

A photograph of solar panels installed on a roof, viewed from a low angle looking up. The panels are dark blue with white grid lines. The sky is blue with some white clouds. The image is slightly faded to allow text to be overlaid.

# State of Minnesota Enterprise Energy and Building Greenhouse Gas Emission Action Plan

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2025 - 2030

Office of Enterprise Sustainability  
DEPARTMENT OF ADMINISTRATION

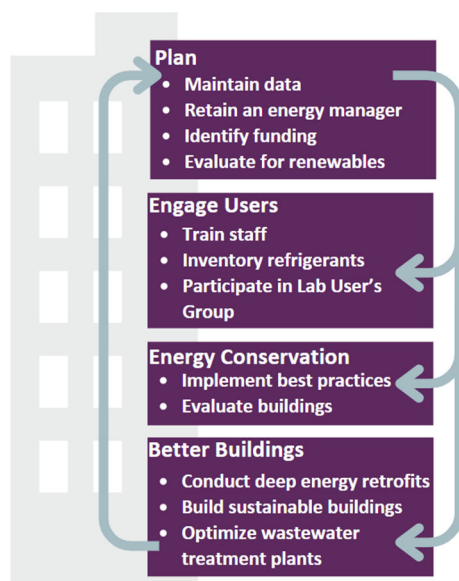
**mn** DEPARTMENT OF  
ADMINISTRATION  
ENTERPRISE SUSTAINABILITY

## EXECUTIVE SUMMARY

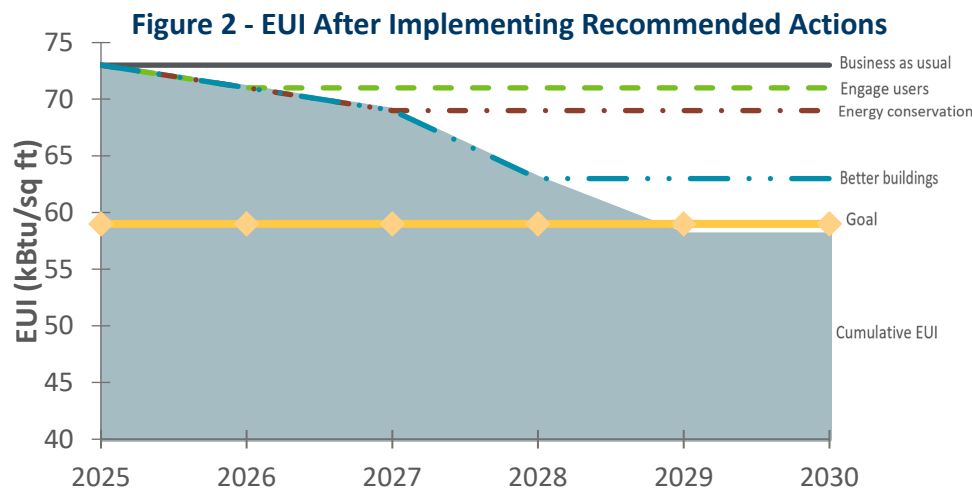
The *2025-2030 Energy and Building Greenhouse Gas Emission Action Plan* provides the State Enterprise (the Enterprise) with actions all agencies can employ to reduce energy use and greenhouse gas emissions from buildings. These actions can be grouped into four categories:

1. **Planning.** Planning is foundational to a successful energy program. Plans use data to understand energy use, set goals, inform renewable energy system sizing needs, estimate project costs, identify funding sources, and align these efforts with the operational priorities and strategic goals. Examples of planning efforts include long-term capital or facilities improvement plans.
2. **Engaging facility users and operators.** Training and outreach provide staff and building users with tools to manage efficient buildings and participate in lowering energy use.
3. **Energy conservation:** Implementing industry standard best practices and technologies prevent and reduce energy use to avoid utility costs and drive down energy use.
4. **Building better buildings:** A well designed and managed building avoids costs and lowers energy use and greenhouse gas emissions because they have efficient envelopes and/or have used appropriate fuel switching measures.

**Figure 1 – Agency Actions**



Annually, all agencies in the Enterprise are required to submit a sustainability action plan to the Office of Enterprise Sustainability (OES). In their plan, agencies are required to address the relevant agency actions detailed in this plan. Targeting the most effective strategies for each agency will achieve the energy use goal and lower greenhouse gas emissions. Figure 2 shows how energy use intensity (EUI) changes with implementing the recommended actions.



*Figure 2 shows the EUI reduction for each action category. Individually, the reductions from each cannot achieve the goal, but the cumulative reductions actions surpass it.*

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## INTRODUCTION AND PURPOSE

The *2025-2030 Energy and Building Greenhouse Gas Emission Action Plan* establishes an aggressive yet achievable guide for Enterprise to meet sustainability goals by reducing energy use and greenhouse gas emissions from buildings. Executive Order (EO) 19-27 directs the Enterprise, defined as the 23 cabinet agencies and the Metropolitan Council, to achieve sustainability goals in six focus areas: energy, greenhouse gas emissions, water, solid waste, procurement, and fleet. Relevant to this plan, the energy goal is to reduce building energy use per square foot, also called energy use intensity (EUI), 30% by 2030 compared to a 2017 adjusted baseline. The greenhouse gas emission goal is to reduce greenhouse gas emissions 50% by 2030 compared to a 2005 baseline.

Since EO 19-27 was signed in 2019, the Enterprise has been working toward the goals; however, there is still progress to be made. This is especially true as we transition from strategies that are relatively lower cost and lower effort, like replacing incandescent light bulbs with efficient LEDs, to larger-scale projects, like upgrading buildings to digital controls, installing renewable energy systems, and fuel switching.

This plan summarizes energy use and greenhouse gas emissions at the Enterprise level and provides guidance to state agencies for their internal planning. The Enterprise Sustainability Energy, Water, and Greenhouse Gas Workgroup was instrumental in developing this plan and will continue to tailor the agency actions to meet state agencies' needs, respond to evolving technology, and adhere to federal, state, and local mandates.

