



City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

Item 16.
COMMITTEE MEMORANDUM

TO: Land Use and Sustainability Committee

FROM: Rickelle Williams, Interim City Manager

DATE: June 10, 2024

**TITLE: CONSIDER ADOPTING A BUILDING ENERGY BENCHMARKING ORDINANCE
FOR GREENHOUSE GAS EMISSIONS**

HISTORY:

On January 25, 2024, the Sustainability Committee adopted a unanimous motion, urging the City to adopt an ordinance that would mandate the benchmarking of energy consumption and greenhouse gas emissions for existing buildings above a certain size threshold.

On February 21, 2024, the Mayor and Commission referred a discussion (C4 I) to the Land Use and Sustainability Committee to consider adopting a building energy benchmarking ordinance. This item was sponsored by Commissioner Laura Dominguez.

On March 19, 2024, the Land Use and Sustainability Committee discussed adopting a building energy benchmarking ordinance item and directed staff to explore incentives and a policy framework for energy benchmarking.

ANALYSIS:

Energy and water benchmarking is the practice of assessing and analyzing the energy and water use of a building and then comparing it to the building's past performance, similar buildings, or modeled simulations of a reference building at a certain standard. Benchmarking a building's energy use over time provides a mechanism for comparing energy use and related emissions, identifying opportunities for energy conservation improvements, and measuring performance of building upgrades. Energy benchmarking is an important strategy for measuring and tracking the energy performance of the largest buildings in a city. For building owners and property managers, benchmarking allows them to understand their energy usage and water consumption and makes it easier to identify inefficiencies and opportunities to reduce costs.

The City of Miami Beach has already taken steps to reduce energy consumption and greenhouse emissions. In addition to compiling an annual greenhouse gas (GHG) emissions inventory, which provides a breakdown of the GHG emissions community-wide and from government operations, the City has implemented several projects to reduce GHG emissions for municipal operations and adopted policies to mitigate the effects of climate change community wide. The City's efforts have focused on the sectors which are the greatest contributors of GHG emissions: energy consumption in buildings, transportation, and solid waste.

The Environment & Sustainability Department is currently working on the City's first Climate Action Plan (CAP). The goal of the CAP is to prioritize actions in these three sectors to reduce GHG emissions community-wide, in order to reach the City's emissions reduction goal of net-zero GHG emissions by 2050 which the City Commission unanimously adopted on April 21, 2021 through Resolution No. 2021-31664. One of the proposed actions in the draft CAP that has been identified as high priority is a building energy benchmarking policy. An energy and water benchmarking ordinance was identified as a high priority action due to its high GHG emissions reduction potential, additional co-benefits including cost savings, and low complexity for implementation.

The City of Miami Beach currently tracks electricity consumption of all City buildings, street lighting, and other electric utility accounts through EnergyCAP, an electric utility management platform. EnergyCAP is a repository of all electric utility bill data and provides features for tracking, analyzing, reporting, managing and archiving energy use. The platform helps to identify savings and issues, such as bill anomalies and changes in usage. The electricity data captured through EnergyCAP would support the energy benchmarking of municipal buildings.

Benchmarking Policies

Local and state governments have established benchmarking and disclosure policies as a tool to reduce greenhouse gas emissions and improve the energy efficiency of buildings that make up a majority of the whole building footprint in their communities. Most benchmarking ordinances are mandatory and some include a voluntary period before full implementation. In addition, some municipalities have launched voluntary programs to encourage energy and water benchmarking.

Benchmarking policies include the following essential components: annual benchmarking requirement, disclosure requirement, and enforcement. Policies may also include periodic re-tuning and/or retro-commissioning requirements. Re-tuning, or retro-commissioning, is the process of restoring and maximizing the efficiency of a building by auditing and tuning up all its major components, including heating, ventilation, and air conditioning (HVAC) systems, lighting systems, the building envelope, and central plant, if applicable. Benchmarking policies require buildings that meet certain thresholds to comply with all requirements. These thresholds are defined using building characteristics including building use types and building square footage. For example, some benchmarking ordinances require all buildings over a certain area to benchmark their energy and water consumption while other policies only require commercial, residential and/or public properties over a certain area to benchmark.

An analysis of building square footage has already been conducted. The following data of buildings in Miami Beach was analyzed and provided by Miami-Dade County based on their 2019 study of buildings throughout the county. Their analysis found that buildings 20,000 square feet and larger comprised only two percent of the total number of buildings but accounted for 43 percent of the total floor space across all buildings in Miami-Dade County. A third-party analysis by Autocase showed that the estimated electricity, natural gas, and water savings from a policy implemented at that threshold would provide significant positive outcomes at the building and overall community levels.

