

GRAND RAPIDS 2030 DISTRICT

ACHIEVING ENERGY & CARBON GOALS

*For Grand Rapids Existing
Commercial and Industrial Buildings*



WEST MICHIGAN

GRAND RAPIDS
2030
DISTRICT

2024

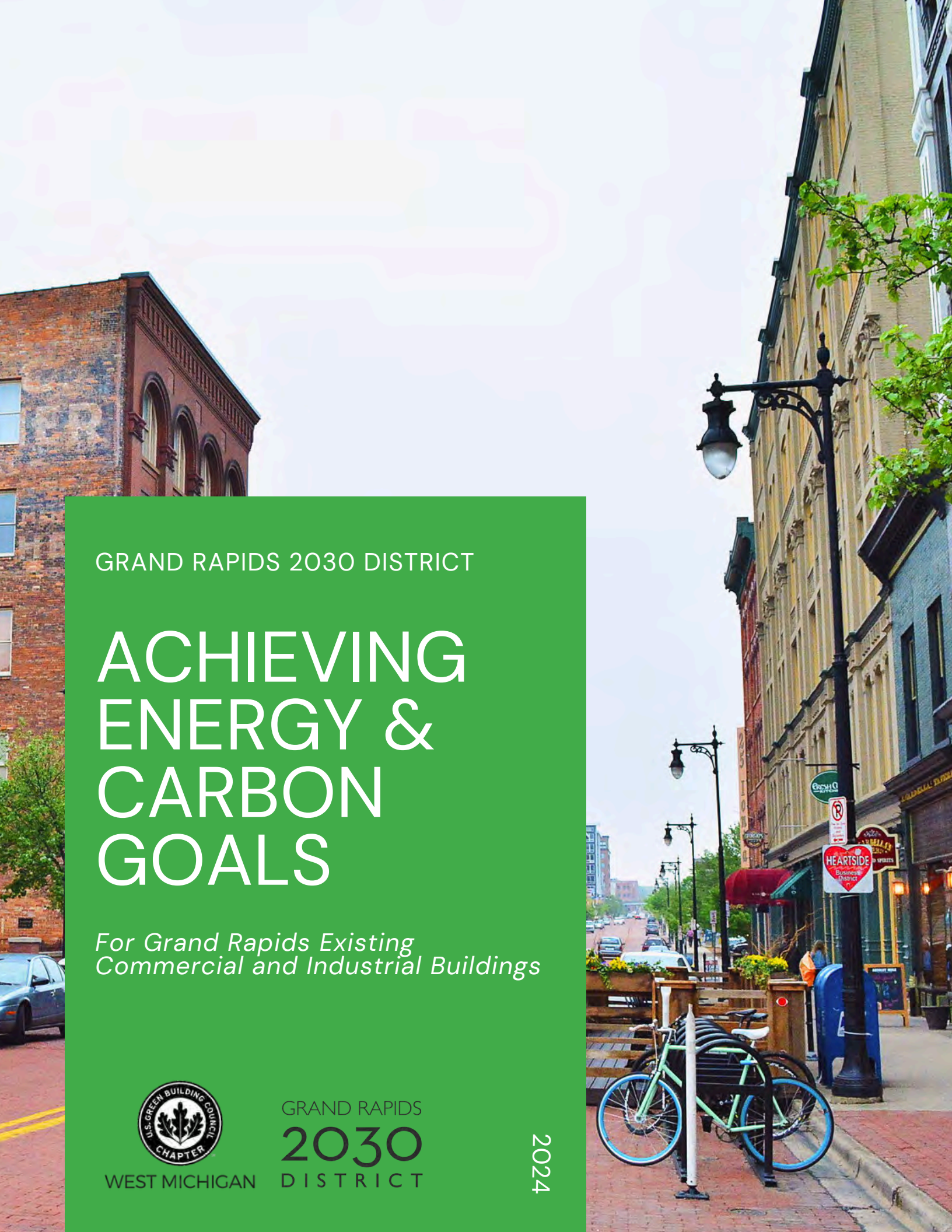


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This would not have been possible without the insight and efforts of PPG members and peer reviewers.

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INTRODUCTION

The Grand Rapids 2030 District is committed to **reducing carbon emissions by 50% from 2003 levels by 2030 and net zero by 2040 in all sectors**. These goals come directly from Architecture 2030. While each 2030 District focuses on water, transportation, and building emissions, each district puts a different amount of emphasis on each area. The GR2030 District has primarily worked on commercial building emissions reductions, focusing on energy efficiency and electrification. [Architecture 2030](#) has updated the goal to zero emissions today rather than 2040. We need to reduce emissions now.¹

In November 2022, the city of Grand Rapids adopted the community-wide science-based target of **62.8% emissions reduction per capita by 2030 and net zero by 2050 from 2019 levels**. This target is from the [Grand Rapids Greenhouse Gas Emissions Inventory Report](#). The building sector accounts for 63.6% of emissions. The commercial & industrial buildings together account for 35.8% of emissions within Grand Rapids.²

The State of Michigan has released its [MI Healthy Climate Plan](#) which “lays out a pathway for Michigan to reach **100% carbon neutrality by 2050 with 52 percent GHG emissions reductions by 2030 as an interim target**. Achieving the 2030 goal will require Michigan to reduce annual GHG emissions by approximately 92.95 million metric tons of CO2 equivalent based on today’s emissions levels.” The plan also states, “to reach our 2030 goals of reducing emissions relating to heating Michigan homes and businesses by 17 percent by 2030, Michigan must reduce end-use emissions related to heating Michigan homes and businesses by approximately three percent per year from now to 2030.”³

Each target from the State, City, and GR2030 District is slightly different because of the varying baselines but they are all focused on achieving zero emissions.

Net Zero

According to IPCC, Net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period.

Essentially, net zero means any emissions need to be offset by removals to get to zero.⁴

Carbon Neutral

In the MI Healthy Climate Plan, carbon neutrality is defined as any carbon dioxide released into the atmosphere is balanced by an equivalent amount being removed.

[Source](#).⁵

Zero Carbon

According to [Architecture 2030](#), “Achieving zero emissions (carbon) from new construction will require energy-efficient buildings that use no on-site fossil fuels and are 100% powered by on-site and/or off-site renewable energy.”

Zero carbon means no on-site emissions. All energy use/generation must be supplied by renewables.⁶

How do we achieve these goals?

