

STATE OF WISCONSIN

CLEAN ENERGY PLAN

Progress Report



Prepared by the Wisconsin Office of Sustainability and Clean Energy

August 2024



ACCELERATING THE BENEFITS OF A CLEAN ENERGY FUTURE – ECONOMIC, HEALTH, AND RESILIENCE



Welcome to the second annual Clean Energy Plan Progress Report! The Office of Sustainability and Clean Energy is pleased to present the achievements and initiatives moving us toward our goal of 100 percent carbon-free electricity by 2050. With the support of Governor Tony Evers and his administration and a surge of once-in-a-lifetime federal funding, efforts to address climate change and achieve a clean energy economy here in Wisconsin are full sail ahead.

Our clean energy transition has seen significant progress, thanks in large part to the leadership of Governor Evers, the Inflation Reduction Act of 2022, and the Bipartisan Infrastructure Law of 2021. These pivotal legislation enactments, backed by substantial resources, have propelled Wisconsin's clean energy transition. Support for our emissions reduction efforts also came in May 2024 as Governor Evers reaffirmed his commitment to combat climate change by assuming a leadership role on the executive committee of the United States Climate Alliance. This action underscores the state's dedication to meeting the goals of the Paris Agreement and our nationally determined contribution to reduce net greenhouse gas emissions to 52 percent below 2005 levels by 2030 and 100 percent by 2050.

In his State of the State address, Governor Evers declared 2024 the Year of the Worker, highlighting the role the clean energy economy will have in creating workforce opportunities. We are committed to fostering an inclusive and equitable clean energy workforce, and this requires a concerted effort. We are strengthening our partnerships with diverse stakeholders, including workforce agencies, development boards, labor and trade organizations, universities, technical colleges, and non-governmental organizations. We are confident that our goal of creating 40,000 new clean energy jobs is within reach, and we are developing a comprehensive strategy that prioritizes the employment of Wisconsin workers and businesses.

Since the release of the Clean Energy Plan, the Office of Sustainability and Clean Energy has been actively engaging with stakeholders, demonstrating our commitment to equity, justice, and collective action. We have been incorporating suggestions from various groups and organizations, ensuring their voices are heard and considered. Over the past two years, our office has facilitated meaningful engagement from businesses, local governments, Tribal Nations, non-governmental organizations, environmental justice organizations, farmers, and agriculture. We've also launched the Wisconsin Climate Action Navigators group to create action around equity, justice, and meaningful community engagement. Looking ahead, our office will continue introducing new initiatives through community engagement, supporting individuals to move from being informed on an issue to being encouraged to act.

Wisconsin is poised to benefit from the economic, health, and resilience of a clean energy future. The Office of Sustainability and Clean Energy is excited to ensure that we achieve that future in a just and equitable way that centers the well-being of ALL communities, moving our entire state "Forward!"

Respectfully,

Maria Redmond

Director, Office of Sustainability and Clean Energy

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WISCONSIN CLEAN ENERGY PLAN PROGRESS REPORT

Published on April 19, 2022, the state of Wisconsin's first-ever Clean Energy Plan (CEP) developed under Governor Tony Evers and the Evers Administration serves as one of many necessary steps to protect our planet from the impacts of greenhouse gas (GHG) emissions and maximize the benefits of moving to a clean energy economy. The Office of Sustainability and Clean Energy (OSCE) created the CEP as a living document designed to be comprehensive yet flexible and able to adapt to market, technological, and attitudinal changes. The CEP intentionally centers strategies on environmental justice, multi-sector deep decarbonization, and a bustling clean energy economy supporting a diverse workforce and technological innovation. Implementing the CEP is expected to lower energy bills, reduce reliance on out-of-state energy sources, accelerate job and apprenticeship training opportunities, and create more than 40,000 jobs by 2030. This report provides a snapshot of the many efforts to engage Wisconsinites in our shared clean energy progress, understand the status of strategies and progress toward goals, highlight work by stakeholders and agency partners, and provide an understanding of Wisconsin's evolving clean energy ecosystem.



BACKGROUND

In August 2019, Governor Tony Evers issued Executive Order #38, directing the OSCE to create a comprehensive CEP.¹ Recognizing the existing conditions in Wisconsin and the role the state plays in both regional and national emissions reduction initiatives, the plan seeks to achieve the following objectives:

- 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 Paris Climate Agreement.²
- Improving reliability and affordability of the energy system.
- Reducing the disproportionate impacts of energy generation and use on low-income communities and communities of color.
- Maximizing equitable opportunities for clean energy jobs, economic development, stimulus, and energy investment dollars retention in Wisconsin.
- Strengthening the clean energy workforce through training and education while retraining workers affected by the transition from fossil fuel to clean energy sources.
- Protecting human and environmental health by reducing ecosystem pollution from fossil fuels.



Ribbon Cutting for Vernon County Electric Cooperative's Bluff Prairie Solar Project.

Photo Credit: Dairyland Power Cooperative

The CEP represents a portion of the action needed to address climate change by targeting an expeditious transition to a clean energy economy. 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. The plan is also designed to provide environmental justice organizations, nongovernmental organizations, advocacy groups, policymakers, utilities, businesses, state governments, Tribal governments, local governments, educators, and residents an actionable plan to transition Wisconsin to a robust and affordable clean energy economy.

¹ Wisconsin Executive Order No. 38 (2019). Retrieved 2024 from https://docs.legis.wisconsin.gov/code/executive_orders/2019_tony_evers/2019-38.pdf

² The United States of America Nationally Determined Contribution. United Nations Framework Convention on Climate Change. (2021, April). Retrieved 2021 from <https://unfccc.int/NDCREG>



CLEAN ENERGY TRANSITION VALUES

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

CLEAN ENERGY PLAN ACCOMPLISHMENTS

As the state of Wisconsin continues a path to a clean, reliable, and affordable energy future, the CEP focuses on four key pathways to create momentum and action to meet the above objectives:

- **Accelerate clean energy technology deployment** by increasing project funding options, investing in infrastructure, setting new emissions goals, expanding state energy resources for generations, promoting technology innovation, equitably expanding clean energy, and leveraging existing policies and programs.

- **Maximize energy efficiency** by strengthening standards and programs to reduce energy waste, create jobs, and save consumers money on energy costs.
- **Modernize buildings and industry** by addressing building codes, supporting electrification, expanding funding, and supporting industry and businesses in their transition.
- **Innovate transportation** by supporting the transition to low-to no-emission vehicles, refueling options, and planning and increased options for moving people around.

Additional ways the CEP ensures an inclusive transition include:

- Prioritizing health equity, environmental justice, and equitable economic development.
- Fast-tracking workforce development and a just transition.
- Accelerating government-led efforts (Lead-by-Example).

As part of President Joe Biden’s Investing in America Agenda, the 2021 Bipartisan Infrastructure (BIL) Law and the 2022 Inflation Reduction Act (IRA) have significantly accelerated Wisconsin’s pathways to a clean, reliable, and affordable energy future and provided substantial support for an inclusive transition.^{3,4} Investment from federal partners coupled with state leadership is instrumental for any state to advance clean energy initiatives, and the ongoing partnership between state and federal government is crucial to Wisconsin’s clean energy future. The CEP provides a blueprint for identifying and securing federal funding under both programs, and this report includes highlights of the progress Wisconsin has made to maximize BIL and IRA investments in Wisconsin.