Miami Beach Building Analysis

Phase	Size threshold	Building count	Square footage	-
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1	200,000 square feet or larger	152	99,349,547	-
2	Between 200,000 and 100,000 square feet	82	11,640,523	-
3	Between 100,000 and 50,000 square feet	157	10,517,245	-
4	Between 50,000 and 20,000 square feet	481	14,687,212	
	Total	872	136,194,528	

The study found that there were 872 buildings in Miami Beach that are 20,000 square feet or larger. The following provides a breakdown by building type.

Main category	Subcategory	Building count	Square footage
Total		872	136,194,528
Multifamily (condo)		469	90,028,053
Hotel or motel		139	15,035,983
Commercial		125	6,344,095
Institutional		69	18,881,191
	<i>Municipality</i>	36	15,388,868
	<i>Hospital</i>	5	1,906,752
	<i>Board of instructions</i>	7	502,065
	<i>Religious</i>	11	400,900
	<i>Educational/scientific</i>	6	411,772
	<i>County</i>	1	25,565
Office		33	2,440,461
Transportation/utility		14	560,014
Vacant		9	248,748
Park/Conservation		8	318,872
Industrial		6	193,667

More than 50% of the buildings that are 20,000 square feet or larger are multifamily buildings. The next largest share of buildings is hotels at 16% and then commercial buildings at 14%.

The building stock in Miami Beach totals about 238,452,014 square feet. Based on the 2022 greenhouse gas (GHG) emissions inventory, the emissions due to energy consumption in buildings and the built environment was 707,995 metric tons of carbon dioxide equivalents (MT CO₂e). It can be estimated that buildings in Miami Beach emitted about 0.003 MT CO₂e per square foot on average, annually. The U.S. Environmental Protection Agency (EPA) found an average annual energy savings of 2.4% in an analysis of benchmarked buildings. Therefore, a benchmarking requirement for buildings above 20,000 square feet could reduce emissions by 9,705 MT CO₂e citywide. For perspective, that is equivalent to 62.2 acres of U.S. forests preserved in one year.

Mandatory Benchmarking Program Summary

The City of Miami Beach has always been on the leading edge of sustainability and has the opportunity to join other leaders in the country, and two cities in Florida (Orlando and Miami), to implement a benchmarking policy. Becoming an early adopter of a benchmarking policy would also benefit buildings in Miami Beach by providing time before any regional requirements are implemented to learn how to benchmark and comply. The City of Miami is the only neighboring municipality that has implemented an energy and water benchmarking policy and could provide a framework for the implementation of a similar policy. In June 2021, the City of Miami adopted a building energy and water consumption benchmarking and retuning ordinance. To streamline regional requirements and facilitate compliance for building owners and property managers, a mandatory policy should reflect regional benchmarking requirements.

The City of Miami's benchmarking ordinance requires commercial and multifamily buildings 20,000 square feet and above to benchmark their electricity, natural gas, and water consumption every year. The City of Miami imposes fines of \$250 per day for a first-time offense or \$500 per day for a repeat violation of their ordinance. Their ordinance went into effect in a phased approach, as follows:

- Buildings 100,000 square feet or larger: initial compliance required by June 30, 2022
- Buildings between 50,000 and 99,999 square feet: initial compliance required by June 30, 2023
- Buildings between 20,000 and 49,999 square feet: initial compliance required by June 30, 2024

In the City of Miami, the implementation of their benchmarking ordinance requires one full staff person to manage this program and one part-time staff person to support. The City of Miami procured Touchstone IQ as the energy and water benchmarking solutions provider, which provides the software platform for the data processing and tracking, along with support for a help desk. The cost of the software program was an estimated \$500,000 and includes technical support for building owners and managers. We requested a proposal from Touchstone IQ, based on 800 buildings, to receive an estimated cost for the benchmarking software and help center management. The initial year would also include set-up fees and cost about \$186,000 to \$216,500, depending on the add-on options selected. This estimated cost is based on the number of buildings in the city that are 20,000 square feet and above. This threshold can be adjusted, as needed, and this estimated cost may shift accordingly.

