

Commercial Building Energy Benchmarking and Labeling

Building Energy Benchmarking and Labeling

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Implementing a Voluntary Program in Northern Virginia

Key Considerations

Energy use in buildings comprises about 40% of all energy consumption in the United States. Significant energy and cost savings opportunities exist in buildings where energy efficiency improvements can be made. However, many building owners and tenants are not aware of how well their buildings are performing and the level of savings that are available.

This White Paper describes an energy benchmarking and labeling program that can add transparency to energy use and costs in buildings, helping grow the market for high-performance buildings.

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A Report on Accelerating Commercial Building Energy Retrofits



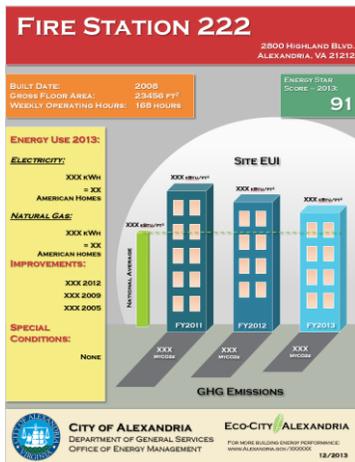
Purpose

Energy use in buildings comprises about 40% of all energy used in the United States. Significant savings opportunities exist in both the public and private sectors where cost-effective energy efficiency improvements can be made. However, many building owners are not aware of the level of savings that are available.

A building benchmarking and labeling program will increase market transparency and improve public awareness of the operational savings of high-performing buildings. Benchmarking and labeling high performing buildings can improve a building's stature in the market, leading to increased demand for the space and increased tenant retention. Energy benchmarking and labeling can provide proof that a building is energy efficient and will have lower operating costs.

Why a Voluntary Program

Commercial building benchmarking programs have recently been implemented in many cities across the United States, including Washington, DC, New York City, Philadelphia, Minneapolis, San Francisco, and Chicago. These programs require participation from private commercial



building owners and operators. Unlike these programs, commercial benchmarking program implementation in Northern Virginia cannot be made mandatory. Therefore, participation in any benchmarking programs in Northern Virginia must be completely voluntary. Participation will depend on building owners understanding the value of the program to their properties.

Implementing a mandatory program in Virginia would require new authorization from the Virginia General Assembly, as is typically required for new programs under the state's "Dillon's Rule."

One recommendation for implementing a voluntary program is to establish a friendly competition. By implementing a voluntary commercial building benchmarking program as a competition, a jurisdiction can leverage the competitive nature of participants and encourage continuous effort towards community energy reduction goals.

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Data Privacy Considerations

Data privacy is an important consideration to address in a commercial building benchmarking program. Building owners, tenants or building managers have a proprietary right to their utility data. Moreover, business sensitive buildings and operations, such those with data centers, may not wish to share energy use or building benchmarking information in order to maintain business advantage over competitors. Therefore, it can be left to the discretion of the program participant to publicly share utility use and building benchmarking information.

Target Audience

It is critical to target the right audience to start a building energy benchmarking and labeling program. Keeping participants motivated and engaged is a key factor to a successful program. One key way is to find and encourage participation by “early adopters.” Such early adopters may be building owners or operators who are already conducting building benchmarking and may wish to compete against peers. Others may be those who have high-performing buildings and would like to publicize their performance as a marketing tool. Program administrators may wish to reach out to participants in the US Department of Energy’s Better Buildings Alliance and Better Buildings Challenges or the United States Green Building Council’s Green Building Information Gateway (GBIG) to find these early adopters.



The Better Buildings Alliance is a U.S. Department of Energy (DOE) effort to promote energy efficiency in U.S. commercial buildings through collaboration with building owners, operators, and

managers. Members of the Better Buildings Alliance commit to addressing energy efficiency needs in their buildings by setting energy savings goals, developing innovative energy efficiency resources, and adopting advanced cost-effective technologies and market practices. A number of companies participating in the Better Buildings Alliance own property in the Northern Virginia market.