The previous page outlined goals from the state, a municipality, and a non-profit program. What does this mean for achieving these goals? Where does the reduction come from? The answer is all of us. In the State of Michigan, energy codes set forth by the State determine minimum energy efficiency levels for commercial building systems. Local code officials are required to enforce the state energy requirements which means that achieving energy efficiency levels beyond code is currently up to the building owner & project teams. Lowering energy usage is essential to reaching emissions goals as they are directly related.

The Grand Rapids 2030 District is a local resource that has been helping buildings achieve energy efficiency beyond code since 2015. The District has specialized in educational events and [webinars](#), uplifting resources, working with industry partners, collaborating with government and utilities, and managing grants to promote energy use and emissions reductions.

We achieve these goals by working on an individual level to decrease energy usage in our homes and buildings, advocating for government and utility incentives, and encouraging the clean energy goals of the utilities. Together, we will achieve the 2030 goals.

This guidebook is meant to

- Act as a localized resource and equip Grand Rapids businesses and project teams to be community leaders in energy efficiency
- Simplify the process of reducing building energy load to make renewable energy and decarbonization goals attainable
- Support owners/projects trying to achieve emissions reduction goals

Why focus on building energy load/consumption?

- Building energy load reduction & management helps achieve federal, state, local, and project-based goals by lowering energy demand, reducing system size, and relieving stress on the grid. This translates to lower carbon emissions for your building.
- Help reduce the size/load of HVAC systems, affording the ability to consider multiple options and efficiency levels.
- Help reduce building operating costs, directly impacting your bottom line.
- Reduce the size of solar panels/renewable energy needed to cover total energy usage.

Limitations

Any numbers used in this guidebook are for general estimations and may not be applicable to every project as scopes vary widely but can be used as a foundation. Readers will not find specific brand or manufacturer endorsements, but rather the standards which the owner must be mindful of while choosing a service provider or technology. The guide is written based on information that is currently available at this time, with the geographic scope of Grand Rapids, Michigan. This is not all-encompassing of energy and carbon information. It is intended to be an intro guide for those interested in reducing energy and carbon emissions. It is intended to be a living document.

Why Energy Management?



BUILDINGS ACCOUNT FOR

42 %

OF CO₂ EMISSIONS IN
THE UNITED STATES

The building sector accounts for 42% of CO₂ emissions in the United States and building operations account for 27%. **How buildings use energy directly relates to our GHG emissions.**

In addition to lowering emissions, smart energy management is smart business. Treating energy as a manageable metric will keep your overhead low and your business competitive in the market.⁷

Energy Efficiency + Electrification + Renewable Energy

is the formula for achieving these goals.

The building sector will play a crucial role in achieving energy reduction targets, as buildings represent a large portion of emissions.

According to Architecture 2030, achieving zero emissions from the existing building stock will require **leveraging building intervention points** to increase the amount of energy upgrades. Those intervention points **occur in the same cycle as planned major renovations or capital improvements**. These are moments when integrating energy efficiency measures is key.⁷



BUILDING OPERATIONS
ACCOUNT FOR

27 %

OF CO₂ EMISSIONS IN
THE UNITED STATES

Note: *Given the carbon intensity of the grid and the average cost of electricity in Michigan, it can be more carbon-intensive and expensive (operationally) to electrify equipment in some buildings. That is why energy efficiency projects and pairing electrification with renewable energy are important. As the formula above demonstrates, each component works together. We are seeing electrification success in multifamily buildings right now.*⁸

Energy Management Basics



Data Tracking
Energy and carbon



Energy Assessments



Implementing Changes



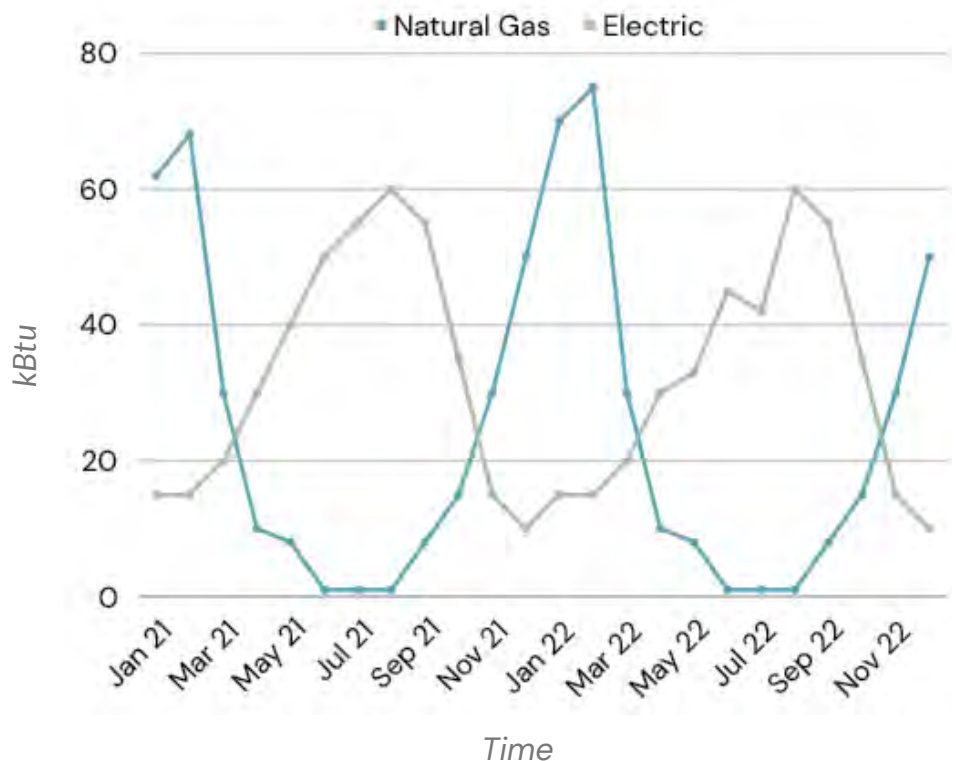
Verify Savings

ENERGY BENCHMARKING

What is benchmarking?

Benchmarking is the practice of comparing the measured performance of a device, process, facility, or organization to itself, its peers, or established norms, with the goal of informing and motivating performance improvement. When applied to building energy use, benchmarking serves as a mechanism to measure energy performance of a single building over time, relative to other similar buildings, or to modeled simulations of a reference building built to a specific standard (such as an energy code).⁹

Link to [Department of Energy benchmarking page](#).