To support the implementation of an energy and water benchmarking ordinance, a nominal fee of \$125 could be charged for processing of the benchmarking data submissions. Based on the number of buildings in the city that are 20,000 square feet and above, about 800 buildings would need to benchmark. The nominal fee of \$125 paid by 800 buildings totals \$100,000 collected to help cover the cost of the software required to process and track the benchmarking data. This type of fee structure could be customized to the needs of the City. For example, the City could cover the cost the first year and have participants cover that fee for ensuing years. Another example would be to require commercial properties above a certain size to benchmark in the first year while providing an incentive for voluntary participation for other property types, and then charge a nominal fee and require benchmarking for all properties in subsequent years.

Touchstone IQ is a platform focused on energy regulatory compliance and has specific modules for governments to execute benchmarking policies end-to-end. As part of the services they deliver for the City of Miami, Touchstone IQ provides a help center support to answer emails and requests from building users, offer customer service training and tools, and provide one-on-one appointment tools. The cost for these services depends on the number of buildings that would

need to comply with a given benchmarking ordinance, along with the licensing fee for the software and any additional add-on features. Touchstone IQ also tracks non-compliance along with other information about buildings that must comply with their ordinance.

Compliance mechanisms and strategies can be crafted to best suit the building stock characteristics and community needs. The structure for enforcing benchmarking requirements can be tailored to the type of buildings, with one structure for commercial properties and one structure for residential properties. Some municipalities issue a one-time fine while other municipalities issue an accruing fine until a building owner complies. For example, the City of Atlanta (GA) imposes a \$1,000 fine each year of non-compliance. The City of Chicago issues a \$100 fine for the first violation and \$25 per day for continued non-compliance. The City of Boulder (CO) imposes a fine of \$0.0025 per square foot up to \$1,000 per day of non-compliance.

Some municipalities utilize other tools for enforcement that are not fee-based. The State of New Jersey (NJ) makes compliance with benchmarking a prerequisite for participation in any of the NJ Board of Public Utility programs, as well as utility energy efficiency programs. The City of Minneapolis, MN may consider failure to comply within 45 days of written notice a good cause for the denial, suspension, revocation, or refusal to issue a rental license, certificate of commercial building registration, or business license. The City of Pittsburgh, PA publicly lists covered buildings that do not comply on the city website as being non-compliant. Some municipalities even enforce through harsher penalties such as Kansas City, MO which may proceed with a civil suit. One option that can be explored is having different enforcement structures for different types of buildings, such as having fines for commercial buildings and an alternative enforcement mechanism for residential buildings.

One important factor for the success of a benchmarking policy is ensuring data quality. This includes the availability of whole building data and ensuring that data that is submitted is accurate. A platform, such as Touchstone IQ, would be necessary to ensure data quality and flag data points that are outliers. Such a platform would also be beneficial to facilitate the process of requesting whole building data. The City's electric utility, Florida Power and Light (FPL) does not currently provide whole building data to building owners but it has established a pilot program for properties in the City of Miami that must comply with the benchmarking requirement. A similar arrangement would be required for buildings in Miami Beach.

A draft benchmarking ordinance, as requested by the Committee, is included at Attachment A.

Voluntary Program Summary

There are some examples of local governments that have implemented voluntary benchmarking programs, including Miami-Dade County, FL; New Orleans, LA; British Columbia, CA; and Rochester, Roseville, and St. Paul, MN. These programs rely on incentives to encourage buildings to benchmark their energy and water consumption. Although incentives are offered, the compliance rate for voluntary programs is typically low. Low participation leads to less useful data since a limited number of data points are collected. This decreases the overall success of a benchmarking program because of the constrained analysis to determine the efficacy of GHG reduction achieved through the benchmarking program.

Common incentives provided through voluntary benchmarking programs include:

- Virtual workshops that cover topics such as energy efficiency, water efficiency, and no- and low-cost upgrades.

- Technical assistance from experts including help with benchmarking utilizing the Energy Star Portfolio Manager platform.
- Peer-to-peer networking which provides the opportunity for participants to learn about successes and lessons learned from other participating buildings.
- Prizes for select buildings such as a building energy and water audit.

Another option is for the City of Miami Beach is to promote an existing voluntary program. Miami-Dade County has an existing voluntary program, Building Energy 305 (BE305), so the City of Miami Beach could promote this existing program and provide additional resources to participating buildings throughout the city.

Miami-Dade County's BE305 Challenge focuses on improving building performance and reducing operational costs for large buildings. Incentives include free trainings, educational opportunities from industry experts, peer-to-peer networking, public recognition, and the opportunity to win free building energy and water audits. There is an annual awards ceremony to recognize participants. There are currently 146 buildings representing 37.8 million square feet of floor space in 14 municipalities and the Unincorporated Municipal Service Area (UMSA) participating in the program. A total of 12 buildings in Miami Beach have signed up for the BE305 Challenge, including two (2) municipal buildings.