This plan is a companion to other enterprise action plans, creating a coordinated pathway to achieve the sustainability goals.

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## CONTEXT AND BACKGROUND

This plan applies to the Enterprise and its nearly 4,000 owned and leased buildings that cover roughly 35 million square feet from the City of Luverne to the Arrowhead Region and everything in between.

The Office of Enterprise Sustainability (OES) sits within the Department of Administration and assists the Enterprise in achieving the sustainability goals. OES does this by the following methods:

- Providing data reporting tools and annually publishing agency and enterprise data, trends, and progress toward the sustainability goals.
- Conducting enterprise-level planning and assisting with agency-level planning.
- Implementing projects and providing technical assistance to agencies.
- Championing sustainability by advocating for sustainability in funding discussions and sharing best practices.

EO 19-27 requires the Enterprise agencies to make progress toward the goals and participate in sustainability efforts by fulfilling the following responsibilities:

- Designating a sustainability coordinator.
- Participating in workgroups and sharing best practices.

- Creating and implementing an annual sustainability action plan.
- Reporting energy, water, solid waste, and fleet data.

This *2025-2030 Energy and Building Greenhouse Gas Emission Action Plan* describes 1) actions that OES will take to assist agencies and 2) actions agencies should take to reduce energy use and greenhouse gas emissions.

## SCOPE

This plan focuses on the following three overall methods to reduce energy use and greenhouse gas emissions and avoid costs at state buildings, and they should be completed in this order:

1. **Reduce:** Reducing energy use through energy conservation measures (ECMs) and efficiency should be completed first because it avoids costs through lower utility bills and shows building operators the amount of energy needed to power the building. Reduction strategies are typically updating the building components, like the building envelop, lighting, and automation controls, and engaging energy users through initiatives like plug load management, employee education, and training.
2. **Refuel:** Once efficiency and conservation strategies are implemented, heating and cooling systems should be transitioned from liquid fuels, like natural gas or propane, to electric sources, like heat pumps. Electric sources are generally more efficient and can be offset with renewable energy. Fuel switching also lowers greenhouse gas emissions because the electric grid continues to be powered by more renewable energy to meet the Carbon-Free by 2040 legislation.
3. **Renew(ables):** State agencies should increase renewable energy generation at their buildings with onsite solar, geothermal, wind, or hydrogen, and add battery storage. This will further reduce utility costs and lower greenhouse gas emissions. Installing renewables should happen last so the renewable systems are sized appropriately to meet the facility's operational needs.



## DATA

The Enterprise reduced EUI 13% in 2023 compared to the adjusted baseline year of 2017. Overall energy use has remained essentially unchanged since 2017, but square footage has increased slightly (1.4%), which lowers the EUI and signals that the Enterprise's new construction is more energy efficient than older buildings.

In 2023, the Enterprise reduced greenhouse gas emissions 38% since the calculated baseline year of 2005. The reductions were driven primarily by the increase in renewable energy sources powering the electric grid. Refer to Appendix 1 for 2023 data and [sustainability.mn.gov](https://sustainability.mn.gov) for current data.

OES assists the entire Enterprise in achieving the sustainability goals by advocating for enterprise-wide needs and providing resources that can be used at different agencies, regardless of their mission, size, or types of buildings they occupy.

As part of this plan, OES will prioritize the following actions.

**I. Commit to staff and their development.**

- a. Advocate for an energy manager position at agencies that are large energy users.
- b. Provide tools for energy managers to establish an energy team and support the teams as they develop and progress.
- c. Coordinate and promote training opportunities for physical plant directors, facility maintenance staff, energy managers, sustainability coordinators, lab users, and other appropriate staff through the Building Operators Certification, My Green Lab Ambassador, or similar programs.
- d. Develop and distribute template messaging for energy reduction and conservation strategies, including organizing an enterprise-wide Climate Week Lunch and Learn.

**II. Assess enterprise performance.**

- a. Report annual data.
- b. Use data to identify trends, barriers, and opportunities.

***Enterprise Data***

*OES publishes enterprise and agency-specific sustainability data annually at [sustainability.mn.gov](https://sustainability.mn.gov).*

**III. Support efficient and sustainable building design and construction, including in remodel projects.**

- a. Work with internal and agency partners to implement the Buildings, Benchmarks, and Beyond (B3) Guidelines, including the Sustainable Building 2030 (SB2030) Energy Standard, on all projects that receive general obligation bond funding.
- b. Work with internal and agency partners to update, promote, and ensure applicable enforcement of the [Predesign Guidelines](#).
- c. For projects that the B3 Guidelines/SB2030 Standards do not apply, establish a lifetime payback period policy for heating and cooling systems or renewable energy systems instead of a traditional 5- or 10-year payback period.

**IV. Develop renewable energy resources owned by the State of Minnesota.** Like other renewable energy credit programs, agencies would be able to subscribe to these renewables to offset consumption and cost, meet SB2030 Energy Standard requirements, or achieve the greenhouse gas emissions reduction goal.

**V. Advocate for funding and support agency legislative and bonding funding requests.** Funding sources include the OES managed Energy Efficiency Revolving Loan Fund, Inflation Reduction Act (IRA) Elective Pay tax incentives, Minnesota Climate Innovation Finance Authority (MnCIFA), Guaranteed Energy Savings Program (GESP), and legislative and programmatic changes, like updating the SB2030 Energy Standard's payback period to the life of the equipment or allowing bond funding to be used for building controls.

**VI. Maintain a list of targeted sites to reduce energy use and install renewables.**

- a. Targeted sites will be those with the highest greenhouse gas emissions and that are using at least 40% more energy than their benchmark. Refer to Appendix 2.
- b. As funding allows, each year OES will provide funding for predesign studies at two or three targeted sites that have a high return on investment potential. The return on investment depends on tax incentives and ability to support renewable energy installations or upgrades.

VII. **Recognize achievements through the annual sustainability awards.** Annually, OES will solicit award nominations and facilitate the recommendation process through the Sustainability Steering Team.