³ Infrastructure Investment and Jobs Act, Pub. L. No. 117-58 (2021), Retrieved 2024 from <https://www.congress.gov/117/plaws/publ58/PLAW-117publ58.pdf>

⁴ Inflation Reduction Act, Pub. L. No. 117-169 (2022), Retrieved 2024 from <https://www.congress.gov/117/plaws/publ169/PLAW-117publ169.pdf>



Solar near the Carlson Farm Maintenance Building

Photo Credit: Brett Carlson

Source: RENEW Wisconsin Blog

CLEAN ENERGY SUCCESS STORIES: REAPING CLEAN ENERGY SOLUTIONS FOR RURAL WISCONSIN

For Brett Carlson, working to solve some of the complexities of rural farming with renewable energy began with a personal interest in installing solar on his family’s farm in northwest Wisconsin. The Rural Energy for America Program (REAP), a federal program that helps agricultural producers and rural small businesses switch to clean energy, seemed to be a perfect way to get funding for the project. However, his family struggled to navigate the complexities of applying for grant funding and designing and implementing a solar installation. Brett helped his parents complete a challenging grant application process and saw an opportunity to help others do the same. Thus, he began offering full service solar consulting for rural business owners, including farms, that wouldn’t break the bank, ensuring that the dollars they applied for would come back to their project directly.

REAP originally only covered 25 percent of total project costs but now covers up to 50 percent, thanks to additional funding provided by the Inflation Reduction Act. Businesses could also receive a 30 percent Federal Investment Tax Credit incentive. These incentives can help many rural businesses make the switch to solar, thus securing their energy future and helping the environment they depend on. Brett shared that he’s happy to see that the Inflation Reduction Act is doing what it set out to do – making sure that the money intended for farms and local businesses land right in the business owners’ hands instead of getting diverted in complicated financial systems and processes.

Brett now co-owns Aptus Energy where he continues to help farm and small business owners all over Wisconsin identify and apply for funding opportunities. He’s expanded to helping residential and other commercial businesses too. This crucial service has helped many individuals navigate processes that may otherwise be too complicated for them to do on their own. Seeing an opportunity where a challenge existed launched Brett’s business and will help Wisconsin expand renewable energy in the agriculture, commercial, and residential sectors.



Carlson Family, Left to right: Scott, Nick, Sara, Brett

Photo Credit: Brett Carlson

Background

Wisconsin's goal of 100 percent carbon-free electricity consumed by 2050 is outlined in Executive Order #38, issued by Governor Evers in 2019. With increased electrification of buildings, transportation, and industry, decarbonization of the power sector will be necessary to support economy-wide reductions. Deploying clean energy requires a multi-faceted effort from multiple stakeholders, including Wisconsin utilities, renewable energy developers, governments, and other partners.

Accomplishments

Expanded support, resources, and incentives to increase clean energy technology deployment occurred through the following:

- In accordance with Governor Evers' Executive Order #195, the Wisconsin Economic Development Corporation (WEDC) collaborated with the Governor's Green Ribbon Commission on Clean Energy and Environmental Innovation to establish the state's first Green Innovation Fund (GIF) to finance clean energy and other projects.⁵ WEDC appointed a Vice President of Productivity and Sustainability and is working to shape the GIF's structure, governance, and strategic planning. WEDC is investigating potential partnerships with national green banks funded through the U.S. Environmental Protection Agency (US EPA) Greenhouse Gas Reduction Fund, such as the Coalition for Green Capital, Climate United, and Power Forward Communities. Additionally, WEDC is exploring collaborations with the U.S. Department of Energy's (US DOE) Loan Program Office to capitalize the GIF. WEDC is actively building a portfolio of clean energy projects throughout the state that could be supported by the GIF.
- Since the program's inception in 2017, the Public Service Commission of Wisconsin (PSC) Office of Energy Innovation (OEI) has awarded \$40 million to 169 Energy Innovation Grant Program (EIGP) projects statewide. In April 2024, the OEI awarded \$7.88 million to 28 projects supported through BIL funding, focusing on reducing energy burdens, increasing clean energy jobs and job training opportunities, improving energy resiliency, and achieving other Justice40 priorities to support disadvantaged communities.⁶ Projects awarded in the most current round aim to increase the deployment of renewable energy and energy storage, support energy efficiency and demand response, bolster preparedness and resiliency in the energy system, and facilitate comprehensive energy planning.
- Wisconsin utilities are still on track to realize significant emissions reductions from electricity generation of 58 percent by 2028, considerable progress from the 40 percent reduction achieved as of 2020. One key driving factor in those emissions reductions is plans to retire three of Wisconsin's seven utility-scale coal facilities, which have a combined capacity of nearly 2,800 megawatts (MW). Those retirements will reduce coal from more than one-third to one-fifth of Wisconsin's electric generation mix.

⁵ Wisconsin Executive Order No. 195 (2023). Retrieved 2024 from <https://evers.wi.gov/Documents/EO/EO195-GreenRibbonCommission.pdf>

⁶ Justice40 A Whole-of-Government Initiative (2021), Retrieved 2024 <https://www.whitehouse.gov/environmentaljustice/justice40/>

- In place of coal plant retirements, utilities plan to add more than 2,500 MW of new solar energy capacity and the battery storage capacity mentioned above. Additionally, Wisconsin had more than 17,800 customer-owned renewable generation installations operating in 2023.
- On October 18, 2023, the US DOE's Grid Deployment Office selected Kaukauna Utilities to receive \$3 million through the BIL-funded Grid Resilience and Innovation Partnerships (GRIP) Program. The funds will enhance Kaukauna Utilities' electric system reliability and resiliency and upgrade infrastructure while maintaining cost-effective rates for its customers. If successful, the project will generate a projected 20 percent increase in reliability for customers with renewed investment in critical infrastructure serving the community; help maintain low-cost rates and reliable service for customers, and accelerate necessary infrastructure improvements by reducing the financial burden on ratepayers to achieve grid modernization objectives; equip the utility with the expertise to deploy advanced technologies, including Distributed Fault Location Isolation Service Restoration (D-FLISR), battery energy storage systems, and microgrids; and provide internship and apprenticeship opportunities for students.
- The PSC OEI, the state's designated state energy office, oversaw the development of new federally funded programs from the BIL and IRA. Nearly \$200 million will be made available through all funding provided, including the IRA Home Energy Rebate programs, Grid Resilience, increases to formula state energy program funding, Training for Residential Contractors, and the Energy Efficiency Conservation Block Grant, which was utilized to create the new Rural Energy Startup Program.