Interested buildings can register for the BE305 Challenge by completing the interest form found on the [BE305 Information Hub](#). Information requested include building owner contact information, building size, building age, and type of large equipment used. Once a participant has registered their building(s), they can participate in workshops and receive technical assistance to benchmark their building(s). Participants that complete energy and water benchmarking for their registered building(s) share that data with Miami-Dade County through Energy Star Portfolio Manager and are then eligible to win one of the building energy and water assessments. At the end of each cohort, participants are invited to an award ceremony to celebrate the accomplishments of the cohort.

Feedback was provided by a Miami Beach BE305 participant that the technical assistance received through the program was the most beneficial part of the program. The participant's condo building in Miami Beach took advantage of available rebates such as: updating water fixtures with rebates from Miami-Dade County and receiving an irrigation system audit through the UF/IFAS program. In addition, the participant's building was one of the selected buildings to receive an energy and water assessment. An energy and water assessment is a comprehensive inspection, survey and analysis of energy and water consumption of a building.

Miami-Dade County estimates \$100,000 for technical assistance for its BE305 Challenge program to provide two (2) to three (3) trainings and eight (8) building energy and water assessments for each cohort. Participating buildings throughout the county are eligible to win one of the limited building energy and water assessments each cohort cycle.

Potential incentives for buildings in Miami Beach to benchmark their energy and water use include prioritizing funding to provide technical assistance to assist with benchmarking, prioritizing funding to provide energy and water assessments, providing technical assistance to help buildings apply for existing rebate programs and other incentives, showcasing buildings that are benchmarking on the City website, and providing a discount for City fees.

Incentives Research

The Committee has requested staff to explore a reduction in cost incentive, for example through Business Tax Receipt (BTR) savings. The City of Miami Beach currently has 1,329 multi-family residential buildings registered with a BTR. The City currently generates approximately \$140,000 annually from apartment building BTR tax revenues. A reduction of 5% in our BTR taxes for the 643 apartment buildings, would result in a credit of \$7,000 in total for these multi-family residential dwellings. The City generates approximately \$162,000 from annual Fire Fees billed on BTR renewals. A reduction of 5% in our Fire Fees for condominiums and apartment buildings would result in a credit of \$8,100 in total for these multi-family residential dwellings. These savings are minimal and may not be the best incentive for participation in a benchmarking program.

The success of voluntary benchmarking programs depends on participation from interested buildings. Based on feedback from other municipalities and a participant in BE305, the largest incentive for buildings to participate is the availability of beneficial technical assistance. Mandatory policies have a greater impact across a community because buildings are required to benchmark so the data captured represents a more significant portion of the entire building stock. Furthermore, mandatory policies that are implemented, managed, and tracked through platforms such as Touchstone IQ receive the highest rates of compliance and provide cities with the most accurate data to gather a better understanding of energy and water use throughout their building stock.

While Miami-Dade County's BE305 Challenge is a voluntary program, the County is working on developing a benchmarking ordinance which would require buildings 20,000 square feet and larger to benchmark their electricity, natural gas, and water consumption every year. This ordinance would apply to all municipalities in addition to unincorporated areas. There is no timeline for when the County's ordinance would be adopted, but the City of Miami Beach could become a regional leader and early adopter by implementing a benchmarking ordinance. In addition, this would benefit buildings in Miami Beach by providing time before a countywide ordinance is implemented to learn how to benchmark and comply. Further considerations such as a grace period with no enforcement could equip buildings in Miami Beach to comply with future requirements.

CONCLUSION:

This information is presented to the members of the Land Use and Sustainability Committee for discussion. To create an effective and successful benchmarking program with both environmental and economic advantages for the City of Miami Beach and the property owner and management community, the prioritization of resources are required. The Administration recommends funding the software required for buildings to participate in the program and a position to launch and manage the program. If the Committee concurs, next steps include a motion to the full City Commission for funding prioritization within the budget process.

Applicable Area

Citywide

Is this a "Residents Right to Know" item, pursuant to City Code Section 2-14?

Yes

Does this item utilize G.O. Bond Funds?

No



Departments

Environment & Sustainability

Strategic Connection

Environment & Infrastructure - Reduce greenhouse gas emissions and heat.

ATTACHMENTS:

Description		Type
	Referral Memo from 2.21.24 Commission	Memo
	Draft Benchmarking Ordinance	Other