STATE OF WISCONSIN

CLEAN ENERGY PLAN

Prepared by the Wisconsin Office of Sustainability and Clean Energy, Great Plains Institute, and Slipstream, Inc

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Version 1.0 - Condensed

Governor Tony Evers

FOREWORD

"The climate crisis is taking an undeniable toll on the health, safety, and economic well-being of folks across our state. The livelihood of Wisconsin farmers is in danger with extreme and unpredictable weather taking a toll on crops and production, our state's tourism industry and economy depends on our vast and valuable natural resources, and as health professionals have indicated, the health of our people depends on the health of the environments they live in. Every Wisconsinite—whether they live in the Driftless, the Central Sands, the Northwoods, or in the heart of our urban areas—has experienced the effects of climate change in one way or another, and reducing carbon emissions and bolstering clean energy opportunities will remain a priority for me as long as I am governor. We don't have to choose between mitigating climate change and protecting our environment and affordable energy and affordable energy. Wisconsin is ready for bold and urgent solutions that will stop treating these goals as mutually exclusive—we can and will do both. Together, we can deliver on our promise to leave our kids with a better life and a better world than the one we inherited by building a sustainable state and economy for the future."

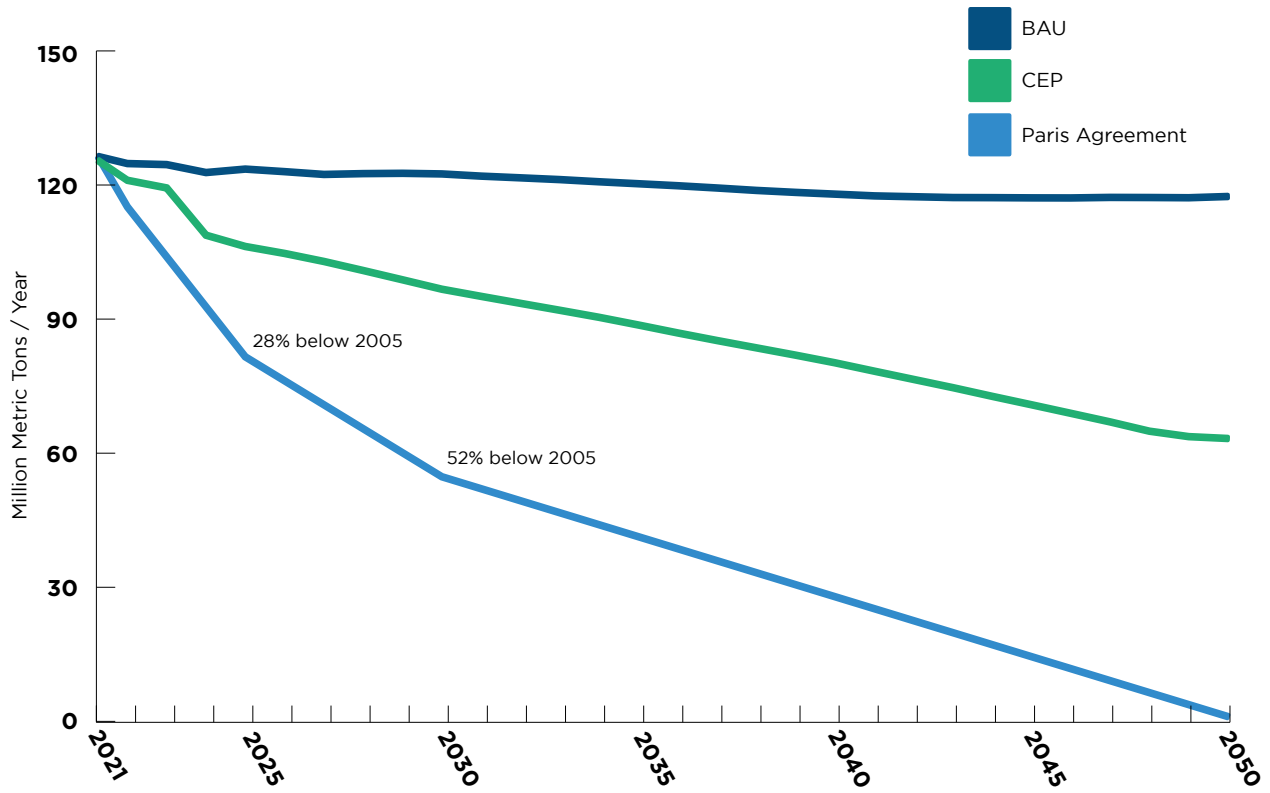
ADDRESSING CLIMATE CHANGE THROUGH A TRANSITION TO CLEAN ENERGY

The Wisconsin Clean Energy Plan (CEP) is coordinated by the Wisconsin Office of Sustainability and Clean Energy (OSCE) as directed by Governor Tony Evers through Executive Order #38. The purpose of the CEP is to outline strategies that directly address climate change, incorporate environmental justice, and ensure accelerated progress towards a strong clean energy economy. In developing the CEP, the OSCE outlined a comprehensive process to gather the voices of Wisconsinites and ensure that this plan reflects the values of our state. It pursues strategies in a manner that will benefit the greatest number of Wisconsin residents. Like many other states, Wisconsin recognizes the urgency of addressing climate change and the negative impacts that affect the livelihoods, natural environment, and well-being of all current and future Wisconsinites. Whether it be the loss of life during an extreme weather event, long-term illness due to air pollution, or the costly economic toll climate change is having on farmers and rural communities, the changing climate is impacting everyone. Staying on our current emissions path will only exacerbate the impacts of climate change and Wisconsinites should not have to deal with the harmful effects of increased heat, humidity, and precipitation.