Benchmarking is simply calculating the baseline energy usage for your building. Depending on historical utility data availability or old bills on hand, this can be from any year you choose. If this is your first time benchmarking, gathering at least 2 years of natural gas, electricity, steam, and water bills is recommended. You can gather more if you want to look at a certain year for a baseline, but DTE and Consumers generally keep 2 years of data on hand.

Benchmarking is typically referred to in calendar year instead of fiscal year, but it is up to you and your organization on the dates you choose as your starting point.

HOW TO BENCHMARK

1

How to obtain utility bills

In the Grand Rapids area, you can contact DTE or Consumers for your bills. If you have an online account through either utility, you can typically download them yourself within the portal. If you have steam as a fuel source, you can contact Vicinity for usage information. You can contact your water provider, likely the City of Grand Rapids, for usage data or pull it from an online account.

2

I have my bills, now what?

Once you have collected all of the necessary usage data, you are ready to upload it into a spreadsheet or an online platform. We recommend using [ENERGY STAR Portfolio Manager](#)[®]. It is a free tool from the Environmental Protection Agency (EPA) and allows you to enter detailed property information and all of your utility data. It will then give you metrics and graph out your usage.¹⁰

[Get Started with the Benchmarking Starter Kit.](#)¹¹

3

Data is uploaded. Now what?

After your data is uploaded, you can get your Energy Use Intensity (EUI), ENERGY STAR Score, GHG Intensity, and other metrics. You will start to understand how your building stacks up against other buildings of the same use type.

ENERGY STAR certifications are best known for appliances, but you can also certify your building. This platform will tell you if your building is eligible for an ENERGY STAR Certification.

More on this on the next page.

4

Benchmarking Resources

If you need additional assistance benchmarking your building, the Grand Rapids 2030 District is available to help. You can also talk to energy professionals in the area who might already be working on a project with you.

Visit the [Grand Rapids 2030 District Automated Benchmarking Service](#) page.¹²

Important Energy Metrics

After uploading energy usage into ENERGY STAR Portfolio Manager®, you will be able to see energy use metrics. These numbers help you understand where your building stacks up against other buildings of the same property type. Important energy metrics include the ENERGY STAR Score and Energy Use Intensity (EUI). The EUI can be broken down into Site and Source EUI.¹³

Metric	Mar 2022 (Energy Baseline)	Jul 2023 (Energy Current)
ENERGY STAR Score (1-100)	57	64
Source EUI (kBtu/ft ²)	70.2	64.0
Site EUI (kBtu/ft ²)	42.2	38.6
Energy Cost (\$)	2,325.52	2,738.63
Total (Location-Based) GHG Emissions Intensity (kgCO ₂ e/ft ²)	3.9	3.5



ENERGY STAR Score

The ENERGY STAR Score is a measure of how well your property is performing relative to similar properties when normalized for climate and operational characteristics. The score also takes into consideration hours of operation and building size. This allows for buildings in Grand Rapids, MI to easily be compared to buildings across the country.

The scores range from 1-100. To be eligible for ENERGY STAR certification for your property, you must reach a score of 75 or higher. This puts you in the top 25% for building energy usage based on your building type.¹³

Energy Use Intensity (EUI)

Energy Use Intensity (EUI) quantifies **energy (kBtUs) per square foot**. To calculate your EUI, first convert your utility units to kBtUs, and sum them. If you are using ENERGY STAR Portfolio Manager®, the platform does this for you. If you are doing it manually, use [this resource \(pg. 3\)](#) for conversion factors. For context, a highly energy-intensive building would generally be 300 and above. "Zero Net Energy-ready" buildings have a source EUI of 25. The [ENERGY STAR website](#) displays Median EUIs by the market sector.^{13 14 15}





Site EUI

The Site EUI is your total *site* energy use divided by the square footage of your building. This is an intensity metric for what the building actively consumes at the site/building level. **This is the energy usage total from your utility bills and does not consider line losses.**¹³

Source EUI

Source energy represents **the total amount of raw fuel that is required to operate the building. It incorporates all transmission, delivery, and production losses.** By considering all energy use, the score provides a complete assessment of building energy efficiency. According to the EPA, “source energy is the most equitable unit of evaluation for comparing different buildings to each other.”¹⁶

Source energy is a great metric to use when comparing systems. The [Energy Star Technical Reference Guide to Source Energy](#) gives an example of this.¹⁷

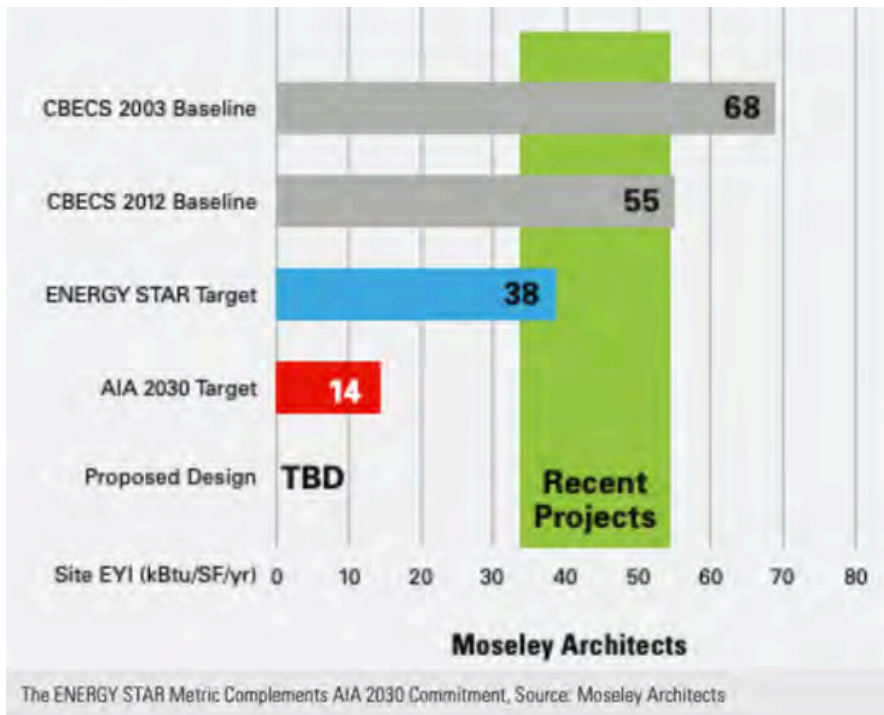


“Weather Normalized”



Site and source energy can both be “weather normalized” which means the weather in your area is considered. Taking weather fluctuations into account allows you to analyze your energy usage on a level playing field. If your usage goes way up in the summer because it was hotter than an average year, this is taken into consideration. The same can be said if you needed to heat way more in the winter due to extreme cold.¹³

EUI Targets



The target was set using the ENERGY STAR Target Finder tool which adjusts the target automatically based on a number of variables (weather, fuel type, operational hours, etc.). The green bar indicates the EUI (Annual EUI) of other recent projects, showing clients where their project falls in comparison.