The Better Buildings Challenge supports commercial and industrial building owners by providing technical assistance and proven solutions for energy efficiency. The program also provides a forum for matching Partners and Allies to enhance collaboration and problem solving in energy efficiency. Both Partners and Allies are publically recognized for their leadership and innovation in energy efficiency and would likely be early adopters to a commercial building benchmarking and labeling program.

Administrative Requirements

Two important administrative requirements should be considered when organizing a voluntary building benchmarking and labeling program. First, identify an organization to play a leadership role. This could be a local department, a Chamber of Commerce, a chapter of a building trade organization, a non-government advocacy group, or other local organization. Second, the program sponsor should reach out to the local energy utilities and establish an easy process through which building owners may obtain utility data for participating buildings.

Ideally, one organization should be in charge of the program from start to finish, to avoid confusion and miscommunication between multiple partners.

Technology Infrastructure

There are multiple tools available for benchmarking a building's energy performance. The program administrator should select one tool for consistency across the program.

ENERGY STAR Portfolio Manager

U.S. EPA ENERGY STAR Portfolio Manager is a free online building energy benchmarking program developed by the U.S. EPA. Portfolio Manager generates ratings based on world-wide average energy performance. It measures the “as operated” performance of the building, as compared to asset scoring tools that only measure the building design. There are 80 benchmarkable building types, and 20 ratable building types. Portfolio Manager can be used to calculate an Energy Use Index on a 1-100 scale. This will provide a basis for a local competition as well as allow comparison with other similar buildings nationwide. Buildings with an Energy Use Index of 75 or greater may also be eligible for certification as an Energy STAR building.

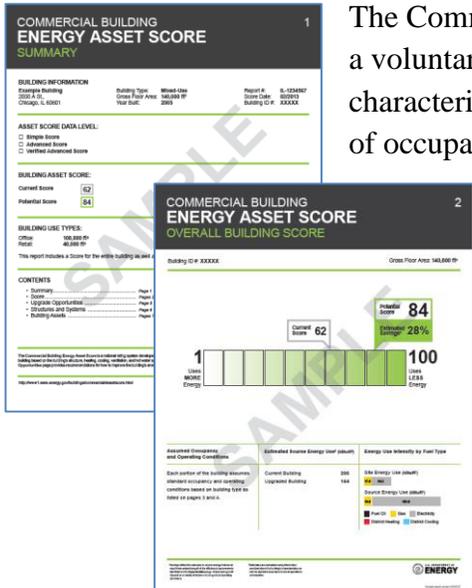


Energy IQ

Energy IQ is building performance benchmarking tool for non-residential buildings developed by Lawrence Berkeley National Lab. This program provides a greater level of detail compared to more generalized whole-buildings tools such as the ENERGY STAR Portfolio Manager. Energy IQ benchmarks energy use, costs, and features for 72 building types. It provides a carbon-emissions calculation for the energy consumed in the building, and the building's overall carbon footprint.



Commercial Building Energy Asset Scoring Tool



The Commercial Building Energy Asset Score is a national standard for a voluntary energy rating system evaluating the as-built physical characteristics of building and its overall energy efficiency independent of occupancy and operational choices. The Asset Scoring Tool will generate an asset score and system evaluations for the building envelope and mechanical and electrical systems. The Asset Scoring Tool also can be used to identify cost-effective upgrade opportunities, to help the building's owners and occupants gain insight into the energy efficiency potential of the building. This Commercial Building Energy Asset Score program is in the pilot stage as of 2013, and only Pilot Participants are granted access to the Asset Scoring Tool. Though it is not available to public, development of this program should be monitored as it moves forward.

Partner and Trade Organizations

Cooperation with partner and trade organizations would greatly help the success of the program. Possible partner organizations and their contact information are listed below.

Commercial Real Estate Development Association (NAIOP)

Website: <http://www.naiop.org/>

Phone: 703-904-7100

Fax: 703-904-7942

Address: 2201 Cooperative Way, Suite 300, Herndon, VA 20171 – 3034

Since 1967, NAIOP, the Commercial Real Estate Development Association, has become a leading organization for developers, owners and investors of office, industrial, retail and mixed-use real estate. NAIOP comprises 15,000+ members and provides strong advocacy, education and business opportunities through a North American network.