When considering strategies to transition to a clean energy economy, OSCE took into consideration the status of Wisconsin's energy generation and use, emissions, affordability, and social factors that may influence the pathways. The state's dependence on fossil fuels to meet its energy consumption needs contributes to regional, national, and global greenhouse gas emissions. Inaction in Wisconsin will have tremendous costs to our communities—especially low-income communities and communities of color that face disparate impacts of climate change, our agricultural industries, statewide infrastructure, and our economy. Wisconsin's CEP provides a framework to ensure that Wisconsin businesses, communities, and people are well-positioned to share in the work of this plan.

Wisconsin's CEP is one of many necessary steps toward meeting the state's carbon-free power and climate goals while staying within our carbon budget, Wisconsin's total allowable carbon emissions to prevent continued increased global temperatures. The modeled emissions reductions associated with the strategies included in the CEP provide a roadmap that accomplishes Wisconsin's objective of achieving a carbon-neutral power sector and reducing a range of other energy-related emissions. In the figure below, the emissions

under the blue line include those beyond the charge of the CEP as specified in Executive Order #38. Also included are energy-related emissions that have significant technical and implementation challenges (e.g., electrification of air travel and certain industrial processes, and behavior change). This is a Clean Energy Plan, which differs from a Climate Action Plan, in that it does not include strategies for non-energy-related greenhouse gas emissions reduction, carbon sequestration, and adaptation. Governor Evers convened a Task Force on Climate Change and is committed to implementing the recommendations in their Final Report, which are broader than those included in the Clean Energy Plan.



Taking into consideration the cost of inaction, the CEP is designed to be comprehensive yet flexible and adaptable to technological, market, and behavioral changes. The strategies contained within the CEP compose the first phase of what is a living document and put into practice a process for equitable, inclusive, and impactful clean energy planning and implementation. The overall objectives of the CEP include:

- Putting Wisconsin on a path for all electricity consumed within the state to be 100 percent carbon-free by 2050,
- Ensuring that the State of Wisconsin is fulfilling the carbon reduction goals of the 2015 Paris Agreement,
- Reducing the disproportionate impacts of energy generation and use on low-income communities and communities of color,

- Maximizing the creation of, and equitable opportunities for, clean energy jobs, economic development and stimulus, and retention of energy investment dollars in Wisconsin,
- Improving reliability and affordability of the energy system,
- Strengthening the clean energy workforce through training and education, while retraining workers affected by the transition from fossil fuel to clean energy sources, and
- Protecting human and environmental health by reducing ecosystem pollution from fossil fuels.