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## AGENCY ACTIONS

Different factors impact an agency's ability to influence their energy use. The primary drivers include the amount of space they manage, the amount of time the buildings are conditioned, and whether they own or lease buildings. This section describes the expectations for the different agencies depending on amount of energy used and whether the space is owned.

Although agency actions that require implementing sustainable lease provisions are related to energy and building management, they are more related to an agency's wholistic sustainability program. Therefore, these actions aren't included in this plan but are in agencies' annual sustainability plans.

### ALL AGENCIES

All agencies have a role in reducing energy use and increasing renewable energy. As part of this plan, all agencies will prioritize the following actions.

- A. Maintain site and utility data.** You can't manage what you don't measure. For all state-owned locations that are 5,000 square feet or more and for leased locations that are more than 10,000 square feet, in B3 Benchmarking:
  - i. Annually, update or and confirm the site information is correct (e.g., square footage, space use, events, occupancy).
  - ii. Confirm that abandoned sites are decommissioned (not deleted) and new sites are added.
  - iii. Enter energy (and water and municipal solid waste generation) data at least quarterly. As desired, explore opportunities for data automation through utility companies.
- B. Implement energy management best practices.**
  - i. Work with building operators or physical plant directors to implement operational control strategies to conserve energy use (e.g., set point changes).
  - ii. Conduct plug-load audits to and implement plug load management strategies as appropriate.
  - iii. H. Evaluate space use. Review existing space occupancy and utilization and identify potential opportunities to consolidate space.

## LARGE ENERGY USERS

A large energy user is one of the top seven agencies using the most energy in the Enterprise. These agencies are the Metropolitan Council (MetC), and the Departments of Administration (ADM/Admin), Corrections (DOC), Human Services (DHS), Military Affairs (DMA), Transportation (DOT), and Veterans Affairs (MDVA). Based on 2023 data, these seven agencies used 94% of the Enterprise's energy. Refer to Appendix 1 to see the distribution of energy use. Note: this list does not include buildings with process energy because that energy is not included when calculating progress toward the energy goal. Also, these data are from before the creation of the Department of Children, Youth, and Families (DCYF) and the separation of Direct Care and Treatment from DHS. The energy use for DHS as shown here can be primarily attributed to DCT's operations.

As part of this plan, large energy users will prioritize the following actions.

**C. Train staff.** Annually, provide resources (e.g., work time, course enrollment fees) for appropriate staff to attend at least one training opportunity like: [Building Operators Certification](#); [Minnesota Chief Engineers Guild meetings](#); [US Department of Energy's 50001 Ready Program](#); and/or participate in programs through utilities, like [Xcel Energy's Partners in Energy program](#).

**D. Retain an energy manager.** Energy managers help to optimize building energy performance and reduce utility costs. OES has a position description and job posting for agencies to use as a template.

**E. Conduct deep energy retrofits.** Develop and implement a plan for deep energy retrofits or rebuilds at the 14 targeted sites. In 2023, these sites were the top greenhouse gas emitters and used at least 40% more energy than their benchmark. Refer to Appendix 2 for a list of the sites.

The deep energy retrofit plan should be for each building while also evaluating the site in its entirety, especially if there is a shared heating and cooling system for a whole-systems approach. The plan should include:

- i. the building evaluation schedule (Agency Action H),
- ii. a building-specific energy baseline and benchmark,
- iii. recommended efficiency and conservation projects to reduce energy load,
- iv. recommended heating, ventilation, and air conditioning system types and sizes,

### ***Energy Managers***

*Admin has had an energy manager since 2018. Energy managers typically manage the entire energy program by:*

- *developing energy baselines, benchmarks, and goals.*
- *managing energy audits.*
- *conducting or promoting training.*
- *providing technical assistance for building improvement projects.*
- *identifying new technology opportunities.*

### ***Deep energy retrofits***

*Deep energy retrofits generally reduce site energy use at least **40%** by using a whole-systems approach that combines ECMs rather than considering technologies in isolation. For example, DMA conducted a deep energy retrofit at their Bemidji location, including replacing entire heating and cooling system, upgrading lighting to LEDs, and updating doors, windows, and bathroom faucets and shower heads. This led to a **51% drop in natural gas use per square foot** and a **lowered utility expenses 32%**.*

- v. recommended building automation or control systems upgrades,
- vi. recommendations from the renewable technologies review (Agency Action I),
- vii. potential funding sources to implement the recommendations, and
- viii. avoided costs and greenhouse gas emissions from the implementation of the recommendations.

## ALL AGENCIES WITH STATE-OWNED SPACE

Agencies with owned space include the large energy users (listed above) and the Departments of Agriculture (MDA), Employment and Economic Development (DEED), Iron Range Resources & Rehabilitation (IRRR), and Natural Resources (DNR).

As part of this plan, at owned space, agencies will prioritize the following actions.

### F. Design and build efficient and sustainable buildings.

For new buildings and major remodels, work with Admin and OES to:

- i. implement the B3 Guidelines, including the SB2030 Energy Standard, on all projects that receive general obligation bond funding,
- ii. implement the [Predesign Guidelines](#), and
- iii. evaluate the project's potential for Inflation Reduction Act Elective Pay tax incentives.

### G. Identify funding requests with potential energy efficiency and ECM investments.

Consider prioritizing your agency's largest emitting or energy consuming buildings.

- i. Review Asset Preservation funding requests and ARCHIBUS Facility information to scope and prioritize investments.
- ii. Include energy efficiency and conservation investments, including building automation systems, insulation, fenestration, and heating and cooling systems, in bonding and general fund requests to reduce long-term operating costs (EO 19-25).

### H. Evaluate buildings.

Building evaluations can be turn-key audits (ASHRAE Level 1), retro-commissioning or existing building commissioning (ASHRAE Level 2), guaranteed energy saving program (GESP) audits, remodeling with commissioning, or decommissioning.