Microgrid and Minigrid

- In February 2024, the US DOE Office of Clean Energy Demonstrations announced award negotiation selections for 17 national projects for the Energy Improvements in Rural Areas program. Two of the 17 selections are in Wisconsin. Details on both are below:
 - ▶ The Resilience and Prosperity in Rural Northern Wisconsin project plans to utilize just over \$12 million in funds (\$9.7 million federal cost share and \$2.5 million local match) to deploy microgrids in the state's northernmost part. Led by the OSCE, in collaboration with the WEDC's Office of Rural Prosperity, the Red Cliff Band of Lake Superior Chippewa, Bayfield County, Cheq Bay Renewables, MuGrid Analytics, and Slipstream, Inc., the program will work with utility and renewable partners to install microgrids throughout Bayfield County and on Tribal lands. The project will deploy solar power, battery storage, and intelligent controls to enable islanding and electric vehicle charging stations. This project will support clean energy access in 28 rural communities in Wisconsin, developing projects that can serve as replicable models to boost energy resilience, clean energy deployment, and green jobs for rural communities across the state.
 - ▶ The Mashkiizibii Minigrid aims to deploy a hybrid minigrid (larger than a microgrid) to build energy resilience in communities that often face extreme weather events and power outages along the shores of Lake Superior. The Bad River Band of Lake Superior Chippewa (also known as Mashkiizibii in the Ojibwemowin language) will lead the project to deploy 5 MW of solar power plus 8-megawatt hours of battery storage. The project lead will also work in partnership with the University of Wisconsin—Madison's Clean Energy Community Initiative to reduce utility bills by 10 percent, increase financial benefits to Tribal citizens, offer employment opportunities and workforce development training for tribal citizens, and contract 50 percent of workers from the Tribal community.
- The Oneida Nation Health Campus Resiliency Project (HCRP) was initiated in the Fall of 2021; this microgrid planning and design project aims to provide sustained power during hazard events, including the design of peak shaving opportunities, develop an internal workforce to manage new energy technologies, and paves the way for energy sovereignty. A recent history of power outages provoked the need for power backup. The HCRP buildings include the Health Center, Anna John nursing home, Elder Service Apartments, and a daycare facility. Partners include the Oneida Nation Emergency Management (Lead), Oneida leadership, Public Works, Engineering, and Environmental, with Pacific Northwest National Laboratory+ Sandia National Laboratory (Energy Storage for Social Equity), Woven Energy, Federal Emergency Management Administration, and Wisconsin Emergency Management.



Red Cliff Band of Lake Superior Chippewa Early Childhood Care Center.

Photo Credit: Red Cliff Band of Lake Superior Chippewa

- The Red Cliff Band of Lake Superior Chippewa Early Childhood Care Center Solar Microgrid Implementation Project was established to support energy independence and back up electricity by implementing a microgrid system in Tribal facilities. The pilot microgrid system will prioritize drawing energy from the microgrid before utilizing power from the utility company. Additionally, battery storage integrated into the system will ensure a reliable electricity supply during emergencies and power outages.
- Xcel Energy and Gundersen Health System have agreed to create one of the first 100 percent resilient and renewable energy healthcare campuses in the United States. Through Xcel Energy's EMPOWER Resiliency, Gundersen will build an all-renewable energy microgrid on the health system's Onalaska Campus. The microgrid will combine a new battery energy storage system with Gundersen's existing solar panels and energy generated through a longtime partnership with the La Crosse County Landfill for even greater sustainability and resiliency during power grid outages.



Build Academy crew working on a new home construction
Photo Credit: Operation Fresh Start

Source: Operation Fresh Start

CLEAN ENERGY SUCCESS STORIES: BUILDING AN ENERGY-EFFICIENT FUTURE WITH OPERATION FRESH START'S BUILD ACADEMY

The Operation Fresh Start Build Academy offers a unique opportunity to gain valuable skills and experience in the construction industry. This program is paid, full-time, hands-on and designed for individuals between 18–24. Participants train alongside industry professionals, learning the standards of craftsmanship while building their professional networks. The Build Academy offers two tiers of training. Tier 1 focuses on residential construction, providing certifications in OSHA safety, first aid, and pre-apprenticeship, while Tier 2 offers experience in commercial construction on larger projects, emphasizing efficiency and job transition skills. Not only is Build Academy filling a gap in workforce development, but also training students in the best practices of energy efficiency.

Build Academy is primarily funded by Governor Tony Evers' Workforce Innovation Grant, a three-year, \$3.3 million funded by ARPA dollars and managed by the Wisconsin Economic Development Corporation and the Department of Workforce Development. Following Focus on Energy and Energy Star construction guidelines, Build Academy buildings are 27-30 percent more efficient than the state requires. For instance, by insulating the inside and outside of basements, Build Academy students can prevent significant heat loss at a minimal additional cost. This means substantial energy savings for their clients and a future workforce that is educated and prepared to propel Wisconsin into a new age of energy savings.

Energy efficiency is a necessity as Wisconsin begins its clean energy transition seeing as it reduces the amount of energy infrastructure required to power our buildings. Moreover, Build Academy aims to prepare its students for the future as they work to develop more training programs focused on renewable energy. Graduates of Build Academy leave with valuable credentials and hands-on experience, while building a foundation for a sustainable future for the construction industry.



Utility Scale, Community & Residential Solar

- Wisconsin is receiving a grant of \$62.4 million from the US EPA's Greenhouse Gas Reduction Fund Solar for All grant program to help fund solar systems for low- and moderate-income households across Wisconsin. WEDC sought the grant, through a competitive process, to develop long-lasting solar programs that enable low-income and disadvantaged communities to deploy and benefit from distributed residential solar, lower energy costs for families, create good-quality jobs in communities that have been most impacted by climate change, and advance environmental justice. To overcome challenges and provide equitable access to affordable clean energy to low-income households, the Wisconsin Solar for All initiative will leverage private capital to maximize federal Solar for All funding and build a sustainable financial assistance program beyond the initial five-year program timeline.
- The Midwest Tribal Energy Resources Association (MTERA) is also a recipient of the US EPA's Greenhouse Gas Reduction Fund Solar for All grant program. The organization is slated to receive \$62 million to distribute to Tribal Nations in Minnesota, Michigan, and Wisconsin. The primary goal of the grant is to deploy as much Tribally owned residential and community solar as possible on Tribal Nation lands in the Midwest. Additionally, they aim to provide the technical assistance that is necessary to plan and deploy the funding on residential and community solar projects, including a workforce development program to enhance Tribal self-determination and self-sufficiency to create rewarding solar careers in our Tribal communities and mobilize additional capital by aligning MTERA's program with other funding mechanisms like Clean Communities Investment Accelerator funding, philanthropy, and state Solar for All programs.
- Vernon Electric Cooperative's (VEC) Bluff Prairie Community Solar project provides economical solar opportunities to many members while diversifying its energy portfolio. Situated near Red Mound, Wisconsin, VEC's Bluff Prairie Solar Array is a 1.5 MW solar project. VEC has committed 60 percent of the project's 2,000 solar panels to community solar under the Energize Wisconsin program. With an annual membership fee of \$50 per panel, members are entitled to a monthly credit on their electricity bills. Of the total panels,

550 are earmarked for low- to moderate-income households at no charge. VEC's partner, Couleecap, Inc., will subscribe to qualifying households. Grants will be dispersed over a decade, amounting to \$25,000 annually, with an additional contribution of \$2,500 annually from VEC. The remaining 40 percent of the project will be sold to VEC's wholesale power provider, Dairyland Power Cooperative, under a buy-all, sell-all agreement. VEC collaborated with nine additional electric cooperatives within Wisconsin to secure an improved price and ensure a more substantial return on investment for their members. In total, 22 MW of new solar generation is coming online at the electric cooperatives across the state.