Wisconsin Clean Energy Transition Value Statement

As Wisconsin seeks to transition to cleaner energy, it looks to embrace and encourage others to adopt three core values: **justice, equity, and collective action**. These core values will not only ensure communities that have been most impacted by climate change benefit from this transition but also ensure that all Wisconsin communities benefit. Wisconsin will be a stronger and more thriving state when all communities have access to a clean environment and economic opportunity. In addition, the implementation of the work outlined in the State of Wisconsin Clean Energy Plan requires collective action. Government, industry, private sector, non-profit, and other large systems all bear responsibility for doing this work.

A long-standing reliance on fossil fuels, poor environmental policy decisions, and broader historical injustices have had a detrimental effect on various communities in the state. We must prioritize transforming environmental, health, and economic conditions for communities disproportionately impacted by climate change. Transitioning to clean energy provides Wisconsin with this opportunity. A just and equitable clean energy transition can lessen the energy burden that is often placed on families with low incomes and lessen financial hardships for those who are already struggling to make ends meet.

To help ensure a just and equitable transition, individuals who have been most impacted by pollution and climate change must be involved in the decision-making process, and this process must include diverse voices as it relates to race and ethnicity, sex and gender, socioeconomic status, and geography. Engaging and involving diverse representation, sharing power and resources, equitable policy development and implementation, and putting people above profit will help the state ensure that there is equitable access to the benefits of the clean energy transition. This includes providing a holistic approach to deliver the widest variety of clean energy technologies and services including energy efficiency, renewable energy generation, low-to-no-carbon transportation options, clean infrastructure, low-carbon food options, and others.

Job creation, business and community development, and resources must be shared across the state and communities—and communities that have most felt the impacts of climate change and have faced systemic barriers to wealth and opportunity must also see and feel the benefits of this transition. When delivering technologies and service, we must work to ensure—to the greatest extent possible—the jobs created during this transition not only employ Wisconsinites but people within the communities they serve. The clean energy transition also provides the state with the opportunity to reduce the $14 billion that are sent out of the state for fossil fuel production. Instead, we should invest these dollars into clean energy technologies and services here in Wisconsin so the state and the people of Wisconsin benefit economically. Furthermore, much of these dollars should be directed to communities that have seen the least investment.

Lastly, transitioning Wisconsin to a clean energy economy is a shared responsibility among all levels of government and governing bodies, the utility, energy, and transportation industries, the private sector, and non-governmental organizations. Collective action and collaboration among these systems are necessary to ensure a fair, just, and equitable clean energy transition.

As the State of Wisconsin assessed its path to a clean, reliable, and affordable energy future, four key pathways emerged to create momentum and action:

- ***Accelerate clean energy technology deployment*** – increasing funding options for projects, investing in infrastructure, new emissions goals, expanding state energy resources for generation, technology innovation, equitable expansion of clean energy, leveraging existing policies and programs.
- ***Maximize energy efficiency*** – strengthening energy efficiency standards and goals to reduce energy waste, create jobs, and save consumers money on energy costs.
- ***Modernize buildings and industry*** – addressing building codes, supporting electrification, expanding funding, and supporting industry and businesses in their transition
- ***Innovate transportation*** – support the transition to low- to no-emission vehicles and support refueling options, along with planning and increased options to move people around.

Below are additional ways the CEP ensures an inclusive transition:

Prioritizing health equity, environmental justice, and equitable economic development - Historically, Tribal Nations and Indigenous communities, Black, Hispanic/Latino, Hmong American, Asian American, other communities of color, people who have low incomes, people with disabilities, immigrants, women, senior residents, veterans, and rural communities have been left out of the conversation on transforming our country's energy system and transitioning to clean energy. In seeking to mitigate climate damage, these communities must be involved in decision-making on clean energy technologies, jobs, financial impacts, and health impacts. As an example, maximizing energy efficiency reduces energy costs for individuals, families, and communities with low to middle incomes, ensuring that they too benefit from Wisconsin's transition to clean energy. Deployment of technology must also be affordable and available to all residents and communities.