- i. Develop an evaluation schedule (EO 19-27).
- ii. Develop building-specific energy use intensity goals (EO 19-25).
- iii. Complete the evaluation(s).
- iv. Create a timeline for implementing the recommendations, prioritizing the recommendations that have the highest energy and/or greenhouse gas emissions reductions, returns on investment, feasibility, or other reasonable factors.
- v. Implement recommendations.

#### ***Efficient Design***

*In 2022, MDVA installed a variable refrigerant flow heating and cooling system at the Silver Bay Veterans Home. The system controls heating and cooling demands based on zone-specific settings, saving energy and improving comfort. Since installation, the system has **reduced natural gas use 70%, water use and costs 19%, and greenhouse gas emissions 33%.***

For large energy users, prioritize conducting the evaluations at buildings with the highest potential to reduce energy use and/or greenhouse emissions.

- I. **Evaluate facilities for renewable technologies.** Using the template provided by OES and in coordination with physical plant director(s) and or facility management staff:
  - i. Review locations to determine suitability for onsite solar generation. Locations include, but are not limited to rooftops, parking lots or ramps, open lands, or closed landfills.
  - ii. Based on site-specific information, estimate the system size that can be supported at the location, or the system size needed to offset electrical consumption.

- J. **Inventory refrigerants.** Develop an inventory of refrigerants used throughout buildings. The inventory should include the measured or estimated annual refrigerant losses. Use the inventory to develop replacement timelines and alternatives that are less harmful, per the US Environmental Protection Agency's [Significant New Alternative Policy \(SNAP\)](#).

### *Energy Audits*

*DOC is using low-cost utility grade energy audits to identify lighting upgrades and other energy conservation measures. A utility grade energy audit completed at Oak Park Heights in 2022 identified LED lighting and new variable frequency drive units on 30 high pressure cooling tower pumps. Implementing these projects has a payback period of less than four years and is estimated to **save 633,000 kilowatt hours and avoid \$53,000 in utility costs each year.***

## **AGENCIES WITH WASTEWATER TREATMENT PLANTS**

The Metropolitan Council is the only agency with large wastewater treatment plants. The energy used at these wastewater treatment plants is considered process energy. In 2023, wastewater treatment plants accounted for 39% of total enterprise electricity use and 17% of enterprise greenhouse gas emissions. Process energy is not included in the OES goal language or EUI calculations.

- K. **Optimize Wastewater Treatment Plants.** Develop a plan to optimize wastewater treatment plants by reducing energy, water, and greenhouse gas emissions in the treatment process, reclaim effluent, fuel switch, and utilize renewable energy.

## **AGENCIES THAT LEASE LABORATORY SPACE FROM ADMIN**

The Departments of Agriculture, Health, and Public Safety, the Bureau of Criminal Apprehension lease laboratory space from Admin. These spaces have unique and specific energy use and concerns.

- L. **Participate in lab users' group.** Agencies will participate in a Lab users group subcommittee. As a minimum, the agency sustainability coordinator will attend all meetings, although at least one representative from each lab is encouraged to attend.

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## **IMPLEMENTATION**

Many of the actions in this plan have been included in prior enterprise action plans, so some should already be implemented (ongoing actions). Other actions may be implemented at different times.

Agencies can implement the actions sooner than in the below table, but they must be implemented by the end of the calendar year indicated.

**Table 1 – Agency Action Recommended Implementation Schedule**

| Action                                                 | Ongoing | 2025 | 2026 | 2027 | 2028 | 2029 |
|--------------------------------------------------------|---------|------|------|------|------|------|
| <b>All Agencies</b>                                    |         |      |      |      |      |      |
| Maintain site and utility data                         |         |      |      |      |      |      |
| Implement energy management best practices             |         |      |      |      |      |      |
| <b>Large Energy Users</b>                              |         |      |      |      |      |      |
| Train staff                                            |         |      |      |      |      |      |
| Retain an energy manager                               |         |      |      |      |      |      |
| Conduct deep energy retrofits                          |         |      |      |      |      |      |
| <b>All Agencies with Owned Space</b>                   |         |      |      |      |      |      |
| Design and build sustainable buildings                 |         |      |      |      |      |      |
| Identify funding requests                              |         |      |      |      |      |      |
| Evaluate buildings                                     |         |      |      |      |      |      |
| Evaluate facilities for renewables                     |         |      |      |      |      |      |
| Inventory refrigerants                                 |         |      |      |      |      |      |
| <b>Agencies with Wastewater Treatment Plants</b>       |         |      |      |      |      |      |
| Optimize wastewater treatment plants                   |         |      |      |      |      |      |
| <b>Agencies that Lease Laboratory Space from Admin</b> |         |      |      |      |      |      |
| Participate in lab users' group                        |         |      |      |      |      |      |

 = year action should be implemented

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## ACCOMPLISHMENTS AND OPPORTUNITIES

### ACCOMPLISHMENTS

Success stories related to a few agency actions are highlighted throughout this plan. Additional case studies are available at [sustainability.mn.gov](https://sustainability.mn.gov).

### OPPORTUNITIES

#### Financial

Installing renewable energy or new heating and cooling technologies has been viewed as cost prohibitive because of high upfront costs or long returns on investment. However, the recently passed Inflation Reduction Act allows state agencies to take advantage to tax credits that weren't previously available to non-taxed entities.

As utility rates continue to increase, energy efficiency, fuel switching, and offsetting electricity use with onsite renewable energy will continue to lower monthly utility costs and shorten returns on investment for heating/cooling systems and renewables.

#### Heating and Cooling Systems Lifecycles

Many heating and cooling systems have 20-30+ year lifecycles, so boilers that are installed today will be in service for decades. That's why it is crucial to replace systems with the most efficient and effective technology for the location and not simply a like-for-like installation. This requires long-term planning to be able to make a proactive, informed decision instead of a reactive choice.

#### Leased space

Property owners or managers may not be familiar or invested in energy conservation and efficiency measures, and agencies that lease space may not have the ability to influence energy management at the building. New lease solicitations and renewals should incorporate [sustainable lease provisions](#) to reduce energy use.

