


A background image of a silver car parked on a street. In the background, there is a cityscape and a body of water. The image is overlaid with a blue tint and various geometric patterns like concentric circles and a checkerboard.

# Renewable Energy & Decarbonization

**How we produce and use energy has big impacts on our environment. Moving away from fossil fuels (also called decarbonization) and saving energy are very important strategies for reducing climate pollution. Using clean, renewable energy like solar, geothermal, and wind energy to power buildings and vehicles is good for our climate, our health, and our economy.**



In 2018, Madison adopted the ambitious goal of reaching 100% renewable energy and net zero carbon emissions for City operations by 2030 and community-wide by 2050. Net zero carbon emissions means that we are not making more climate pollution than we are able to remove from the environment. Reaching these goals must be a community-wide effort. We all have a part to play in creating a climate-friendly community for current and future generations. In 2022, Madison's two main sources of greenhouse gas emissions (GHG) were commercial and residential buildings (63.7%) and transportation (27.5%). To reduce our carbon footprint, we need to make our buildings more energy efficient; move to clean, renewable energy; and make climate-friendly choices about how we travel.

The City of Madison is working to advance renewable energy, efficient buildings, and clean transportation for City operations and support these climate-friendly transitions community-wide. In 2024, about 75% of electricity used by the City will come from renewable sources. We have installed 2 megawatts (MW) of solar at City facilities and plans to reach 10 MW total by 2030. A solar installation one megawatt in size produces enough electricity to power

about 150 Wisconsin homes. 22% of the City's electricity is supplied by [Hermsdorf Solar Fields](#). This 8 MW utility-scale solar array was constructed through a partnership between the City of Madison, Madison Metropolitan School District, and Madison Gas and Electric (MGE) through their [Renewable Energy Rider program](#). We also purchase Renewable Energy Credits (RECs) through the Butter Solar Project. The City's [MadiSUN program](#) helps homes, businesses, and nonprofit organizations in our community go solar too through grants and group purchasing.

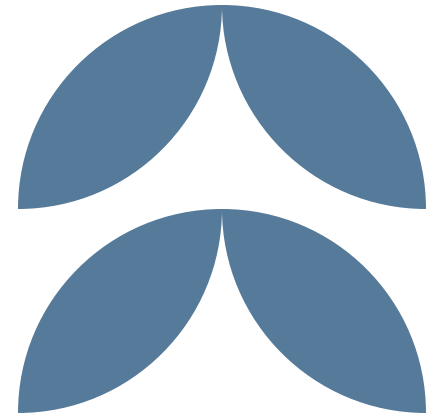


## **MadiSUN**

[MadiSUN](#) is the City of Madison's program to expand solar energy for homes, businesses, and nonprofit organizations in our community. The program gives homeowners resources and connects them with solar installers with good reputations. It also gives grants to Madison-based businesses, affordable housing providers, and community organizations to install solar power. This program is run by local nonprofit partner, RENEW Wisconsin, and has supported more than 3.5 MW of solar development since 2016.

There are a number of programs and initiatives to improve energy efficiency and reduce carbon pollution from residential and commercial buildings as well as City facilities. The City adopted the [Building Energy Savings Program](#) to improve energy efficiency in large commercial buildings through energy benchmarking and tune-ups in 2023. The City has measured and reported energy use in our buildings since 2015, and we share this information on our [Energy Dashboard](#). We use this information to stay on top of our energy use, identify opportunities to save energy and money, and make sure energy-efficiency upgrades are working in our buildings. All new City facilities have been built to [LEED Silver or higher green building standards](#) by the U.S. Green Building Council since 2008.

The City of Madison also supports programs to improve the energy efficiency of new and existing single and multifamily homes. These include the [Efficiency Navigator](#), [Single-Family and Rental Home Rehabilitation Programs](#), and the [Affordable Housing Fund](#). See the Quality, Affordable Housing section (pg. 24) for more information.