Fast-tracking workforce development and a just transition - Wisconsin must achieve an inclusive and equitable clean energy workforce through a clean energy workforce development program to systematically train and prepare workers for the nation and the state's transition to clean energy. This CEP works intentionally to provide clean energy job opportunities for those that have been excluded from the traditional energy economy. Opportunities should include training, apprenticeships, and high-paying jobs for such workers. This also may include requirements such that businesses that benefit from state clean energy policies and incentives must have a workforce that is reflective of the population of specific to the regions of the state.

Additionally, the CEP addresses a just transition from traditional fossil fuel energy generation and use. For some years, utility companies have been taking the lead to close coal plants around the country and in Wisconsin due to several factors, including the low cost of natural gas, the dramatic reduction in the cost of renewable generation, environmental regulation, and demand from customers for cleaner energy. Utility jobs being displaced often offer some of the best wages, benefits, and working conditions in their area. Loss of these jobs can have a significant impact on the individual workers and their families, as well as their communities. Often the location of the plants and the use of the land as a coal-fired power plant, make the closed facilities difficult to redevelop.

Accelerating government-led efforts (Lead-by-Example) - Drawing from the lived experiences, expertise, and knowledge of Tribal Nations, local government representatives, and state agency employees, governments can be leaders in efforts to reduce emissions, conserve energy, and transition to new technologies. These efforts are often referred to as "Lead-by-Example," where government entities analyze and transition their facilities and fleets to realize substantial cost savings, reduce greenhouse gas emissions, improve energy supply, build resilience, and procure more sustainable products.

While the CEP outlines 71 immediate action and 16 high-impact strategies, the CEP has further prioritized the following strategies as the launching point. **Each of these strategies is designed to maximize the environmental and economic benefits for frontline, environmental justice and low-income communities; and to maximize clean energy job creation, leading to a just transition for those who will be moving into the clean energy economy of Wisconsin's future:**

1. **Launch an Equity First Program** – launch a novel, comprehensive, and holistic statewide program to deliver the broadest range of clean energy technologies and services to the homes and businesses of those that need it most.
2. **Launch a systematic approach to clean energy workforce development and an intentional effort to employ Wisconsin workers and businesses** – work with leaders from companies, utilities, labor unions, technical colleges, the University of Wisconsin (UW) System, UW-Extension, and apprenticeship programs to create a strategic venue for interaction, training programs, and curricula driven by industry's priority workforce needs.

3. **Increase public and private sector investment in the deployment of clean energy in Wisconsin** - Set new generation emission goals and start planning to help achieve these goals.
   By 2030, reduce net carbon emissions from the power sector to at least 60 percent below 2005 levels. By 2050, reduce net carbon emissions from the power sector to 100 percent below 2005 levels. This is an alignment with the Public Service Commission of Wisconsin's (PSCW) process and decisions related to the Roadmap to Zero Carbon Investigation and Strategic Energy Assessment and explores the development of an Integrated Resource Plan (IRP) process.
4. **Strengthen energy efficiency standards and goals** - Reduce energy waste and save consumers money on energy costs by utilizing Focus on Energy® as the flagship program, which is considered one of the most cost-effective energy efficiency programs in the United States.
5. **Fast-track opportunities in buildings & industry -** Update building codes and establish an advisory council to address environmental issues such as, enabling adoption of stretch codes and adopting codes that require electric vehicle and solar-ready standards for commercial, residential, and multifamily new construction. Create a plan to adopt net carbon zero thermal solutions to scale up renewable heating and cooling in the industrial and building sectors.
6. **Accelerate electric vehicle adoption** - Coupled with vehicle deployment and infrastructure planning and implementation, fuel the development of Wisconsin's electric vehicle and associated charging station equipment manufacturing.
7. **Accelerate government-led efforts**
   a. Ensure Tribal representation and consultation on any state or regional commission or board, and multi-year energy planning efforts.
   b. Dedicate resources to technical/financial assistance and provide access to data to support the development of community CEPs, climate action plans, and conservation and resilience efforts.
   c. Support clean energy and energy efficiency projects via state agency performance contracting and other financing options.