Energy Storage

- There has been significant growth in utility-scale energy storage deployments. Since 2019, the PSC has authorized 1,132 MW of utility-scale lithium-ion battery storage and is reviewing another 300 MW of similar battery storage, all associated with solar energy systems. In December 2023, the PSC approved the first utility-submitted “stand-alone” storage application by WP&L at Edgewater Power Plant in Sheboygan (99MW).⁷ Additional stand-alone energy storage project applications are anticipated for 2024 and 2025.
- In September 2023, funded by BIL, the US DOE Office of Clean Energy Demonstrations announced award negotiation selections for 15 projects across 17 states for Long Duration Energy Storage (LDES) Demonstration Projects. These projects fund various technology types to overcome technical and institutional barriers to full-scale deployment of LDES systems in diverse geographies and climates. Two of the selections are in Wisconsin and details provided from the US DOE announcement are below:
 - ▶ The Front-of-the-meter Utilization of Zinc bromide Energy Storage (FUZES) Project is led by NextEra Energy Resources, LLC. The project proposes the development of several 10-hour duration battery energy storage projects that use aqueous zinc technology for an in-front-of-the-meter application at multiple existing renewable energy sites, including Manitowoc County. The expected benefits of this development include increased capacity at the point of interconnection, reductions in GHG emissions, improved utilization of renewable energy generation facilities, and lower future energy costs. If the project is successful, there is high replication potential across future NextEra Energy Resources projects. NextEra Energy Resources plans to partner with local technical and community colleges to advance student readiness for good-paying jobs and careers in the energy sector.
 - ▶ The Columbia Energy Storage Project is led by Alliant Energy in partnership with WEC Energy Group and Madison Gas & Electric, Shell Global Solutions US, Electric Power Research Institute, University of Wisconsin (UW)-Madison, and Madison College. This project builds on an ongoing partnership between Alliant Energy, Columbia County, and the Ho-Chunk Nation by supporting their shared goals of advancing sustainable energy solutions and expanding economic opportunities. If successful, this project will be the first to demonstrate, on a commercial scale, a closed-loop carbon dioxide (CO₂)-based energy storage system. Alliant Energy expects to extract additional value from renewable energy resources, significantly reducing emissions over the next several years and positioning itself toward success in achieving net-zero

⁷ Application of Wisconsin Power and Light Company for a Certificate of Authority for Construction, Installation, and Operation of a Battery Energy Storage System, Known as the Edgewater BESS Project, in Sheboygan County, Wisconsin, 6680-CE-184, <https://apps.psc.wi.gov/APPS/dockets/content/detail.aspx?id=6680&case=CE&num=184>

CO₂ emissions by 2050. The project will likely be located on a brownfield site with a two-unit coal-fired power station scheduled for retirement in 2026. This project will also be part of the UW-Madison Clean Energy Community Initiative, which seeks to identify the values, needs, and priorities of underserved communities for the clean energy transition and bring together industry, policy, research, and community to co-create a sustainable path to an equitable clean energy transition. The technology provider is Energy Dome, which successfully demonstrated a 2.5MW CO₂-based energy storage system.

Regulatory Updates

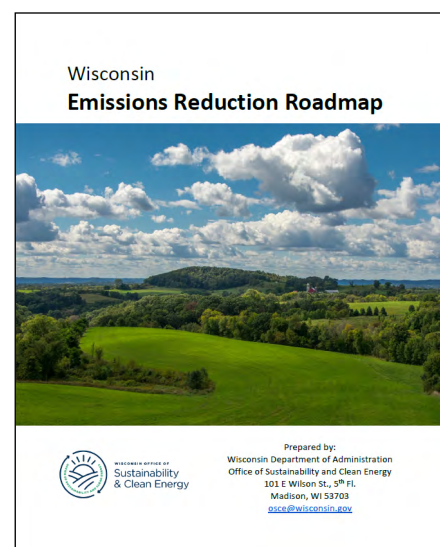
- The PSC completed work with interconnection rulemaking, and the updated interconnection standards rule (PSC 119) went into effect on May 1, 2024.⁸ The updated rules are modernized to incorporate new technologies and updated technical and certification standards and will help support enhanced grid stability and increased transparency in the interconnection application process.
- In March 2024, the PSC initiated further action to create consistency in utility net metering and parallel generation policies that remove solar development barriers and accelerate solar adoption, informed by orders issued in late-2023 rate case decisions.⁹ The updated scope may include conducting cost-benefit analyses and value of solar studies, assessing the viability of traditional net metering, and evaluating rate designs and incentive structures for parallel generation customers that would support the non-discriminatory cost of service-based rates.
- Through the Roadmap to Zero Carbon Investigation, the PSC continues to evaluate Performance-based regulation (PBR). Before taking additional action on PBR, the PSC commissioned a study to research energy burden and affordability metrics. The deliverables associated with this work are anticipated later in 2024, and Commission staff will incorporate this information into their work on PBR.¹⁰
- The PSC began work on the next iteration of the Strategic Energy Assessment (SEA), which will be published in the summer of 2024. The SEA provides updates on revised emissions goals set by utilities, progress to date towards those goals, and projected future progress on those goals through 2030. The 2024 SEA will also include updated information on resource planning consideration via updated utility filings and new, updated staff analysis. These SEA efforts are intended to capture these goals to the extent possible within the existing statutory framework.
- There was a continued focus on maximizing the co-benefits and financial value of agriculture clean energy projects. Throughout early 2024, Department of Natural Resources (DNR) staff coordinated water quality trading proposals for two additional dairy biogas facilities in Shawano and Brown Counties. These projects use phosphorus credits generated by reducing agricultural runoff to comply with effluent limits required when permitting the new manure digesters.

⁸ Rules For Interconnecting Distributed Generation Facilities, https://docs.legis.wisconsin.gov/code/admin_code/psc/119.pdf

⁹ Investigation of Parallel Generation Purchase Rates, 5-EI-157, <https://apps.psc.wi.gov/APPS/dockets/content/detail.aspx?id=5&case=EI&num=157>

¹⁰ Roadmap to Zero Carbon Investigation, 5-EI-158, <https://apps.psc.wi.gov/ERF/ERFsearch/content/searchResult.aspx?UTIL=5&CASE=EI&SEQ=158&START=none&END=none&TYPE=none&SERVICE=none&KEY=none&NON=N>