Setting targets based on energy is accomplished by understanding your Energy Use Intensity (EUI). The EUI target values will vary depending on your building type, but the EUI metric can be used across many building types. After tracking at least 12 months of energy usage you will know your EUI and can start benchmarking using these goal-setting metrics. **This is useful for both new construction projects and existing building projects.**

CBECS Baseline

The Commercial Buildings Energy Consumption Survey (CBECS) is a “national sample survey that collects information on the stock of U.S. commercial buildings, including their energy-related building characteristics and energy usage data (consumption and expenditures).” The 2003 and 2012 baselines are two different survey years to compare your building’s energy use to. The 2003 baseline is what is used in the 2030 District’s goal for carbon reduction by 2030.¹⁸

ENERGY STAR

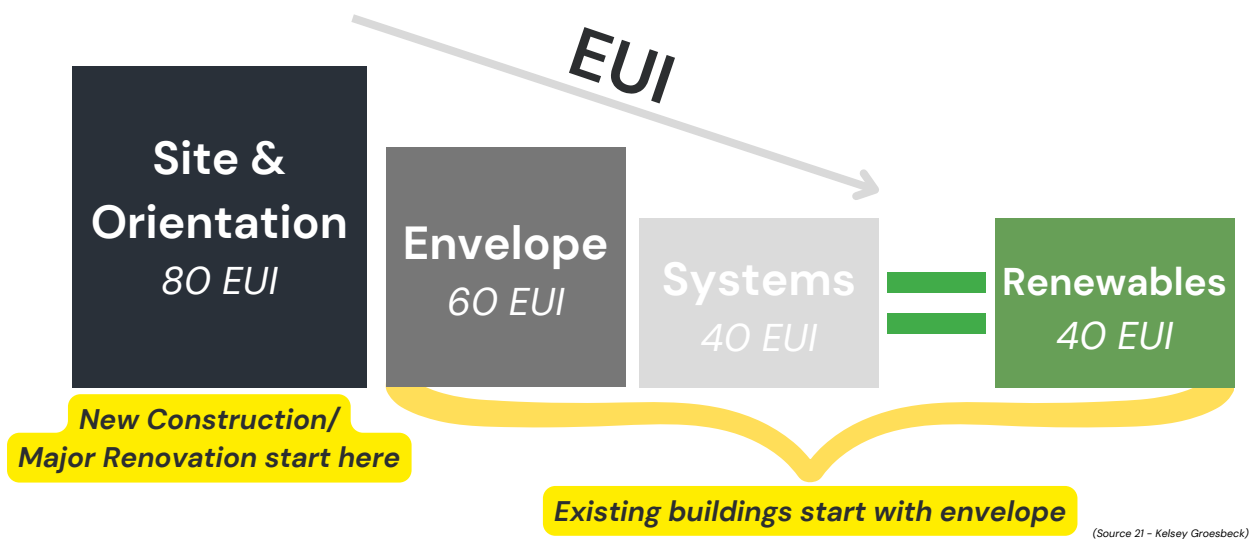
The ENERGY STAR Target is just the ENERGY STAR Score that you want your building to achieve. If you are aiming for certification, you want at least 75. There are specific buildings that can achieve an ENERGY STAR Score and Certification. That list can be found here.¹³

AIA 2030

The 2030 Challenge can be met by establishing an EUI baseline and target using Zero Tool, integrating energy-efficient technologies and systems, incorporating on-site renewables, and engaging in iterative energy modeling throughout the design process. Visit the 2030 Palette for low/no-cost passive design strategies to achieve maximum energy efficiency.¹⁹

EUI & Assessing Renewable Energy Potential

The Energy Use Intensity (EUI) target is also important when considering **on-site renewables**. This diagram shows the recommended path for completing **energy load reduction before installing solar panels**. First, seal the thermal envelope of your building, then increase system efficiencies, and then analyze the solar potential. Reducing the size of the solar system should reduce the project cost and could help you stay within the size restrictions from Consumers Energy.



Envelope

The Envelope of your building provides a thermal barrier to prevent energy losses. This includes the foundation, roof, walls, windows and doors. All of these components can contribute to losing heat. Typically, existing buildings have a harder time fixing the foundation and adding insulation to walls. Therefore, most recommendations for envelope upgrades consist of new windows, weather stripping, and adding insulation where you can.²¹

Systems

Heating Cooling and Ventilation (HVAC) systems are what keep your building temperature comfortable, conditioning the air in your space to your desired temperature and maintaining good indoor air quality. These systems include furnaces, boilers, AC units, rooftop units, heat pumps, etc. These can be ducted, packaged, or split systems. The units vary with their efficiency level, source fuel, and benefits. Your building's total energy usage affects the size of your HVAC system (cooling or heating load required of the system).²²

GREENHOUSE GAS EMISSIONS

This section outlines GHG emissions management. The goals listed in the introduction mention emissions and carbon. They are linked but can be confusing when used interchangeably. Below is a breakdown of GHGs and carbon-specific accounting.

Greenhouse Gas Emissions¹³

Greenhouse Gas (GHG) Emissions are the carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) gases released into the atmosphere from **energy consumption** at the building.

GHG emissions are typically expressed in **carbon dioxide equivalent (CO₂e)**, a universal unit of measure that combines the quantity and global warming potential of each greenhouse gas and converts it to a carbon equivalent value.

Emissions are reported in four categories, each is available as a total amount in metric tons (Metric Tons CO₂e) or as an intensity value in kilograms per square foot (kgCO₂e/ft²):

Carbon Specific Accounting²³

Carbon accounting is broken down into three scopes addressing direct and indirect emissions.

Scope 1 includes direct (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles).

Scope 2 emissions are indirect and associated with the purchase of electricity, steam, heat, or cooling. They physically occur at the generation facility but are accounted for in an organization's GHG inventory as it is related to building use.

Scope 3 is a category that allows for all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company but occur from sources not owned or controlled by the company. Some examples include extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

Operational vs. Embodied Carbon²⁴

As it relates to buildings, **embodied carbon** refers to the GHGs from **building materials** (the manufacturing, transportation, installation, maintenance, and disposal). **Operational carbon** refers to the GHGs from **building energy consumption**. Operational carbon is easily measured/converted from building energy usage. Embodied carbon requires a carbon value of each step for building materials.