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## RESOURCES FOR IMPLEMENTATION

### FINANCIAL

#### The Minnesota Guaranteed Energy Saving Program

The Department of Commerce manages the [Minnesota Guaranteed Energy Savings Program \(GESP\)](#) that provides technical and financial assistance to state agencies, local government units, school districts, and institutions of higher learning. Contact [energysavings.programs@state.mn.us](mailto:energysavings.programs@state.mn.us) for more information.

#### State Building Energy Conservation Improvement Revolving Loan Account

OES manages a \$5 million revolving loan fund to finance energy efficiency and conservation improvements in state-owned buildings. All state agencies that own buildings are eligible to apply for projects like lighting upgrades, digital controls for heating and cooling systems, variable-frequency drive fans and motors, ground and air source heat pumps, retro-commissioning and energy audits, and water heater replacements. Contact OES for more information.

### **Inflation Reduction Act (IRA) Elective Pay tax incentives**

Through the IRA, tax-exempt and governmental entities can receive tax credits from installing renewable energy (e.g., ground source heat pumps, and solar) or purchasing electric vehicles.

### **Commercial Buildings Energy-Efficiency Tax Deduction (179D)**

The 179D deduction allows building owners, specifically tax-exempt organizations, to claim a tax deduction for installing qualifying systems in buildings by passing the tax credit to the person or entity responsible for the design.

## **TECHNICAL ASSISTANCE**

### **Energy Star Trainings**

The Energy Star program, administered by the US Environmental Protection Agency, offers [training opportunities](#) and [benchmarking tools](#).

### **Sustainability.mn.gov**

OES's website, [www.sustainability.mn.gov](http://www.sustainability.mn.gov), shows current sustainability data, case studies, and methodology.

### **US Department of Energy's Energy (DOE) Efficiency programs**

The DOE has energy efficiency policies and programs can help drive the implementation of projects that minimize or reduce energy use during the operation of a system and/or production of a good or service. <https://www.energy.gov/scep/slsc/energy-efficiency-policies-and-programs>

### **US DOE's Better Buildings Accelerators**

The DOE's Accelerators are designed to demonstrate specific innovative policies and approaches, which will accelerate investment in energy efficiency upon successful demonstration. Each Accelerator is a targeted, short-term, partner-focused activity designed to address persistent barriers that stand in the way of greater efficiency.: <https://betterbuildingssolutioncenter.energy.gov/accelerators>

### **Utility-specific programs**

Check with your utility companies to see what programs they offer, like Minnesota Energy ([www.minnesotaenergyresources.com](http://www.minnesotaenergyresources.com)), Xcel Energy ([mn.my.xcelenergy.com/s/business](http://mn.my.xcelenergy.com/s/business)), Minnesota Power (<https://www.mnpower.com/ProgramsRebates/Business>), or CenterPoint Energy ([www.centerpointenergy.com/en-us/business?sa=mn](http://www.centerpointenergy.com/en-us/business?sa=mn)).

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## **AUTHORITIES**

Below are applicable laws, rules, statutes, executive orders, or other authorities related to energy efficiency and conservation and greenhouse gas emission reductions.

### **Climate Action Framework**

Developed by the Minnesota Pollution Control Agency, the Climate Action Framework provides an approach for Minnesota to address and prepare for climate change by strengthening the economy, improving health, and creating a more equitable Minnesota.

### **Executive Order 19-25 Advancing Energy Efficiency and Renewable Energy Programs for Minnesota's Public Buildings**

Advances energy efficiency and renewable energy programs for Minnesota's public buildings. It requires agencies to consult with the Department of Commerce and Admin to establish site specific goals for owned buildings and provides guidance for agencies to complete a series of additional energy reduction actions.

**Executive Order 19-27 Directing State Government to Conserve Energy and Water, and Reduce Waste to Save Money**

Establishes the framework for the OES, including the Sustainability Steering Team and sustainability goals. It also directs cabinet agencies to be involved in making progress toward the sustainability goals.

**Next Generation Energy Act**

Requires the state to reduce greenhouse gas emissions throughout Minnesota by 80% between 2005 and 2050 and support clean energy, energy efficiency, and supplementing other renewable energy standards.

**Mn Session Laws - 2002 Chapter 398-H.F.No. 2972 Benchmarks for Existing Public Buildings**

Directs Admin to maintain information on energy usage in all public buildings for the purpose of establishing energy efficiency benchmarks and energy conservation goals.

**Mn State Stat §16B.325 Sustainable Building Guidelines**

Directs the Department of Commerce and Admin to develop the sustainable building design guidelines and SB2030 Energy Standard. These guidelines focus on the lowest lifetime cost and are required for new buildings and major renovations receiving funding from bond proceeds.

**Mn State Stat §16B.32 Energy Use**

If the incorporation of cost-effective energy efficiency measures into the design, materials, and operations of a building or major building renovation is not sufficient to meet the SB2030 Energy Standard, cost-effective renewable energy sources or solar thermal energy systems, or both, must be deployed to achieve those standards.

**Mn State Stat §16B.322 State Energy Improvement Finance Program**

The State Public Building Enhanced Energy Efficiency Program (PBEEEP) is an energy improvement financing program administered by Admin in which state agencies may elect to participate. State PBEEEP provides technical services to state agencies with state buildings or facilities that the Commissioner determines offer the greatest potential to improve energy efficiency or reduce use of fossil-fuel energy.

**Mn State Stat §16B.372 Environmental Sustainability Government Operations; Office Created**

Establishes OES to assist agencies in making measurable progress toward improving sustainability of government operations. Directs OES to manage sustainability reporting and metrics, assist agencies in developing and implementing sustainability plans, and requires agencies to participate.

**MN State Stat §16B.86 State Building Energy Conservation Improvement Revolving Loan Account**

Establishes a \$5 million revolving loan fund managed by Admin to be used to finance energy efficiency and conservation improvements in state-owned buildings.

**Mn State Stat §16C.14 Energy Efficiency Installment Purchases**

States that Admin may use avoided energy costs to pay for equipment or services intended to improve energy efficiency or reduce the energy costs of a state building or facility. The total number of

installments may not exceed 15 years, the contract vendor provides or obtains financing without state assistance or guarantee, and the total contract must be less than the expected avoided costs.