- The UW-Madison Division of Extension received a US DOE Renewable Energy Siting through Technical Engagement and Planning grant to expand state and local governments' decision-making capacity and expertise around large-scale renewable energy planning, siting, and permitting. The grant supports a coalition of groups, including the PSC, DNR, Clean Wisconsin, Wisconsin Land & Water, UW-Madison's Office of Sustainability, Oneida Nation, Wisconsin Farmers Union, Wisconsin Farm Bureau Federation, Wisconsin Towns Association, and Apex Clean Energy. The collaborative will develop and update solar and wind guidance and technical resources, expand education and outreach, engage rural and Tribal communities to articulate their values, and create developer agreements and other tools to help shape renewable energy projects.
- In fiscal year (FY) 2023, the Wisconsin Housing and Economic Development Authority revised the Qualified Allocation Plan for the Federal and State Housing Tax Credit program to increase possible sustainability points to incentivize further tax credit developers to incorporate energy efficiency and sustainability into the construction and rehabilitation of affordable housing developments. In FY2022, sustainability was 7 percent of the score; in FY2023, it was 9 percent which is significant for incentivizing. In the 2023-2024 Housing Tax Credit Program, the Wisconsin Housing and Economic Development Authority processed 40 applications, all incorporating sustainability points. Notably, 38 of these applications achieved the maximum sustainability points by securing a higher-level third-party sustainability certification. The remaining two applications also pursued sustainability points, albeit at a slightly lower certification level.
- In August 2023, the PSC OEI team published a new modernized Energy Statistics Portal to provide up-to-date, easier access to Wisconsin-specific energy data as a resource for decision-makers and provide a foundation for advocates, researchers, and innovators.¹¹
- In June 2023, the OSCE received a \$3 million planning grant through the US EPA Climate Pollution Reduction Grant (CPRG) program. The OSCE leads this effort to effectively address climate impacts, improve workforce opportunities, and address environmental justice for disadvantaged communities. This program will involve extensive engagement with coordinating entities and community engagement throughout the entire project; an overview and analysis of existing related climate action plans; energy and emissions benchmarking and scenario summaries; and tracking of outputs and impacts such as federal Justice40 initiative metrics, disadvantaged community benefits, emissions reductions, and workforce buildout. In March 2024, the OSCE published the Wisconsin Emissions Reduction Roadmap, enabling the state to apply for implementation funding. The program covers emissions-intensive sectors such as transportation, building, and industry.



¹¹ Public Service Commission of Wisconsin, Office of Energy Innovation, Wisconsin Energy Statistics Online Portal <https://maps.psc.wi.gov/portal/apps/experiencebuilder/experience/?id=fb6e6305e53e437eaa958f91246ec007>

Background

To simultaneously meet the state's clean energy, economic, and carbon goals, Wisconsin needs to drastically increase energy efficiency, which will require a significant ramp-up in investment. Not only are considerably higher levels of energy efficiency critical to reaching these goals, but they are also necessary to keep costs as low as possible in a future where energy needs are met with high levels of clean, renewable energy generation. Energy efficiency is one of the only strategies that holds the potential to significantly decrease energy burdens among homeowners, renters, and businesses.

Accomplishments

- In May 2024, the PSC OEI submitted its application for just over \$149 million in funding for two Home Energy Rebate (HER) Programs to US DOE: the Home Efficiency Rebate Program and the Home Energy and Appliance Rebate Program. Pending US DOE review and approval, the programs will be launched as soon as late summer 2024. The IRA HER programs will be delivered through Focus on Energy® to take advantage of existing resources and systems and support efficient and timely program delivery.
- Demand for heat pump offerings in Focus on Energy® continues to increase. As noted above, the Home Energy and Appliance Rebate Program is expected to launch in 2024, providing significant additional support for air-source heat pumps. The PSC will work to coordinate with other offerings, such as the heat pump support contemplated through other funding programs, like the US EPA CPRG program. The Focus on Energy® program continued collaboration with the Department of Administration (DOA)'s Division of Energy Housing and Community Resources (DEHCR) team to implement the multi-family solar and heat pump program. Projects must incorporate solar and air-source heat pumps to be eligible for the program.
- The 2023 Focus on Energy® Evaluation findings illustrate that businesses and residents work together to install cost-effective energy efficiency and renewable energy projects, upgrade our infrastructure, and improve the environment. Focus on Energy's® successful partnership with Wisconsin's utilities continues to reduce energy waste, strengthen our economy, and make progress toward a sustainable energy future for our state. The key findings from 2023 include:
 - ▶ Focus on Energy® returns \$3.75 to Wisconsin's economy for every \$1 invested.
 - ▶ Overall energy savings increased 22.5 percent in 2023.
 - ▶ Focus on Energy® helped businesses and residents save 7.5 billion lifecycle kilowatt hours (kWh) and more than 390 million lifecycle therms, which is enough energy to power 947,950 homes annually.
 - ▶ Participant overall satisfaction (residential and nonresidential) was 9.4 out of 10, a metric that has demonstrated consistently high satisfaction over the past several years.
 - ▶ Focus on Energy® helped Wisconsin avoid generating 6.8 million tons of CO₂ equivalent to taking 1.6 million cars off the road in one year.

- In addition to the traditional Focus on Energy® offerings, the PSC OEI continued to provide support for improving efficiency in the agriculture sector for the deployment of technologies that utilize high-carbon fuels, focusing on heaters, grain dryers, and other high-efficiency equipment. Through the US DOE State Energy Program funding, the Rural and Agriculture Propane program continues to see high demand. Funding has been extended through 2024 under the PSC’s recent approval of the 2024 State Energy Program Plan and Focus on Energy® will continue to support this agricultural offering throughout 2024.
- Focus on Energy® continues to issue annual Energy Efficiency Excellence and Trade Ally Contractor Excellence awards to Wisconsin businesses, schools, farmers, government entities, and contractors. Award winners are working above and beyond essential energy efficiency solutions.

Energy Efficiency Excellence Award Recipients (Location)	Trade Ally Contractor Excellence Award Recipients (Location)
2023	
<ul style="list-style-type: none"> • Forest County Potawatomi Community (Crandon) • Miltrim Farms (Athens) • Great Lakes Veneer (Marion) • Redline Plastics (Manitowoc) • Western Technical College (La Crosse) • Gehl Food and Beverage Companies, LLC (Germantown) • Kettle Moraine School District (Wales) • Milwaukee Metropolitan Sewerage District (Milwaukee) • UW-Platteville (Rock County) 	<ul style="list-style-type: none"> • Atlas Electric and Control (Wausau) • NCLED (DE Pere) • Ag Electrical Services, LLC (Brillion) • Veridian Homes (Madison) • Weatherization Services (Milwaukee) • Charlie Wilkomm – Lennox Industries/ Eric Sutkay – Kenosha School District (Pleasant Prairie)
2024	
<ul style="list-style-type: none"> • BiOrigin Specialty Products (Ladysmith) • Kaysun (Manitowoc) • Kerry Group (Jackson) • Menominee Indian Tribe of Wisconsin (Keshena) • PMI Manufacturing (Bloomer) • UW-Stout (Menomonie) 	<ul style="list-style-type: none"> • Automated Energy Solutions (Green Bay) • Badger State Lighting (Marshfield) • Ethos Green Power Cooperative (Viroqua) • Roberts Irrigation Company (Plover)

Figure 1: 2023 and 2024 Focus on Energy® Energy Efficiency Excellence and Trade Ally Contractor Excellence Award recipients.

Background

Direct emissions from commercial and residential buildings 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. After electric generation, transportation, and agriculture, buildings are Wisconsin's fourth largest emitting sector.