HOW TO CALCULATE

1

Benchmark Energy Usage (see page 5&6)

Emissions can be calculated from fuel use when immediate monitoring is not practical. If you have benchmarked your building's energy consumption, it is easy to get your annual CO₂e number. ENERGY STAR Portfolio Manager® will give you this number in the Metrics Summary. You can also enter fuel data into the [EPA Greenhouse Gas Equivalencies Calculator](#).²⁵

3

How does my building compare to other buildings?

Unlike energy metrics, carbon data is still an emerging metric to measure a building's performance. Currently, there is no standard way to benchmark your building's carbon emissions against buildings of similar use. On the horizon is the EPA ENERGY STAR NextGen certification which incorporates GHGs and renewable energy.²⁶

It is important to benchmark to establish your own baseline for comparison.

2

Metrics to use¹³

Total GHGs – carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) gases released into the atmosphere from energy consumption at the building.

Greenhouse Gas Intensity (GHGi) – Your total GHGs per square foot

CO₂e (carbon dioxide equivalent) – a universal unit of measure that combines the quantity and global warming potential of each greenhouse gas and converts it to a carbon equivalent value.

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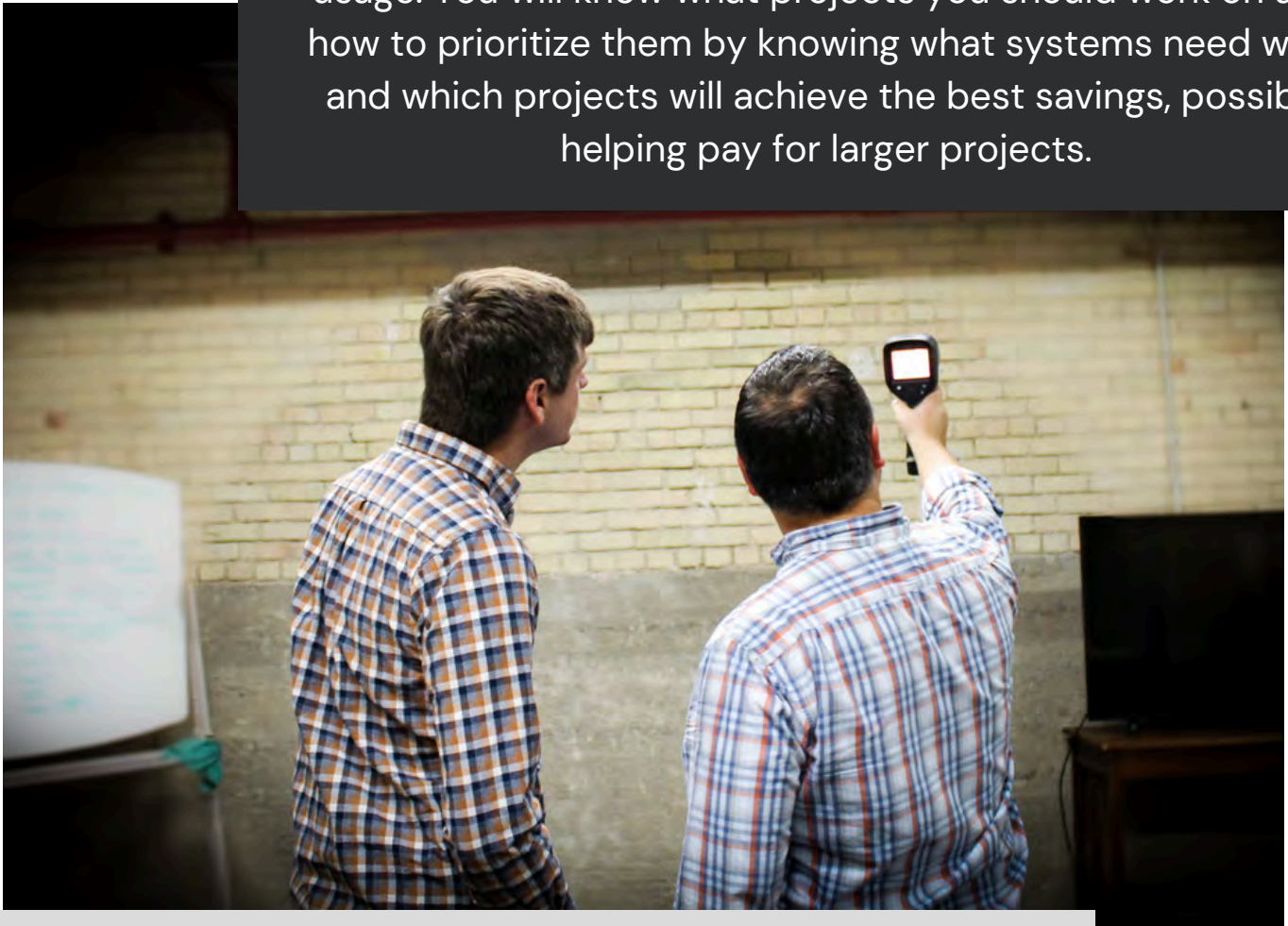
What platforms can help me manage carbon?

- ENERGY STAR Portfolio Manager® (ESPM)¹⁰
- GHG Protocol²³
- Environmental Protection Agency (EPA) Calculator²⁵

BUILDING ENERGY ASSESSMENTS

AKA Energy Audits

After benchmarking, it might be time for an energy walkthrough/audit/assessment. This is a great step if you want a deeper understanding of your building's energy usage. You will know what projects you should work on and how to prioritize them by knowing what systems need work and which projects will achieve the best savings, possibly helping pay for larger projects.



What is an energy audit?

An energy audit is an analysis of a building that indicates how you can reduce energy consumption and costs. Its insight can lead to significant savings on your business's utility bill and Operation & Maintenance (O&M). Audits can provide a detailed map of your energy use, reveal energy usage patterns, and identify saving opportunities.

What are the different audit types & building assessment options?

PRELIMINARY

ASHRAE AUDIT LEVELS ²⁷

Preliminary Energy Use Analysis:

- Most basic energy audit
- Analysis of historic energy use and costs.
- Energy use is typically benchmarked
- Could do by yourself

Level 1 Walk-Through Analysis:

- The basic starting point for building energy optimization
- Involves interviews with select facility staff
- A review of utility bills or other operating data
- A walkthrough of the facility
- The goal is to identify glaring areas of energy inefficiency.
- The data is compiled and used to complete a preliminary report detailing low-cost/no-cost measures and potential capital improvements for further study in subsequent audits.