**Mn State Stat §16C.144 Guaranteed Energy-Savings Program (GESP)**

The GESP program provides technical assistance to state agencies, local government units, school districts and institutions of higher learning that elect to implement energy efficiency and renewable energy improvements through guaranteed energy savings contracts. GESP utilizes an energy performance contract, which is a performance-based procurement and financing mechanism that leverages energy and operational savings achieved through the installation of energy efficient and renewable energy equipment and implementation of operational best practices to finance the cost of the building retrofit and renewal project, with no net cost increase to the public entity.

**Mn State Stat §216B.1691 Subd. 2g Renewable Energy Objectives**

Directs electric utilities supply Minnesota customers with electricity generated or procured from carbon-free resources. Starting in 2030, carbon free sources must be 80% of retail sales for public utility customers. That amount increases every 5 years to reach 100% for all electric utilities by 2040.

**Mn State Stat §216B.241 Subd. 9 Public Utilities; Energy Conservation and Optimization**

Directs the Departments of Administration and Commerce to develop the sustainable building design guidelines. These guidelines focus on the lowest lifetime cost for new buildings and major renovations and are mandatory for all new buildings receiving funding from bonds and for all major renovations after January 1, 2009. These guidelines are the SB2030 standards.

## APPENDIX 1 - DATA TRENDS

Figure 3 – Energy use intensity (EUI)

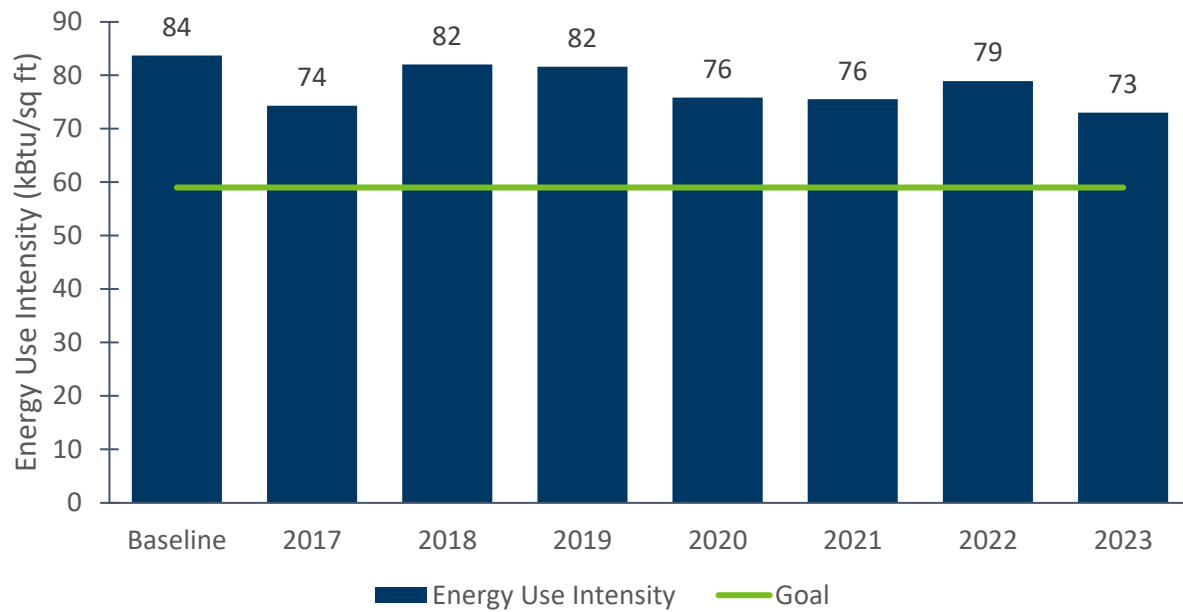
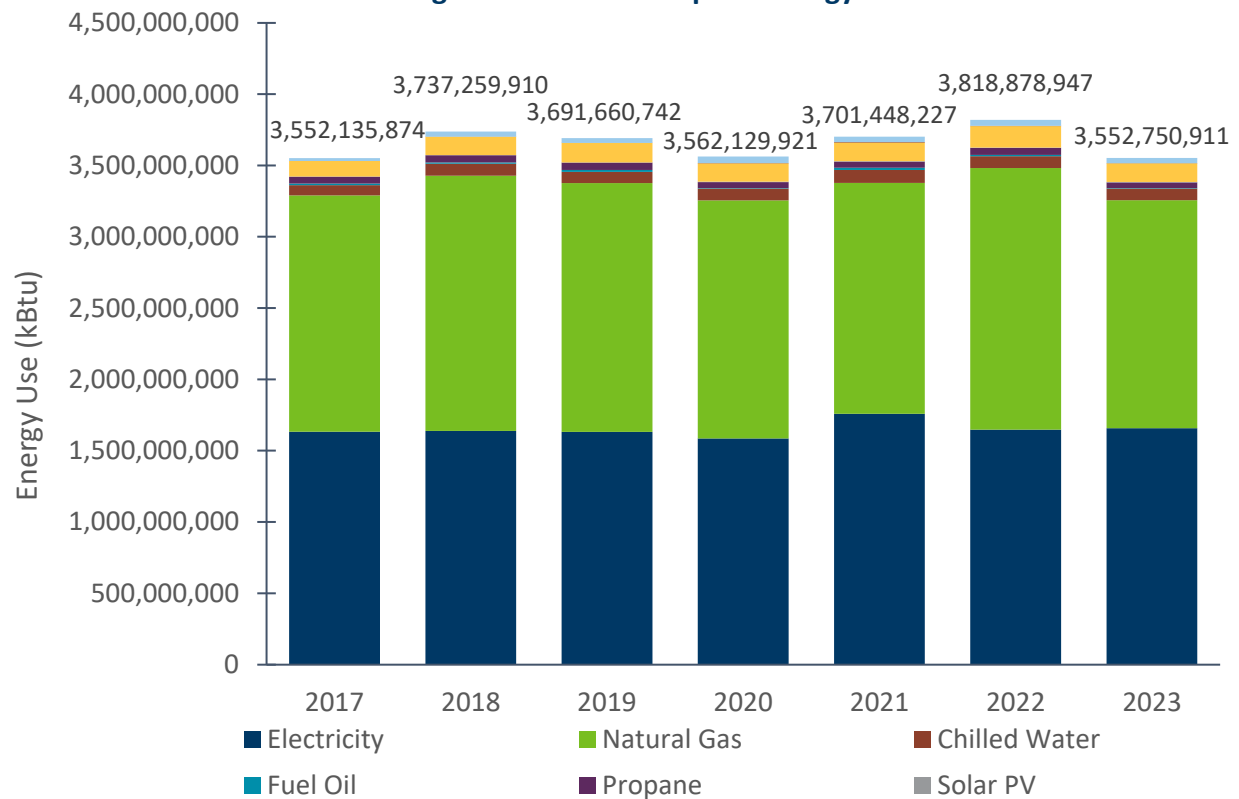
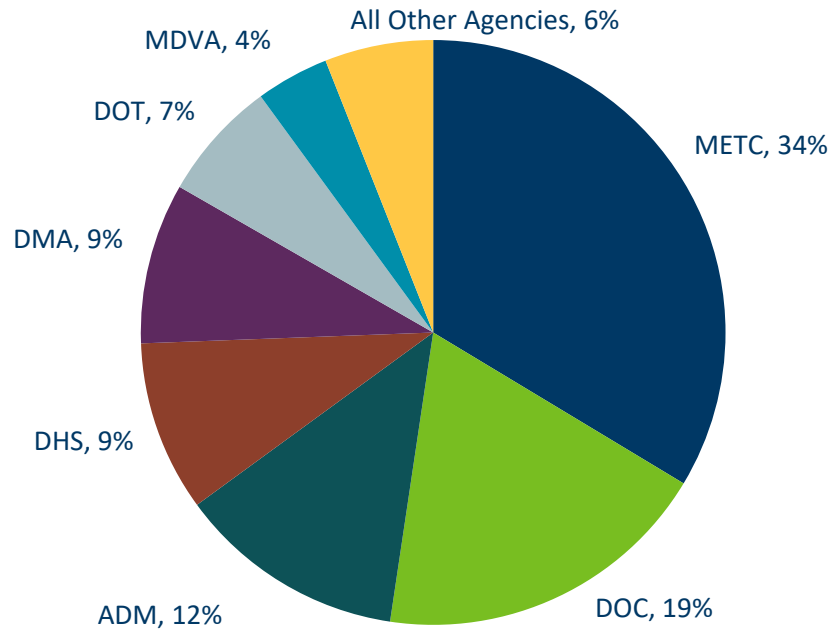