These seven strategies will be crucial for Wisconsin's clean energy transition. Keep reading for a summary of all the strategies.

WISCONSIN CLEAN ENERGY STRATEGIES SUMMARY

For each of the pathways below, strategies were identified as:

High-Impact, those that will result in the greatest greenhouse gas reductions, may be implemented over a longer period, and may be informed by the immediate action strategies, and

Immediate Action, strategies that will be integrated into a work plan to commence work in the near- term.

ACCELERATE CLEAN ENERGY AND TECHNOLOGY DEPLOYMENT

In Wisconsin, electricity generation and imported energy account for the largest share at 32.2 percent of greenhouse gas emissions, in 2018. As such, it is a critical focus on this sector in the push for clean energy and to address climate change impacts. The State of Wisconsin has a goal of 100 percent carbon-free electricity consumed by 2050. With increased electrification of buildings, transportation, and industry, decarbonization of the power sector will be necessary to support economywide reductions. The deployment of clean energy requires a multi-faceted effort from multiple stakeholders. Wisconsin utilities, renewable energy developers, governments, and other actors are prioritizing this transition.

High-Impact Strategies

The CEP identifies five high-impact strategies to accelerate clean, affordable energy and technology deployment. This involves increasing public and private sector investments. Government, industry, private sector, non-profit, and other large systems all bear the responsibility of should be looking to accelerate the construction, deployment, and use of clean energy generation for power needs.

Immediate Action Strategies Summary

The CEP identifies 20 immediate action strategies to accelerate clean, affordable energy and technology deployment. In summary, these strategies support the development and deployment of technologies and programs such as energy storage, demand response, carbon capture, community solar, and utility-scale solar. Strategies include a focus on diversity, equity, and inclusion in clean energy business development. There are also strategies supporting innovative project financing options including models for a Wisconsin Green Bank, expanding Commercial Property Assessed Clean Energy (C-PACE), expanding Focus on Energy® incentives, creating a Green Grant and Loan Program, and leveraging federal funding. Some strategies focus on regulatory updates and improving collaboration with utilities and regional transmission organizations, and others focus on specific sectors, such as agriculture. In all, the strategies aim to accelerate Wisconsin's transition to clean energy to minimize economic, health, and environmental damages, as well as lives lost to climate change impacts.

MAXIMIZE ENERGY EFFICIENCY

To simultaneously meet the state's clean energy goals, economic goals, and carbon goals, Wisconsin needs to drastically increase energy efficiency, which will require a major ramp-up in investment. Not only are drastically higher levels of energy efficiency critical to reaching these goals, but they are also critical to keeping costs as low as possible. Energy efficiency is also one of the few tools that individual households if given the opportunity, can use to directly reduce their energy bills and energy burden.

High Impact Strategies

The CEP identifies six high-impact strategies to maximize energy efficiency. These strategies will strengthen energy efficiency standards and goals and will directly reduce energy waste and save consumers money on energy costs. Dramatically increasing public and private sector investments in energy efficiency, including programs like Focus on Energy®, allows programs to realize their full potential and result in dramatic increases in efficiency statewide.

Immediate Action Strategies Summary

The CEP identifies 10 immediate action strategies to maximize energy efficiency. These strategies include strengthening existing programs. There is an emphasis on increasing outreach and leveraging existing programs, such as Focus on Energy®, Weatherization, Low-Income Heating Energy Assistance Program, and others, along with securing support of federal dollars. The CEP identifies energy efficiency strategies for agriculture and schools. Strategies also promote creative financing options and additional energy efficiency measures for customers with low incomes.