## **Partnership with Madison Gas and Electric**

[Madison Gas and Electric \(MGE\)](#) is a public utility that makes natural gas and electric services available in our community. MGE has committed to reducing the carbon emissions from the electricity it delivers 80% by 2030. By 2050, they have committed to net-zero emissions for all electricity production. MGE has partnered with the City to provide renewable energy for City operations, helped in the development of our all-electric bus rapid transit (BRT) system, and shared expertise for our transition to electric vehicles. MGE has added more than 50 MW of solar energy to its energy mix, and they expect to add another 50 MW of solar by the end of 2024. In Wisconsin, 50 MW of solar produces enough power to approximately 7,500 homes. To learn more, visit [MGE's Corporate Responsibility and Sustainability](#) webpage.



To make our vehicles more climate friendly, we are working to make it easier for everyone in our community to drive an electric vehicle (EV). We are quickly switching the City’s fleet of vehicles and [Madison Metro](#)’s buses to models that operate on low- and no-carbon fuel sources, such as electricity and biodiesel. Currently, the City has over 100 EVs and more than 150 hybrid-electric vehicles. The Fleet Division is also using many other climate-friendly technologies, materials, and building designs to reduce our carbon footprint and serve as a model for municipal fleets around the country.

To help Madisonians make the switch to EVs too, the City is collaborating with MGE to install EV chargers in City parking facilities and to start a new pilot program to install EV chargers on electric poles in Madison neighborhoods. Making sure everyone has easy access to EV chargers is an important way to make sure all Madisonians can benefit from EVs.

The following goals and actions aim to reduce climate and air pollution from private and public buildings and vehicles. Strategies and actions in the Quality, Affordable Housing (pg. 24); Resilient City Design and Infrastructure (pg. 32); and Sustainable Transportation (pg. 50) sections will also help lower our carbon footprint and improve air quality.

## Renewable Energy & Decarbonization | Goals & Actions

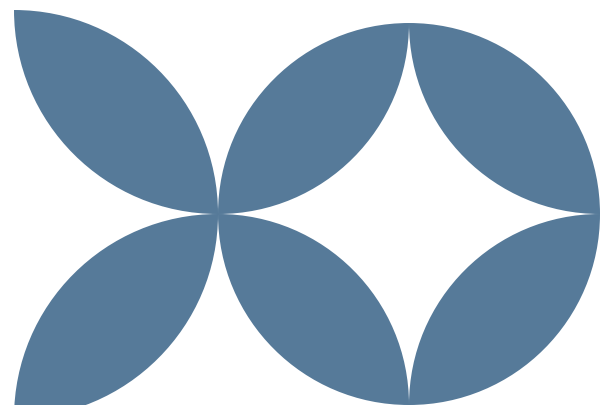
<b>GOAL 7</b>	<b>Reduce GHG emissions from City facilities and buildings 55% by 2030 from 2018 baseline.</b>
<b>METRICS</b>	GHG emission from City facilities and buildings
<b>ACTION 7.1</b>	Establish a net-zero GHG emission buildings standard (based on carbon emissions of the energy consumed) for all new City facilities and major retrofits. The standard should be flexible to allow a combination of strategies according to the following prioritization: on-site renewable energy generation, procurement of off-site renewable energy, and purchase of Renewable Energy Credits (RECs) or carbon credits.
<b>ACTION 7.2</b>	Conduct deep energy retrofits of existing City facilities (starting with least efficient) with an emphasis on energy efficiency and decarbonization.

### Building Energy Savings Program

The City of Madison adopted the new Building Energy Savings code in 2023 to help large commercial building owners identify opportunities to increase energy efficiency, save money, and reduce the carbon footprint of their buildings. Under the new code, non-residential commercial buildings 25,000 square feet and larger are required to benchmark energy use annually. Non-residential commercial buildings 50,000 square feet and larger are also required to complete a building tune-up every four years. Benchmarking and tune-ups save energy, reduce utility bills, provide a more comfortable space for occupants, and reduce carbon and air pollution that negatively impact public health and the environment. To learn more, visit the [Building Energy Savings Program website](#).