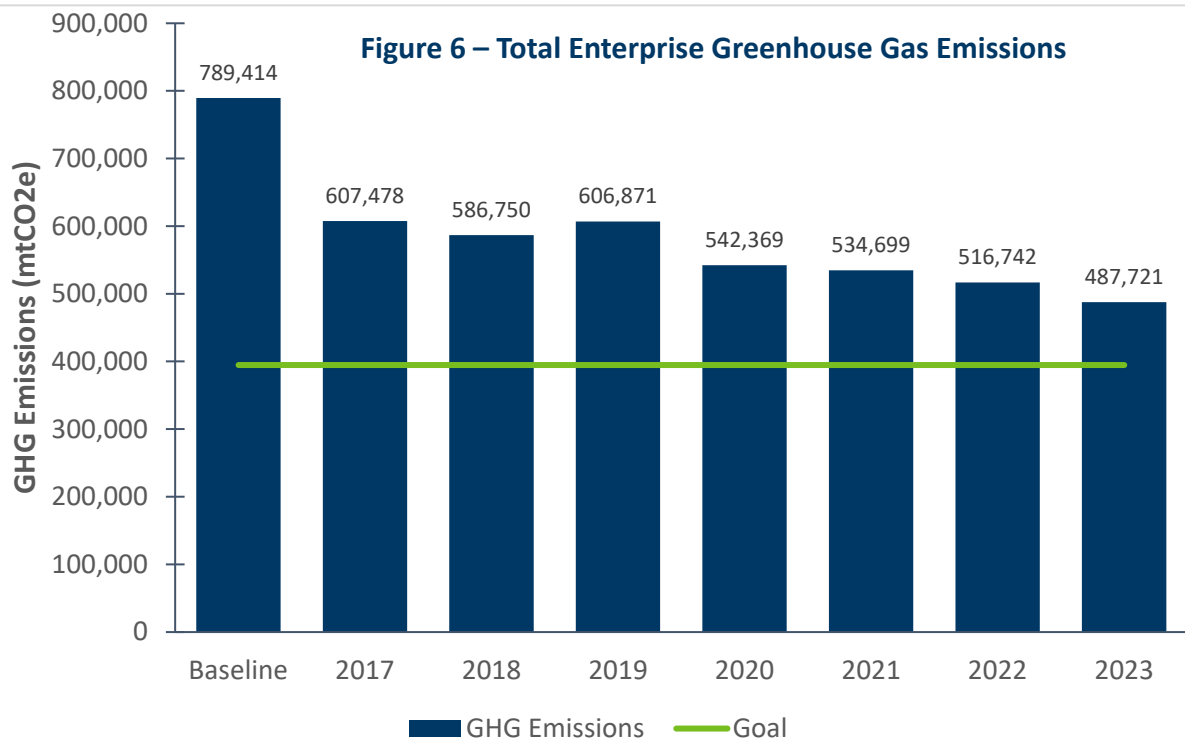
Figure 4 – Total Enterprise Energy Use



**Figure 5 – Agency Share of Total Energy Use Figure 5**



**Figure 6 – Total Enterprise Greenhouse Gas Emissions**



## APPENDIX 2 – TARGETED SITES

| Agency | Site                       | 2023 sq ft | Total 2023<br>kBtu | Total<br>2023<br>mtCO <sub>2</sub> e | Total 2023<br>cost | Benchmark<br>total kBtu | % of<br>Benchmark | Potential<br>ghg savings<br>(mtCO <sub>2</sub> e/yr) | Energy<br>potential<br>savings<br>(kBtu/yr) | Potential<br>cost<br>savings<br>(\$/yr) |
|--------|----------------------------|------------|--------------------|--------------------------------------|--------------------|-------------------------|-------------------|------------------------------------------------------|---------------------------------------------|-----------------------------------------|
| DOC    | MCF - Faribault            | 1,196,653  | 186,649,598        | 14,865                               | \$2,727,686        | 94,453,940              | 198%              | 6,851                                                | 87,222,000                                  | \$698,000                               |
| DHS    | DCT - St. Peter            | 929,205    | 140,065,671        | 10,489                               | \$1,858,282        | 38,096,238              | 368%              | 509                                                  | 4,062,000                                   | \$88,000                                |
| DOC    | MCF - Rush City            | 445,981    | 83,223,687         | 6,640                                | \$1,946,748        | 41,280,437              | 202%              | 2,834                                                | 38,349,000                                  | \$498,000                               |
| DOC    | MCF - Moose Lake           | 595,200    | 80,115,905         | 5,623                                | \$1,385,892        | 55,948,464              | 143%              | 974                                                  | 18,331,000                                  | \$111,000                               |
| DHS    | DCT - Moose Lake           | 460,554    | 69,483,819         | 5,679                                | \$1,333,345        | 44,105,114              | 158%              | 2,344                                                | 30,644,000                                  | \$465,000                               |
| ADM    | History Center             | 517,555    | 51,347,551         | 4,716                                | 1,058,737          | 43,446,762              | 118%              | 459                                                  | 8,649,000                                   | \$35,000                                |
| DHS    | DCT - Anoka                | 387,206    | 48,324,323         | 3,641                                | \$806,447          | 32,891,191              | 147%              | 0                                                    | 15,433,132                                  | \$0                                     |
| DMA    | Camp Ripley                | 941,703    | 36,551,076         | 3,014                                | \$669,544          | 13,194,620              | 277%              | 384                                                  | 3,000,000                                   | \$98,000                                |
| ADM    | Freeman Building           | 374,746    | 35,168,631         | 2,221                                | \$850,610          | 20,001,335              | 176%              | 363                                                  | 5,437,000                                   | \$147,000                               |
| MDVA   | Hastings Veterans Home     | 227,980    | 33,742,468         | 2,472                                | \$327,846          | 24,035,464              | 140%              | 385                                                  | 6,719,000                                   | \$16,000                                |