MODERNIZE BUILDINGS & INDUSTRY

Direct emissions from commercial and residential buildings accounted for 16.8 percent of emissions in Wisconsin. Direct emissions in this sector are primarily the result of space heating and cooling, water heating, electronics, lighting, and other needs. These direct emissions are distinct from indirect emissions associated with electric generation needed to power buildings. Buildings are the fourth largest emitting sector in Wisconsin after electric generation, transportation, and agriculture.

According to the United States Energy Information Administration (EIA), in 2019, Wisconsin's industrial sector, including agriculture and the energy-intensive manufacture of food and beverage products, accounted for the largest amount at 32 percent of the state's end-use energy consumption. Wisconsin, direct emissions in the industrial sector were 18.2 percent, in 2018. Combining both the direct on-site fossil fuel combustion, and indirect off-site energy generation to power buildings, these greenhouse gas emissions account for significant greenhouse gas emission impacts.

High-Impact Strategies

The CEP identifies three high-impact strategies to begin to reduce emissions in buildings and industry. These strategies will strengthen standards and goals and will directly reduce emissions in buildings. These strategies also include adopting a renewable thermal standard, deploying rapid building electrification, and making the state a leader in energy building codes.

Immediate Action Strategies Summary

The CEP identifies eight immediate action strategies to modernize buildings and industry. Strategies look to Wisconsin resources and technology, including low-carbon building materials, woody biomass, and renewable heating and cooling in the industrial and building sector. Recognizing the impact Wisconsin's industrial sector has on energy use and emissions, the CEP includes strategies to explore high-value energy conservation and recognize industries working toward carbon reductions and highlight the associated community impact.

INNOVATE TRANSPORTATION

Transportation sector emissions account for the second-largest share of greenhouse gas emissions in Wisconsin at 27 percent, in 2018. Emissions from the transportation sector are the direct output from the combustion of fossil fuels used to power vehicles. Cars, buses, trucks, off-road vehicles, commercial aircraft, boats, and rail all contribute to transportation end-use emissions. Strategies that avoid or reduce our fossil-fuel dependence are critical to creating a clean, resilient transportation system and directly addresses climate change in Wisconsin.

High Impact Strategies

The CEP identifies three high-impact strategies to begin to reduce emissions in transportation. These strategies to decarbonize the transportation sector focus on decreasing the carbon content of the fuel that powers vehicles, improving the efficiency and use of vehicles, and emphasizing zero emission vehicle operation in the state.

Immediate Action Strategies Summary

The CEP identifies five immediate action strategies for Wisconsin to be innovative and accelerate emissions reductions in the transportation sector. The strategies include exploring efforts to enact a low-carbon fuel standard; planning for and deploying electric vehicles and infrastructure; ensuring that electric charging infrastructure is widely available for all types of vehicles and that it reaches rural, low-income, and communities of color; expanding options for people to move around communities in ways that support emissions reductions; and increasing economic development opportunities related to transportation.

A FRAMEWORK FOR ONGOING CLEAN ENERGY PLANNING

Wisconsin's CEP is one of many necessary steps toward meeting the state's carbon-free power and climate goals and staying within our carbon budget. The preceding strategies compose the first phase of what will be a living document and process for equitable, inclusive, and impactful clean energy planning and implementation. The framework for moving the CEP and its implementation forward is composed of three key elements which include, 1) ongoing stakeholder engagement, 2) measurement and verification of strategies, and 3) Provide an Annual Report to report out to provide ongoing data collection, synthesis, and analysis that is accurate and relevant to understanding Wisconsin's evolving clean energy ecosystem and CEP implementation progress. Below is the Year One Planning Timeline that serves as a model for annual planning.

"This work must continue in the months and years ahead in order to build the future we want for our state. With your help, we will make this state—and this planet—a place where everyone grows up in safe, clean, and thriving communities."

Governor Tony Evers

The complete Clean Energy Plan can be found at the Wisconsin Office of Sustainability & Clean Energy Website:
https://osce.wi.gov/pages/cleanenergyplan.aspx