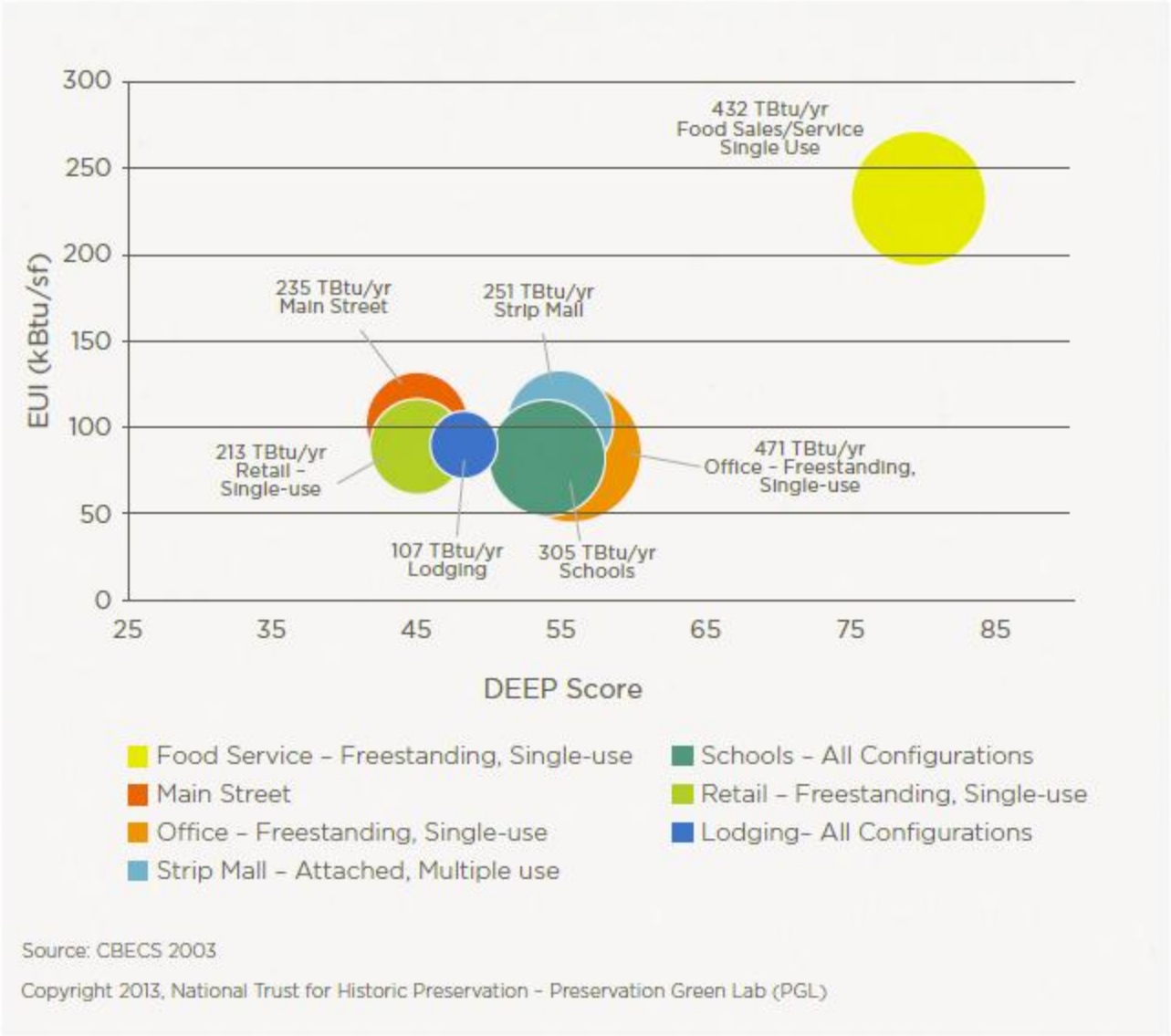

What are the Challenges?

The largest reported barriers inhibiting SBSP owners from adopting energy efficiency solutions:

- *Limited capital*
- *Higher transaction costs relative to energy cost savings*
- *Lack of time to research and implement energy efficiency solutions*
- *Split incentive obstacles between owners and tenants*
- *Lack of available sector-specific resources and technologies*

What are the Opportunities?

- HUGE Energy Savings
- Money back in business owners' pockets
- Economic development/redevelopment
- Innovation and growth

WHAT IS DOE DOING FOR SMALL BUILDINGS?

National Laboratory Research

- Small building market assessment report (NREL)
- Energy efficiency in pre-engineered metal buildings (ORNL)
- Midstream/Upstream utility incentive program design (ANL)
- Contractor-led energy management (LBNL)
- Pre-packaged solutions for the small-commercial sector (NREL)
- Leveraging existing SBA programs for small building energy efficiency (NREL/ANL)
- Cooperative agreement support (NREL/LBNL/ORNL)

Cooperative Agreements

In 2013, DOE funded six cooperative agreements that explore innovative models for engaging small businesses and small building owners/managers. Project goals include:

- Emphasizing a whole-building approach for new construction and retrofits
- Engaging local service providers
- Development of easy-to-use and simple tools to measure, track, and take action on building energy use
- Evaluation of retrofit packages that are cost-effective and appropriate for the small-buildings sector
- Improving access to financing through innovative models, structures, and programs

Penn State Consortium for Building Energy Innovation

In 2014, the Penn State Consortium for Building Energy Innovation (formerly the EEB Hub) revised their mission to focus specifically on demonstrating innovative solutions to improve efficiency in the SMBCS. The projects take advantage of the Consortium's unique roles of:

- Serving as a real-world test bed for technical/market solutions
- Demonstrating and testing real-world integration of technologies, systems, and processes
- Producing replicable solutions that require a local origin but can be applied nationally
- Advancing R&D of needed technologies and solutions

Future Areas of Exploration

- Encourage more small buildings submission to the BPD
- Develop/refine engagement structure that works for the small buildings sector
- Develop or test simple, low-cost analysis tools
- Investigate standardized low-risk retrofit packages
- Advanced controls targeted to the small building sector