| DOT    | Headquarters Roseville     | 193,390    | 18,598,747         | 2,036                                | \$736,000          | 13,300,105              | 140%              | 530                                                  | 5,464,000                                   | \$114,000                               |
| MDVA   | Luverne Veterans Home      | 68,584     | 16,430,039         | 1,346                                | \$248,502          | 9,871,529               | 166%              | 581                                                  | 6,547,000                                   | \$80,000                                |
| MDVA   | Fergus Falls Veterans Home | 102,566    | 15,298,705         | 1,251                                | \$273,613          | 10,511,638              | 146%              | 291                                                  | 3,756,000                                   | \$54,000                                |
| MetC   | South Garage               | 229,869    | 13,343,672         | 931                                  | 198,581            | 23,178,945              | 58%               | NA                                                   | NA                                          | NA                                      |

### Notes:

- sq ft = square footage
- kBtu = kilo British thermal units
- mtCO<sub>2</sub>e = metric tons carbon dioxide equivalents
- yr = year
- ghg = greenhouse gas emissions
- NA = Not available
- Per discussions with the MetC, South Garage replaced Blue Line Operation and Maintenance Facility base on potential for energy savings.
- Per discussions with the Department of Administration, The History Center replaced the Retirement Building based on potential for avoided ghg emissions and costs.

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## DEFINITIONS

**Baseline, adjusted:**

**Baseline, calculated:** The greenhouse gas emission baseline is calculated based on assumed energy and fleet fossil fuel use from calendar year 2005. Data sets for that year are not fully complete, therefore some assumptions were made based on usage extrapolation.

**Building energy:** Energy used in activities that provide and maintain comfort, amenities, and value for the building and its occupants.

**Deep energy retrofit:** A whole-building analysis and construction/renovation process that achieves much larger energy and energy cost savings more than those of conventional energy retrofits. Deep retrofits also tend to improve the satisfaction and health of building occupants. (The Rocky Mountain Institute/US Department of Energy)

**Energy conservation:** Preventing energy use by using fewer energy services. A simple example is turning off lights.

**Energy efficiency:** Using less energy to perform the same task or achieve the same result. An example is installing lighting systems that providing the same intensity and hours of light with less energy.

**Energy use intensity (EUI):** A building's energy use as a function of its size. For the purposes of this plan, EUI is the energy use divided by the building's square footage.

**Large energy user:** One of the top seven agencies using the most energy in the Enterprise. Based on 2023 data, these agencies are: the Metropolitan Council (MetC) and the Departments of Administration (ADM/Admin), Corrections (DOC), Human Services (DHS), Military Affairs (DMA), Transportation (DOT), and Veterans Affairs (MDVA). This energy use does not include process energy because that energy is not included when calculating progress toward the energy goal.

**State Enterprise or the Enterprise:** The 23 agencies represented in the Governor's cabinet and the Metropolitan Council.

**Sustainability:** Meeting the economic, social, and environmental needs of the present without compromising the ability of future generations to meet the same needs

**Sustainability Steering Team:** Sets priorities for OES by approving changes to the sustainability goals and plans to achieve the goals and reviewing progress of the Enterprise and individual Cabinet Agencies. The team is chaired by the Lieutenant Governor with eight commissioners as members. (EO 19-27)

**Process energy:** Energy used in activities *other than* providing and maintaining comfort, amenities, and value for the building and its occupants.