Accomplishments

- Wisconsin's Department of Safety and Professional Services (DSPA) partners with and participates in a US DOE-funded project updating the state's commercial and residential building codes. The Wisconsin Advisory Council on Building Sustainability will act as a resource for the rulemaking projects, which will first focus on the residential building code in 2024 and develop proposals to present to the Uniform Dwelling Code Council for their consideration for rulemaking.¹² In 2023 and early 2024, the Wisconsin Advisory Council on Building Sustainability met four times and considered the following topics: building performance standards, zero-carbon building policies, and commercial property-assessed clean energy. The Council also discussed Administrative Rules and considerations: a) CR 23-006, relating to the Plumbing Code Update, and b) CR 23-007, relating to the Commercial Building Code Comprehensive Update.
- Since it was signed on Earth Day 2023, the DNR's Green Tier Charter for Climate Action has brought together eight businesses and non-profits working toward climate resilience, adaptation, and mitigation. Participating organizations have started tracking and working to reduce their GHG emissions. In addition to reducing their emissions reductions through energy efficiency and deployment of renewables, they are also collaborating with their communities to plant trees to support healthy communities, increase carbon sequestration, and support progress towards accomplishing Wisconsin's Trillion Trees Pledge goal.
- WEDC granted \$250,000 to UW-Milwaukee Industrial Assessment Center (IAC) to offer free energy, productivity, and waste assessments to Wisconsin's small and medium-sized industrial facilities. The IAC partnered with Focus on Energy[®] and We Energies to complete 31 assessments. These assessments have identified potential annual savings of \$1.45 million, 9.3 million kWh of electricity, 57,000 metric million British thermal units (MMBtu) of natural gas, and 13,000 metric tons of GHG reductions per year.
- WEDC, in partnership with the Wisconsin Center for Manufacturing and Productivity, has a \$1 million grant program to assist participating businesses in Wisconsin with automation equipment purchases or leases. This funding lowers the risk of automation technology implementation by providing expertise and offsetting some costs. The grant is delivered through a two-step process that enables manufacturers to select the most appropriate technology, plan effective implementation, and receive financial support for acquiring that technology. Manufacturers must complete an Automaton Advisor Assessment with WMEP Manufacturing Solutions or the UW-Stout Manufacturing Outreach Center. This will result in an automation implementation roadmap with equipment recommendations. Participating businesses can receive grants worth up to \$35,000 to offset up to 20 percent of the cost to purchase automation or advanced manufacturing technology or equipment or up to \$15,000 to offset up to 10 percent of the costs to lease automation or advanced manufacturing technology or equipment.

¹² Wisconsin Advisory Council on Building Sustainability is created under Wis. Stat. § 227.13 and § 440.042(1), <https://dsps.wi.gov/Pages/BoardsCouncils/Sustainability/Default.aspx>



INNOVATE TRANSPORTATION

Background

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 the state's dependence on fossil fuels are critical to creating a clean, resilient transportation system and directly address climate change in Wisconsin.

Accomplishments

- State agencies and partners are working to support the transition to electric vehicles (EV) statewide:
 - ▶ Governor Tony Evers signed historic legislation, Senate Bill 791 and Senate Bill 792, now 2023 Wisconsin Acts 121 and 122, respectively, enabling the Wisconsin Department of Transportation (WisDOT) to receive and administer approximately \$78 million in federal funds under President Joe Biden's BIL to bolster the state's EV infrastructure.
 - ▶ The WisDOT manages the Wisconsin Electric Vehicle Infrastructure Program that funds the design, construction, acquisition, installation, operation, and maintenance of electric vehicle charging stations across Wisconsin. As highlighted above, starting in FY2023, over the course of five years, Wisconsin is eligible to receive approximately \$78 million from the Federal Highway Administration's National Electric Vehicle Infrastructure (NEVI) Formula Program. On May 23, 2024, WisDOT awarded \$23.3 million to support private industry construction of charging stations across Wisconsin after receiving more than 260 applications during the first round of Request for Proposals. The total cost for the 53 awarded projects is estimated at \$33.8 million, including the \$23.3 million in federal funds secured through the BIL and \$10.5 million in private financing. The selected applicants



include fuel retailers, hotels, and restaurants. Additionally, two Tribal Nations will receive over \$800,000 in funding, and 13 selected sites will be installed in disadvantaged communities. Wisconsin is the first state to award NEVI funds to a Tribal Nation. WisDOT continues stakeholder collaboration to inform planning, deployments, program evaluation, and annual plan updates.

- ▶ With the enactment of 2023 Wisconsin Act 121, EV charging stations (EVCS) devices that sell electricity by the kilowatt hour are now legal in Wisconsin and subject to regulation as commercial weights and measures devices, the same as an EVCS commercially selling electricity by time have been considered a weights and measures device according to Wis. Stat. Ch. 98. The Department of Agriculture, Trade and Consumer Protection will undergo rulemaking of ATPC 92 to provide clarity related to EVCS inspections and consumer protections.¹³
- In October 2023, the US DOE announced selectees for award negotiations for the Regional Clean Hydrogen Hubs. Wisconsin participates in two of the seven hubs selected, the Heartland Hydrogen Hub and the Midwest Hydrogen Hub. Wisconsin also participates in two separate, non-exclusive memoranda of understanding (MOUs) with other state coalitions identifying opportunities for advancing clean hydrogen production and use in the region. The MOUs signed by Governor Evers include the Midwestern Hydrogen Coalition with partnering states Illinois, Minnesota, Michigan, Kentucky, Ohio, and Indiana, and the Heartland Hydrogen Hub with partnering states Minnesota, Montana, and North Dakota. The incorporation of clean hydrogen has the potential to significantly reduce carbon emissions in the medium and heavy-duty trucking industry.
- As a part BIL, the WisDOT is leading Wisconsin's Carbon Reduction Strategy (CRS) to provide a critical pathway for reducing transportation carbon emissions. Specifically, Wisconsin's CRS is designed to identify overall strategies and projects and support related primary and complementary efforts to reduce transportation carbon emissions statewide. The CRS intends to achieve these goals in a manner appropriate to Wisconsin's population density and unique demographic and economic characteristics. From now on, designated metropolitan planning organizations will continue to be critical collaborative partners in the CRS implementation and related transportation carbon emission-reduction initiatives.
- The US EPA Clean School Bus Program announced its third round of 2023 Clean School Bus Rebates selectees. Wisconsin selectees include 22 school districts covering 86 vehicles, primarily EVs, for just over \$22.8 million.
- WisDOT is updating the Wisconsin Bicycle Transportation Plan and Wisconsin Pedestrian Policy Plan and combining them into the Wisconsin Active Transportation Plan 2050. The Active Transportation Plan will be a statewide long-range plan focused on human-powered modes of transportation, such as bicycling and walking. This plan will evaluate active transportation opportunities and needs, resulting in policies and actions aligning with and further Connect 2050, Wisconsin's statewide long-range transportation.

¹³ 2023 Wisconsin Act 121 relating to exemptions from public utility regulation regarding electric vehicle charging stations, installation and operation of electric vehicle charging stations by state agencies or local governmental units, and imposing an excise tax on electric vehicle charging. <https://docs.legis.wisconsin.gov/2023/related/acts/121#:~:text=of%20the%20statutes%3B%20relating%20to,tax%20on%20electric%20vehicle%20charging>



Wisconsin Climate Action Navigators Initiative Participants tour of Lindsay Heights Neighborhood in Milwaukee hosted by Walnut Way Conservation Corp.

Source: RENEW WI

PRIORITIZE HEALTH EQUITY, ENVIRONMENTAL JUSTICE, AND EQUITABLE ECONOMIC DEVELOPMENT

Background

Too many communities have been left out of the conversation on transforming our country's energy system and transitioning to clean energy. To mitigate the damage caused by climate change, these communities must be involved in decision-making on clean energy technologies, jobs, and financial and health impacts. For example, maximizing energy efficiency reduces energy costs for individuals, families, and communities with low to moderate incomes to ensure they benefit from Wisconsin's transition to clean energy. Technology deployment must also be affordable and available to all residents and communities.