Apartments and Office Building Association (AOBA)

Website: <http://www.aoba-metro.org/>

Phone: 202-296-3390

Fax: 202-296-3399

Address: 1050 17th Street, NW, Suite 300, Washington D.C. 20036

The Apartment and Office Building Association of Metropolitan Washington (AOBA) is a membership organization representing commercial and multi-family residential real estate in the Washington D.C. area. Serving members since its establishment in 1974, AOBA continues to protect and enhance the value of its members' investments through effective leadership and advocacy, information exchange, and professional development.

AOBA members are owners or managers of commercial and multi-family residential properties, as well as companies that provide products and services to the real estate industry. The combined portfolio of AOBA's membership is approximately 170 million square feet of commercial office space and 245,000 residential units in the District of Columbia, Maryland and Virginia.

AOBA is the greater Washington DC affiliate of the Building Owners and Managers Association (BOMA).

Building Owners and Managers Association Internationals (BOMA)

Website: <http://www.boma.org/Pages/default.aspx>

The Building Owners and Managers Association International (BOMA) is a federation of 93 U.S. associations, 14 BOMA international affiliates. Founded in 1907, BOMA represents the owners and managers of all commercial property types including nearly 10 billion square feet of U.S. office space that supports 3.7 million jobs and contributes \$205 billion to the U.S. GDP. Its mission is to advance the interests of the entire commercial real estate industry through advocacy, education, research, standards and information.

BOMA International is a leading source of information on building management and operations, development, leasing, building operating costs, energy consumption patterns, local and national building codes, legislation, occupancy statistics, technological developments and other industry trends.

Marketing Plan

This marketing plan lays out a one year energy benchmarking competition. It uses a similar approach used in the Arlington Green Games. The timeline for the program would be as follows.



Pre-Launch Period

The most important part of organizing a program is preparation. During this time, an operator needs to identify building owners who would be willing to participate, especially those early-adopters mentioned above. Personally visiting these potential competitors is one of the most effective ways to stay in touch, although this method takes considerable time. Besides site visits, potential participants can be reached by direct phone calls or reaching out at stakeholder meetings. The key objective is to get program participants motivated.

Launch the Program

When launching the first program, an opening ceremony can be appropriate to celebrate the start. This is not recommended that a ceremony be repeated each year of the program since event like this requires considerable time, effort and money.

Running the Competition

During the competition, it is important to keep participants motivated through special events and recognitions. To raise awareness on “green building”, the program administrator can engage building owners by organizing site visits to recycling centers, utility companies and other facilities that can serve as good examples of high-performance buildings. This will help owners understand how energy is generated and distributed to the site, and how waste materials are treated. Familiarizing with such processes will increase transparency around energy use and waste.

Another way to keep program interest strong is to have training sessions on how to reduce energy use. Webinars might be helpful for building owners who cannot attend session. These regular meetings will help those motivated owners stay in touch with each other to encourage further improvements.

It is helpful to recognize those facilities that are doing well in the competition, through techniques such as on the official program Website, at program events, or through other form of advertisement.

Post-Competition

After the competition is completed, it is important to formally recognize those who have shown significant improvements through such techniques as facilitating press coverage in the local press or holding a celebration event with the Mayor, Board Chair or other local leaders. A sponsor could also offer special incentives or rebates as a way to congratulate participants' efforts. This could have an impact on the number of participants for future competition, particularly if this marketing draws the general public's attention. Conducting a case study on successful examples is another way to recognize high performers, and also to analyze why some buildings performed better than others.

Marketing Items

Marketing items can be a strong tool to attract people's attention to the program. Flyers, pens, posters, and giveaways are typical way to advertise. Not only these items help promote the event, but they also encourage participants to stay active in the competition. Customization of material can enhance its usefulness; for example, a template of the event flyer could be customized by building owners for their internal use. Depending on the types of building, the owner may want to focus on reducing materials waste, increasing recycling awareness, or energy savings efforts. For example, restaurants may want to encourage employees to more efficiently use equipment, while offices may want to encourage employees to recycle. By expressing the needs personalized to the building, the occupants will be more likely to put effort toward achieving a high-performing building.

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