## Renewable Energy & Decarbonization | Goals & Actions

<b>GOAL 8</b>	Reduce GHG emissions from private facilities and buildings to achieve the City’s goal of reaching net zero emissions community-wide by 2050 from a 2018 baseline.
<b>METRICS</b>	GHG emissions from private facilities and buildings
<b>ACTION 8.1</b>	Develop a strategic pathway by 2026 for reducing GHG emissions from private facilities and buildings that sets aggressive, interim goals through 2050.
<b>ACTION 8.2</b>	Develop a voluntary stretch energy code to encourage energy efficiency in new buildings and facilities at such a time as allowed by state statute.
<b>ACTION 8.3</b>	Provide financial, structural, or process-based incentives to equitably implement energy efficiency and renewable energy measures in new and existing buildings, including connecting residents and business owners to state and federal programs.
<b>ACTION 8.4</b>	Partner with local organizations to educate private building owners and contractors on the value of energy efficiency in new and existing buildings, including energy cost savings, tenant satisfaction and retention, and real estate value.



## Renewable Energy & Decarbonization | Goals & Actions

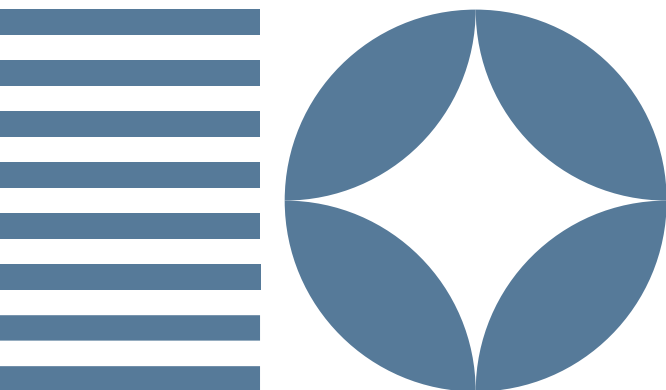
<b>GOAL 9</b>	<b>Reduce GHG emissions from City vehicles and equipment 90% by 2030 from 2018 baseline.</b>
<b>METRICS</b>	GHG emissions from city vehicles and equipment
<b>ACTION 9.1</b>	Build the necessary electric vehicle charging infrastructure at City facilities to support electrification of the City’s fleet.
<b>ACTION 9.2</b>	Purchase electric light- and medium-duty fleet vehicles to the greatest extent feasible by 2025.
<b>ACTION 9.3</b>	Transition the heavy duty-fleet to B100 (100% biodiesel), electric, or other low or no carbon fuels by 2030 to the greatest extent feasible, with funding assistance from public and private sector grants.





## Renewable Energy & Decarbonization | Goals & Actions

<b>GOAL 10</b>	Reduce GHG emissions from City vehicles and equipment 90% by 2030 from 2018 baseline.
<b>METRICS</b>	GHG emissions from vehicles community-wide
<b>ACTION 10.1</b>	Continue to encourage and promote the use of electrical vehicles and installation of charging infrastructure community-wide.
<b>ACTION 10.2</b>	Implement a 20 mph speed limit on all local streets and review all High Injury Network streets to determine appropriate speed limits as described in the <a href="#">Vision Zero Action Plan</a> .
<b>ACTION 10.3</b>	Increase the number of EV charging stations available to the public to meet projected future needs, informed by market analysis, and ensure that charging is available in all neighborhoods.



# Renewable Energy & Decarbonization | Goals & Actions

<b>GOAL 11</b>	Meet 100% of electricity demand for City operations with renewable energy by 2030.
<b>METRICS</b>	Percentage of city electricity demand from renewables
<b>ACTION 11.1</b>	Install solar at all viable City facilities by 2030, for a total of at least 10 MW of capacity.
<b>ACTION 11.2</b>	Procure renewable energy produced off-site or renewable energy credits (RECs) for City operations where 100% of electricity needs cannot be met by on-site renewable energy generation.
<b>ACTION 11.3</b>	Invest in carbon credits or carbon sequestration projects to reach net-zero emissions for City operations by 2030.

## Focus on Energy

Focus on Energy is a statewide program that offers resources and financial incentives for energy efficiency and renewable energy in Wisconsin. The goal of the program is to help residents, businesses, local governments, and nonprofits save energy and money on their utility bills. Visit [Focus on Energy's website](#) to learn more about their programs and products.