Accomplishments

- With support from the US EPA CPRG program, the OSCE launched the Wisconsin Climate Action Navigators (WI CAN) Initiative. WI CAN intends to increase meaningful engagement related to climate impact reductions by leveraging the network of stakeholders in this space. This meaningful engagement goes beyond the traditional virtual listening sessions or online public comment efforts. The goal is to expand the network to get deeper into communities and empower communities to share their needs, projects, and barriers to implementing projects. The kick-off of participating navigators includes various organizations, governments (state, local, and Tribal), and non-profits. WI CAN and other outreach efforts

will provide input on the state's upcoming Comprehensive Climate Action Plan (CCAP), identify potential projects that could be eligible for federal funding, and identify and support technical assistance needs for local initiatives.

- In 2023, OSCE staff continue to engage in clean energy and sustainability outreach efforts throughout the state. Staff presented on the CEP and related work at 55 conferences, meetings, and events whose audiences included state agency staff, environmental advocacy groups, environmental justice groups, labor groups, utility representatives, nonprofits, businesses, Tribal Nations, and local governments. Their estimated reach at these events was approximately 2,727 individual stakeholders.
- The OSCE serves as a central source for information on funding and incentives for clean energy and sustainability efforts by stakeholders. The OSCE established an approach to provide one-on-one meetings with as many stakeholders as possible. The OSCE can gather specific information about projects and help identify needs and gaps, providing timely information on incentives, resources, or connections to other organizations to help them move their projects forward.
- In June 2024, DOA hired a director for the state's first-ever Office of Environmental Justice. The Office of Environmental Justice was created by Governor Evers via Executive Order #161 and is tasked with developing a framework and strategy for environmental justice work across the administration.

Background

Wisconsin must achieve an inclusive and equitable clean energy workforce by systematically training and preparing workers to transition to clean energy. The CEP intentionally works to provide clean energy job opportunities for those who have been excluded from the traditional energy economy. Opportunities should include training, apprenticeships, and high-paying jobs for workers. This also may include requirements for businesses that benefit from state clean energy policies and incentives to have a workforce that reflects the population-specific regions of the state.

Accomplishments

- In 2024, the OSCE in partnership with the Wisconsin Department of Workforce Development (DWD), will lead developing and implementing a clean energy workforce inventory, funded by a recently awarded philanthropic grant from the Joyce Foundation. The DWD has conducted a preliminary review of clean energy job classifications, which will inform the inventory. The next step will be for the OSCE and the DWD, in partnership with the public workforce system, training organizations, community-based organizations, union labor groups, and technical colleges, to identify and develop pathways into the industry. This inventory will map out the businesses that comprise Wisconsin's clean energy industry and the skills employers seek.
- Ingeteam, a renewable energy company whose Milwaukee plant is the only place where wind generators are built in the U.S., has partnered with its union, the International Brotherhood of Electrical Workers Local 2150, to design its first-ever wind generator assembly apprenticeship. Assisted by workforce development and educational professionals at WRTP | BIG STEP and the Milwaukee Area Technical College, the program will provide advanced skills training to help existing Ingeteam and Milwaukee-based employees attain the more sophisticated knowledge needed to repair and manufacture renewable energy products safely. This effort will help sustain Wisconsin's new clean economy and increase wages for those with new skills. The goal is to upskill Milwaukee's workforce with the leading-edge capabilities needed to build and repair renewable energy products.
- Clean energy programs are eligible to apply for the DWD Wisconsin Fast Forward funding under the Industry Sectors Worker Training Grants program. A sampling of training to date from the DWD Wisconsin Fast Forward funded projects is below:
 - ▶ The Midwest Renewable Energy Association trained 63 individuals with a North American Board of Certified Energy Practitioners® certified curriculum, which provided trainees with the most current technical information available in the industry. Many trainees successfully completed the coursework



Installation of Electric Vehicle Charging on Western Technical College's Campus.
Photo Credit: Xcel Energy

and passed the exam to earn the North American Board of Certified Energy Practitioners® Photovoltaic (PV) Associates credential. Trainees who took the courses necessary for the credential learned the fundamentals of solar installation, solar design, PV site assessment, basic electrical concepts, and concepts in job site safety. Other courses offered through the project taught students about the National Electric Code, battery basics, and basic solar finance.

- ▶ UW-Milwaukee promoted and coordinated paid internships in Wisconsin’s high-demand fields of green energy and clean water. UW-Milwaukee built partnerships with industries, such as battery and water treatment companies, and connected recruiting agencies to provide employment information for interns. At the end of 2023, 39 internships are approved to start, are in progress, or have been completed. Employment placement partners include Clarius, ArchSolar Inc., AO Smith, Rockwell Automation, and RPI Inc.
- ▶ Southwest Technical College and Wisconsin Battery LLC are coordinating training to employ at least 251 individuals being laid off by Energizer’s recently announced closures, resulting in the loss of 600 Wisconsin jobs. As they open new facilities in Fennimore and Portage, Wisconsin Battery LLC will continue the production of alkaline, zinc air, and silver oxide batteries at these new plants while transitioning to electric vehicle and green battery production. A sampling of occupations to be trained includes electrical engineering technicians, electro-mechanical technicians, heating and air conditioning mechanics and installers, maintenance and repair workers, machinists, and tool and die makers.
- The DWD also supports clean energy via its Eligible Training Providers List (ETPL). There are currently 11 unique programs listed on the ETPL that directly address clean energy, including Solar Installation Technician, Solar Energy Technology, Renewable Energy Technician, Wind Energy Technology, Wind Tower Climber, Wind Technician, Building Science & Energy Management, Energy Management Technology, Greenhouse Operations, Sustainable Food and Agriculture Systems, and Green Production. Additionally, the ETPL includes training programs such as Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R), that incorporate “green” principles in their more standard curriculum. More details on DWD ETPL programs can be found in [Appendix](#).
- Governor Evers’ Workforce Solutions Initiative, via the Worker Advancement Initiative and the Workforce Innovation Grant (WIG) program has also supported clean energy training:
 - ▶ The Boys & Girls Club of Dane County is using its \$3.5 million WIG award to educate youth about skilled trades apprenticeship opportunities, including those in construction, HVAC/R, and electrical that embrace “green” principles.
 - ▶ Operation Fresh Start is using its \$3.3 million WIG award to launch the “Build Academy,” which will train youth in skilled trades and construction careers.
 - ▶ The Workforce Development Board of South-Central Wisconsin, Carpentry pre-apprenticeship, and other skilled trades training have been provided funding to incarcerated individuals nearing re-entry.
- The DWD continues to provide support to communities and workers who will experience power generation plant closures. The DWD has had some communication with coal-based power plants that anticipate closures in the

next five years. It is early to begin delivering services to those employers and their workers as the employers do not want to lose staff prior to their intended timeline. Still, the DWD is working to build relationships now so we can be involved when the timing is right to provide layoff aversion and upskilling opportunities to those workers and ensure a smooth transition to other jobs in the energy sector or other industries.