Level 2 Energy Survey & Analysis:

- Detailed energy calculations and financial analysis of proposed energy efficiency measures.
- Energy consumption is broken out by end-use, identifying areas that present the greatest efficiency opportunities.
- Utility rates are analyzed to determine if there are rate change opportunities.
- Key building representatives are interviewed for insights into building operational characteristics, potential problem areas, and to define financial and non-financial goals of the audit.

Level 3 Analysis of Capital Intensive Modifications:

- Engineering analysis of the potential capital-intensive projects identified in the ASHRAE Level 2 Analysis.
- More detailed field data gathering and more rigorous analysis.
- Existing utility data is supplemented with sub-metering of major energy-consuming systems and monitoring of those system's operating characteristics.

This level of detail is adequate for getting a baseline for your building and setting goals.

This level of detail is adequate for prioritizing energy efficiency projects and to assess whether a more detailed audit is necessary.

This level of detail is adequate to justify project implementation.

This level of detail is typically reserved for complex commercial and industrial buildings.

How to get an Energy Assessment

OPTION	OVERVIEW	DETAILS
<p>Self Audit</p>	<p>For a self audit, collect 12–24 months of utility data and upload it into a spreadsheet or a benchmarking program such as ENERGY STAR Portfolio Manager® (ESPM). Using ESPM allows you to enter other building characteristic information. It is also recommended to organize a list of HVAC systems & types of lighting. Another tool is Audit Template from the DOE.^{10 28}</p>	<p>Gives an overview of your facility and will identify low-hanging fruit.</p>
<p>Work with your utility</p>	<p>DTE Business Energy Consultation²⁹</p> <p>Consumers Energy free consultation with an Energy Advisor³⁰</p>	<p>Gives an overview of your facility and will identify low-hanging fruit.</p>
<p>Small Business Association of Michigan</p>	<p>The Small Business Association of Michigan offers free energy assessments for their members. They service businesses within DTE and Consumers Energy territories with 500 employees or less. You can participate in this program if you have one or both of your utility accounts with DTE or Consumers Energy.³¹</p>	<p>SBAM performs an ASHRAE “Level 1.5” audit. They look at lighting, insulation, roofing, windows, compressors, & project funding options.</p>
<p>Hire an Auditor</p>	<p>Selecting the right consultant/auditor is important. For a list of Grand Rapids 2030 Professional Partners who are experts in energy and carbon reduction please visit the Grand Rapids 2030 District member page on the website.³²</p>	<p>Private auditors can perform any type of audit from a walkthrough to a 1.5 to a level 3.</p>

After having all of your data benchmarked, you will be able to see how your building stacks up against other buildings of similar use type. You can also see which of your buildings are the worst performing. It sets you up to schedule the audit that makes the most sense for individual buildings. It also allows you to ask educated questions along the way.

The biggest reason people hire a private auditor over a free service is for the in-depth analysis that a building owner or facility manager might not have the time or expertise for. Some auditors also offer turn-key projects that result from the audit.

Visit usgbcwm.org for more energy audit resources

Other Options for Building Assessments

RETRO COMMISSIONING



Retro-commissioning is another approach to energy management focusing on controls rather than replacing equipment. You might benefit from this service if you have a building management system with set-point issues.

See the eligibility requirements for the [DTE Retro-Commissioning Program \(RCx\)](#) and the [Consumers Energy Program](#) ^{34 35}

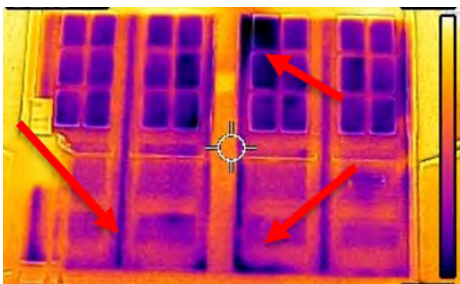
STRATEGIC ENERGY MANAGEMENT



SEM is designed to help large commercial and industrial customers continuously improve their energy performance and reduce energy waste. DTE offers technical support and financial incentives to qualified customers. Note: availability is on a first-come, first-served basis.

[Link to DTE webpage](#) ³⁶

BUILDING TESTS



[Blower Door/Air Leakage Testing](#) - this process is very similar to residential blower door testing but uses more fans and maybe multiple blower doors. ³⁷

[Thermal Imaging](#) - this process is also used to see the biggest temperature differentials, assessing air leakage. ³⁸

COMPRESSED AIR AUDIT



If you use compressed air in your facility, this option is for you. Leaks can often waste as much as 20%-30% of the compressor's output.

