

Building Energy Benchmarking

The first step to saving energy in an existing building is to identify a baseline or “benchmark” of current energy consumption. Building energy benchmarking allows a building to be compared to itself over time, to other buildings of the same use type or to an applicable energy standard.

Buildings that benchmark their energy use regularly **reduce their energy consumption by 2.4 percent per year** on average.

To benchmark an existing building’s energy use, two kinds of information are required:

1. **General Building Characteristics** (location, size, occupancy, use, age, etc.)
2. **Utility Energy Consumption Information** (electricity, natural gas/propane, steam usage, etc.)

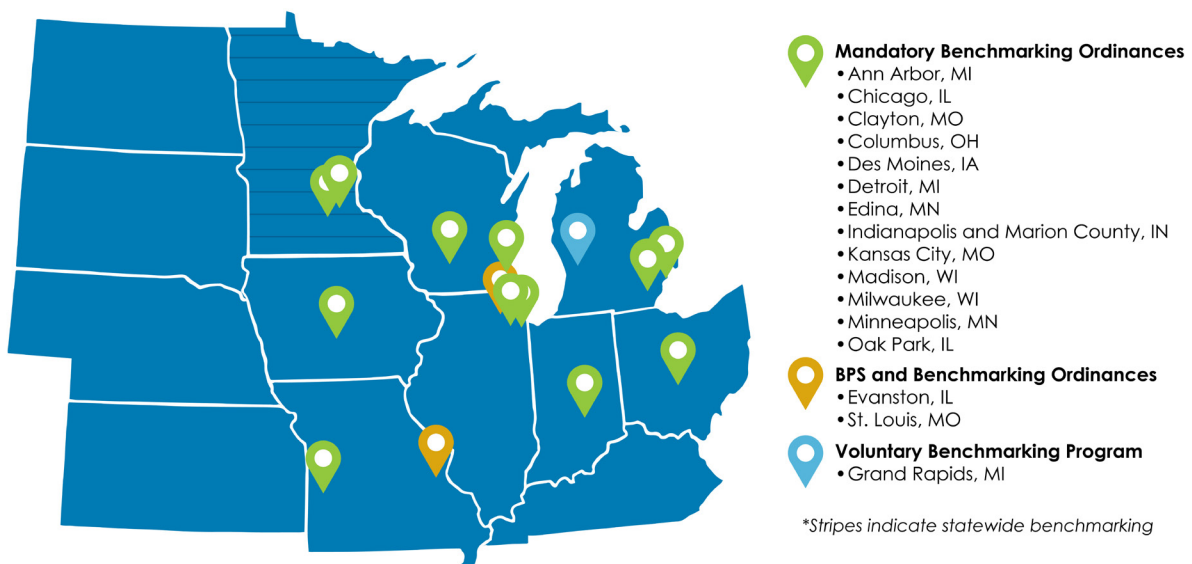
BENCHMARKING POLICIES

Benchmarking policies are a tool that municipalities can use to reduce community-wide emissions. The policies require buildings over a certain size to track and report their energy through ENERGY STAR® Portfolio Manager®; buildings are usually phased into the requirement based on size, typically starting with tracking the energy consumption of publicly owned buildings.

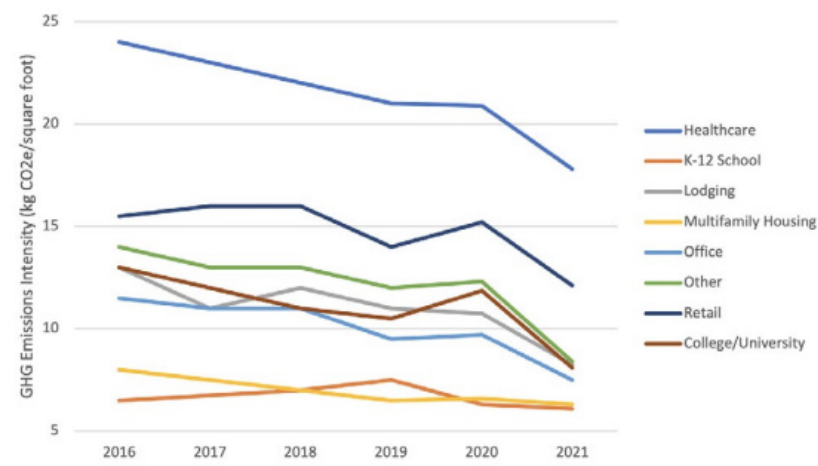
Benchmarking policies can then act as a steppingstone to a building performance standard (BPS) policy, which requires building owners to not only track their properties’ energy use but also meet specific energy efficiency targets.

Midwest Successes

MEEA has provided technical assistance to Midwest cities including Minneapolis, Chicago, Kansas City and Detroit to develop and implement their benchmarking ordinances. By developing an ordinance, a city obtains utility data to track the annual energy use of its built environment, ultimately contributing towards the city’s overall energy or greenhouse gas reduction goals.



MEDIAN GHG INTENSITY FROM 2016-2021



Chicago's policy, which has been in place since 2013, now covers 3,600 buildings. Among the buildings that reported for three consecutive years, greenhouse gas emissions decreased 22%, totaling one million metric tons (CO₂e).

Median GHG Intensity among buildings benchmarked from 2016-2021. Source: [2021 Chicago Energy Benchmarking Report](#).

WHY TRACK ENERGY USE?

By creating an energy tracking or benchmarking process, building owners and managers are better able to gauge the performance of their properties. In addition, this data can be used to:

- Create more accurate energy budgets and energy goals
- Identify underperforming buildings and pinpoint specific energy reduction measures
- Verify savings completed by energy service companies or within performance contracts
- Earn recognition in ENERGY STAR®, LEED and/or local challenge programs

WHO BENEFITS FROM BENCHMARKING?

Benchmarking policies reduce energy use and utility bills by increasing awareness of energy consumption. Beyond this, benchmarking can accomplish additional benefits for the following stakeholders:

Building Owners

- Increase understanding of the energy performance of their buildings
- Determine realistic energy savings targets
- Improve and increase occupancy in multifamily and commercial buildings
 - Awards like ENERGY STAR® certification, for example, are proven to increase and maintain occupancy

Facility Managers

- Increase efficiency of building equipment and optimize operation schedules
- Uncover incorrect utility data, billing and meter reading issues

Tenants

- Better understand potential tenant contributions toward energy savings
- Utility bill savings

Utilities

- Better understand trends in the energy use of neighborhoods, campuses or a portfolio of buildings to create incentives or other types of support programs
- Identify low-performing buildings to conduct outreach and provide assistance

City or State Administrators

- Empower buildings and public works staff to make shrewd, more informed energy management decisions and targeted investments for public buildings
- Access to data that can inform elected officials and administrative staff of future policy solutions