Link to [fact sheet from U.S. DOE](#) ³⁹

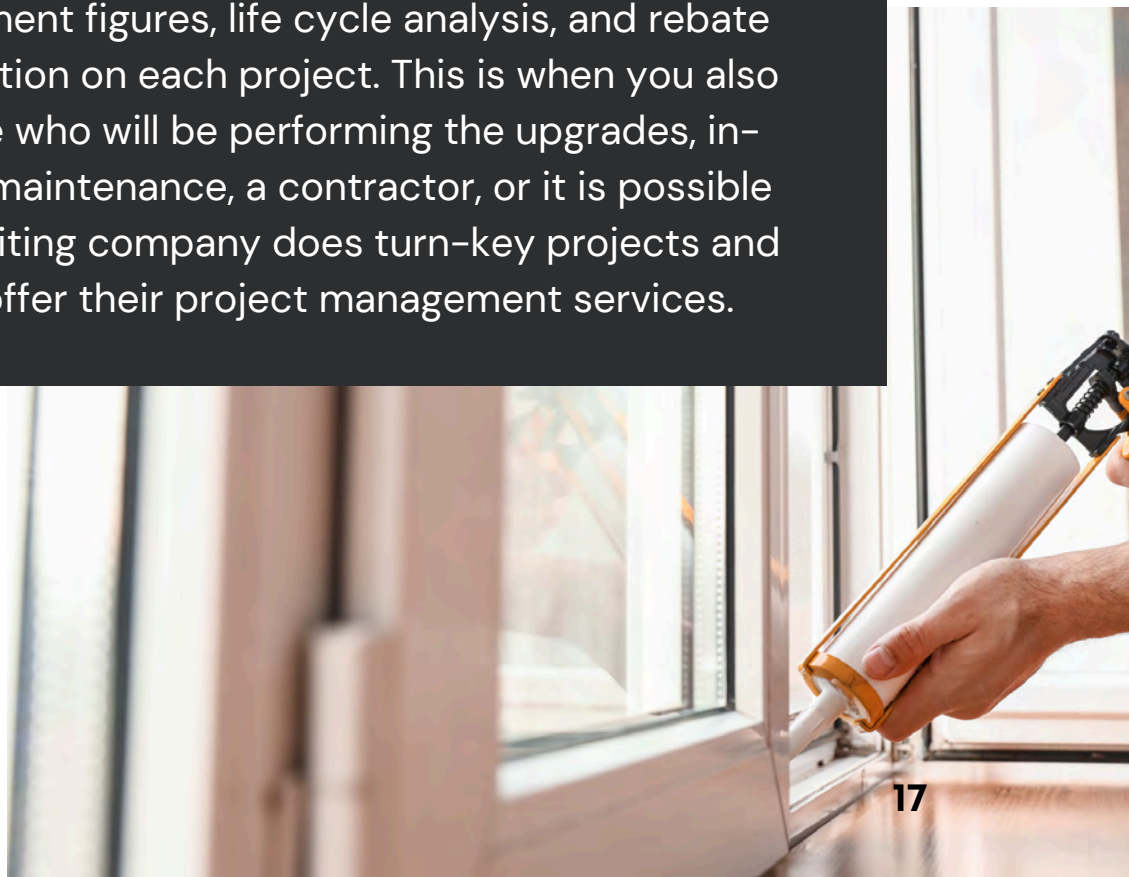
Links to rebates through [Consumers Energy](#) and [DTE](#) ^{40 41}

AFTER THE AUDIT

Implementing Energy Conservation Measures



After the audit, it is time to implement the recommended Energy Conservation Measures. Through this process, you will gain a prioritized list of energy conservation projects. Depending on the level of detail, you may receive return on investment figures, life cycle analysis, and rebate information on each project. This is when you also decide who will be performing the upgrades, in-house maintenance, a contractor, or it is possible the auditing company does turn-key projects and can offer their project management services.



5

Energy Measures to Consider



LIGHTING

- LEDs
- With how frequently lights are used and often times left on, LEDs can provide major energy savings



BUILDING CONTROLS

- Occupancy / Vacancy sensors for lighting or HVAC equipment
- Demand Control Ventilation
- Widen temperature setpoint bands
- Make sure controls match set points



SYSTEM EFFICIENCIES

- If it is time to upgrade your HVAC equipment, consider increasing the efficiency of the unit. If not, your equipment might benefit from a tune-up.
- Pumps, fans, variable frequency drives, motors, and refrigerants can all affect the efficiency of your equipment
- Choose ENERGY STAR rated appliances



BUILDING ENVELOPE

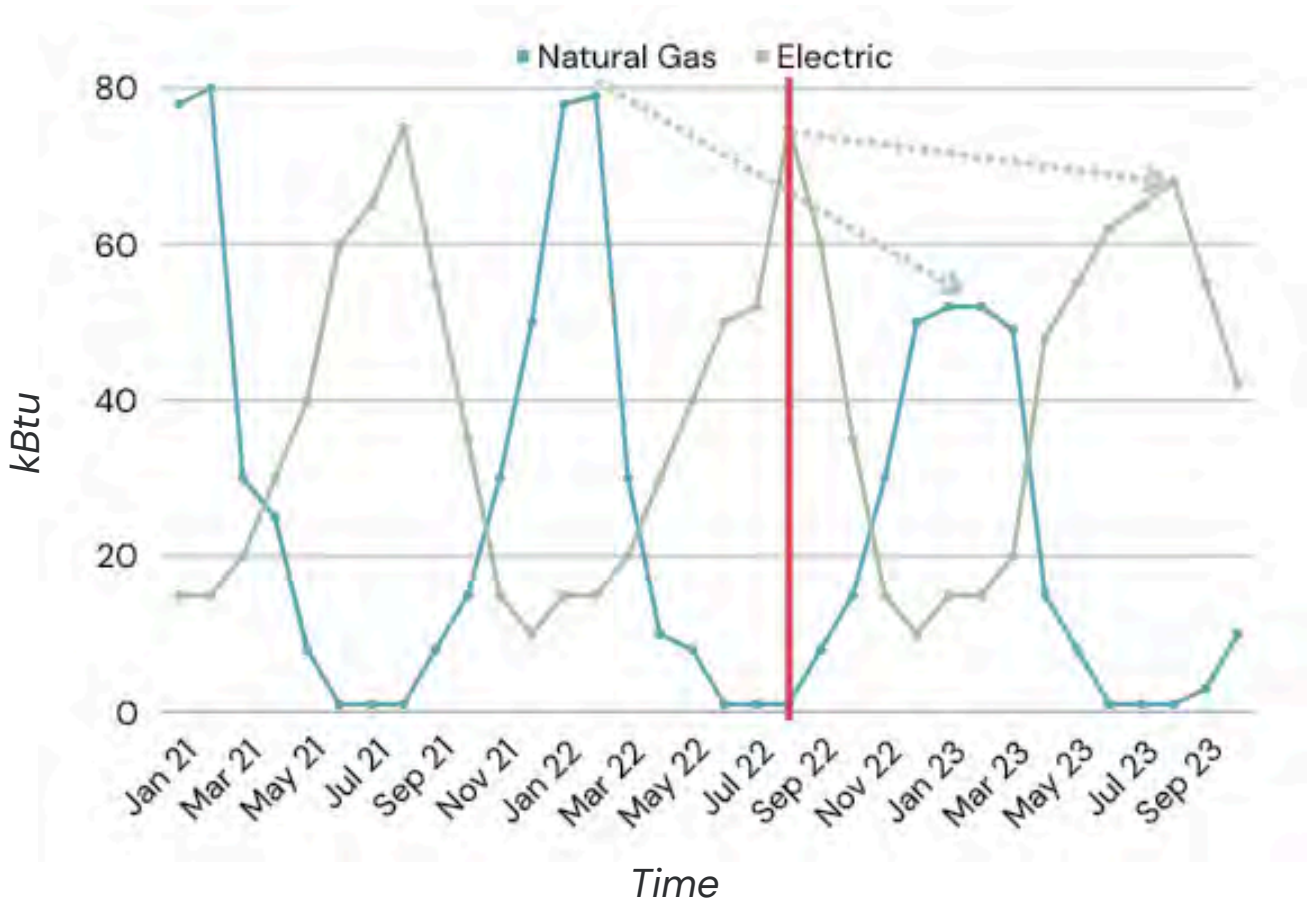
- Weatherstripping
- Insulation
- Windows
- Roofing
- Sealing leaks



RENEWABLE ENERGY

Consider installing on-site renewable generation such as geothermal heat pumps or solar.

VERIFY SAVINGS

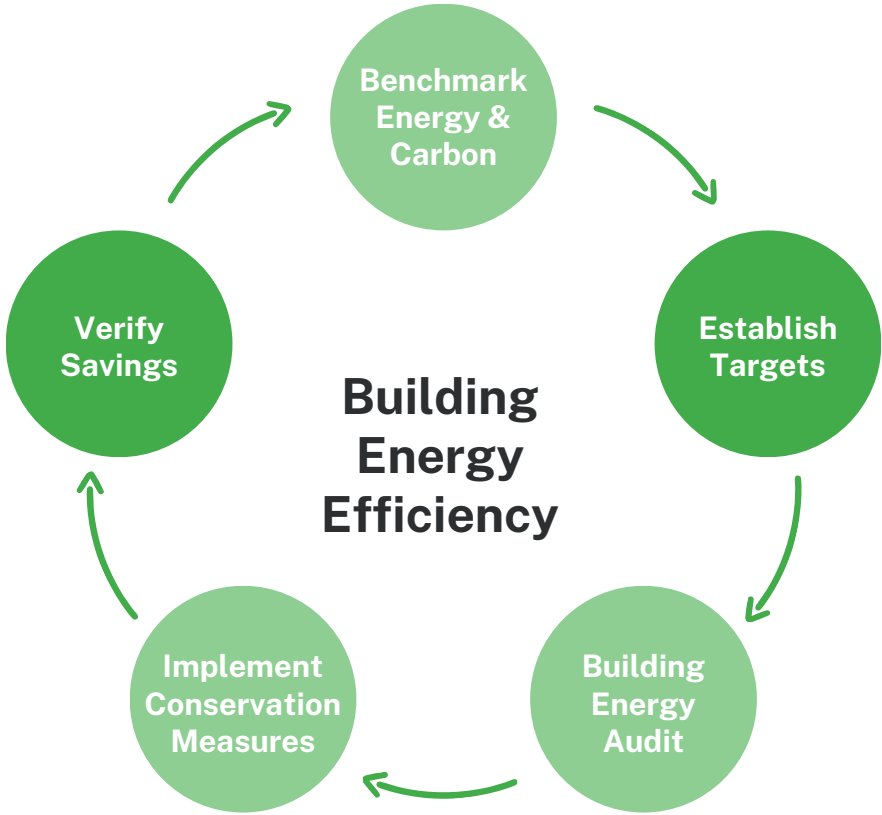


— ECMs Implemented

After implementing an Energy Conservation Measure (ECM), you should be seeing savings in energy usage and utility bill costs. This is why benchmarking your building is so important, you can set goals and see the savings after taking action.

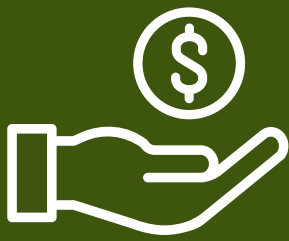
The graph above exemplifies energy benchmarking, noting where ECMs were implemented. You might see the same with a cost vs. time graph.

The Energy Efficiency Cycle



It is important to keep an eye on your energy usage, even after you complete an audit & implement recommended action items. **You can't manage what you don't measure.**

PROJECTS	FREQUENCY	DETAILS
Benchmark	At least annually	You can track energy usage as frequently as you want, but you should be benchmarking or analyzing it at least annually.
Carbon Tracking	At least annually (with Energy).	Your carbon footprint can be calculated from your energy usage. That is why energy benchmarking is so important for analyzing emissions.
Energy Audit or other assessments	When you notice increasing trends or every 10 years	Energy Audits are not needed every year. Regular tracking of energy usage and system efficiency prevent you from having to audit your building frequently.



Financial Resources

REBATES



A rebate is like cash back **after a conservation measure is complete**. You have to show proof of the change and energy savings. Consumers Energy and DTE both have rebate programs. Some municipal utilities also have their own programs but can differ from the CE and DTE in what they incentivize. Rebates are generally given for measures that generate savings beyond energy code mandates.

Consumers Energy

- [Commercial and Industrial Rebates](#)
- [Multifamily Page](#) and [Multifamily Catalog](#)
- [Small Business Rebates](#)

DTE

- [Commercial and Industrial Rebates](#)
- [Multifamily](#)
- [Small Business Rebates](#)

IRA & TAX INCENTIVES

The Inflation Reduction Act added and expanded federal tax credits and incentives related to energy efficiency and renewable energy.

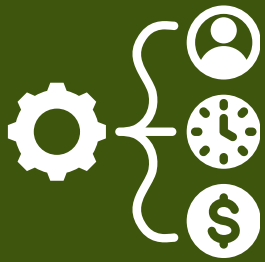


- [179D](#) - “enables building owners to claim a tax deduction for installing qualifying systems in buildings”
- [Credits and deductions for businesses and other entities](#)
- [Credits and deductions under the Inflation Reduction Act of 2022](#)
- [Energy efficient commercial buildings deduction](#)



OTHER

- [MI Saves](#)
- [Lean & Green MI - Property Assessed Clean Energy \(PACE\)](#)
- [USGBC - WM Compiled list of funding opportunities Page](#)
- [EGLE Funding Opportunities Page](#)
- [Database of State Incentives for Renewables & Efficiency® \(DSIRE\)](#)



General Resources

ENERGY BENCHMARKING

- [ENERGY STAR Portfolio Manager®](#)
 - [Getting Started Kit](#)
 - [Portfolio Manager YouTube Demonstration Series](#)



UNDERSTANDING EMISSIONS

- [USGBC-WM Zero Carbon Resource Page](#)
- [EPA - Overview of GHGs](#)
- [EPA - Carbon Equivalencies Calculator](#)
- [ENERGY STAR GHG Technical Reference](#)

BUILDING CERTIFICATIONS

There are many green building certifications available like LEED, WELL, ILFI, Passive House, EnergyStar, etc. Here is a short [list of Green Building Standards](#). Also, check out the [Business Case for Green Buildings](#).



LOCAL ENERGY AUDITORS

- [GR2030 Professional Partners List](#)

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