- Across the state local workforce development boards and the greater workforce system work with industry, technical colleges, training providers, K-12 and youth programs, local governments and municipalities, and community partners to engage under-represented populations in training and employment programs. Based on the local needs and interests, they work on career and occupational pathway development, articulation, customized training, and apprenticeship models, offering the infrastructure and experience with documentation, data tracking, and accountability needed to develop successfully tailored programs.
- The DWD's Bureau of Apprenticeship Services (BAS) continues to support employers in developing new high-quality apprenticeship pathways and/or targeted training and curriculum within existing apprenticeship pathways that reflect emerging clean energy competencies. The DWD also works with employers and partners to develop certified pre-apprenticeship programs to assist individuals in successfully transitioning into corresponding registered apprenticeship programs that support the clean energy industry. Existing clean energy-related apprenticeship tracks include electrician apprenticeship, environmental service technician, HVAC/R, plumbing (water reuse practices), and electrical utility. These specific apprenticeship occupations have added or pivoted curriculum to clean energy practices. At state committee meetings, apprenticeship occupational stakeholders advise the Bureau on changes and trends in their respective apprenticeship occupations. They can inform the Bureau to add specific competencies for on-the-job learning. Also, the Wisconsin Technical College System conducts a five-year cyclical review of the apprenticeship curriculum, during which these items are assessed to be added or removed within their respective curriculum.
- UW-Eau Claire continued to offer Leadership in Energy and Environmental Design (LEED) Green Associate training, providing the knowledge and skills our students and employees need to promote and implement green building practices on campus and in the community. To date, 123 students and 25 faculty and staff have completed LEED training, which is available to students for free.
- In November 2023, the IAC received US DOE funding to be a Building Technology Assessment Center. The Wisconsin Building Technology Assessment Center project will train students and professionals in energy efficiency, energy storage, and smart building technologies.¹⁴

¹⁴ <https://www.energy.gov/articles/biden-harris-administration-announces-40-million-expand-clean-energy-workforce-training>

Background

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 called “Lead-by-Example” (LBE), where government entities analyze and transition their facilities and fleets to realize substantial cost savings, reduce GHG emissions, diversify energy use, build resilience, and procure more sustainable products.

Accomplishments

- In May 2024, Governor Evers joined the US Climate Alliance’s Executive Committee, the first governor in the Midwest to join their leadership since the Alliance’s inception in 2017. This announcement builds on his administration’s commitment to efforts that help advance equitable solutions to environmental challenges facing the state and nation, build a transformed, more resilient, clean-energy economy, and ensure a more sustainable future for all. The U.S. Climate Alliance is a bipartisan coalition of 24 governors representing nearly 60 percent of the U.S. economy and 55 percent of the U.S. population. The Alliance is committed to securing a net-zero future in America by advancing state-led, high-impact climate action solutions and achieving the goals of the 2015 Paris Agreement to combat climate change.

Tribal Nations

Tribal Nations throughout the state focused on efforts to reduce emissions, conserve energy, and transition to new technologies. Below are highlights from the Oneida Nation and Red Cliff Band of Lake Superior Chippewa:

- In 2022, the Oneida Nation, located west of Green Bay, launched a Tribal Residential Energy Program to encourage Tribal homeowners to install high-efficiency appliances. Rebates are available for furnaces, boilers, heat pumps, weatherization, and solar (solar was offered in 2022 only). Partners for this effort include Focus on Energy®, PSC OEI, the UW-Madison Clean Energy Communities Initiative (CECI), Slipstream Inc., Diamond Heating and Cooling, Oneida Digital Technologies Services, Oneida Inter-Governmental Affairs, and Oneida GIS. This program will be used as a template for the next phase, which will utilize the IRA Home Electrification and Home Rebates Programs.
- The Red Cliff Band of Lake Superior Chippewa (Red Cliff), located in the northernmost part of Wisconsin, launched a Tribal Solar Gap Project, which serves as a cost-share with the Resilience and Prosperity in Rural Northern Wisconsin Project (see Accelerating Clean Energy Technology section above). Funds will be allocated to establish a new full-time, permanent Energy Specialist position within the Red Cliff Environmental Department and to purchase supplies to support the Resilience and Prosperity in Rural Northern Wisconsin Project. The Energy Specialist will lead internal discussions on renewable energy initiatives, provide technical guidance on energy projects, participate in external energy committees, review energy policies, assess their impacts, and build strategic partnerships.
- With support from Volkswagen Settlement funds, Red Cliff Environmental Department worked with various tribal programs to identify tribal work vehicles eligible for repair and replacement. This resulted

in replacing the Red Cliff Fish Company's refrigerated truck and will provide environmental mitigation by reducing emissions of nitrogen oxides.

- With increased emissions reduction, climate, and energy-related projects, and the availability of federal grants and incentives through the BIL and IRA, the OSCE conducted outreach and continued to build relationships with the 11 federally recognized tribal nations in the state.
- Through the US EPA CPRG Program:
 - ▶ Red Cliff worked on an Energy Planning Project. The project will identify key tribal facilities where renewable solar, battery storage, and EV charging projects are feasible and can be implemented to add self-generation capacity for operations, reduce GHG emissions, and create workforce development opportunities for Red Cliff community members.
 - ▶ The Oneida Nation completed a Carbon Inventory and a Priority Climate Action Plan (PCAP). Initiated by MTERA, a coalition of Tribal Nations participated in a carbon inventory with Tribal staff. The PCAP developed contains specific information about emissions and a list of priority practices that most effectively impact emission levels. This PCAP provides a premise for preparing and tracking emissions reductions via a CCAP for the next few years.
 - ▶ The OSCE contacted Tribal Nations to encourage them to participate in the federal program. Tribal Nations were encouraged to submit their grant applications or be included in the State Plan for funding. On April 1, the OSCE applied to the US EPA for \$176 million to support the implementation of the Wisconsin Emission Reduction Roadmap, which includes support for Tribal Nations. Notification of awards is expected in July 2024.

Local Governments

Local government accelerated efforts to deploy and implement energy efficiency, renewable energy, and climate action. Many Wisconsin cities and communities are implementing climate action and clean energy plans and strategies. Below is a sampling of work done by local governments throughout the state:

Renewable Energy

- Antigo Public Library installed the first solar array within a 60-mile range. The Library received an EIGP grant covering 75 percent of project costs and a grant from RENEW Wisconsin's Solar for Good Initiative. The 87-kW system will generate 91,934 kWh annually and save \$8,000 on electricity costs, which will be shifted to library programming and services, including public tours of the facility.
- Dane County became the fourth county in the U.S. and the first county government in the state to be powered by 100 percent renewable energy.
- The City of Eau Claire and their utility provider, Xcel Energy, signed a Renewable Energy Rider Service Agreement, allowing the city to buy renewable energy from a new, planned 5 MW solar garden in Lake Hallie. This agreement will allow the city to claim more renewable energy and save money on their electric bills, bringing them another step closer to reaching their carbon neutrality by 2050 goal.

Clean Energy and Climate Action Planning

- The City of Oshkosh was awarded EIGP funding to assess the city's municipal buildings and develop a comprehensive energy roadmap. The project will analyze building characteristics, assess solar potential, and identify energy-related investments.
- The City of Stevens Point, in partnership with Wisconsin Local Government Climate Coalition (WLGCC), ICLEI-Local Governments for Sustainability USA (ICLEI USA), and over 20 other WLGCC member communities, was awarded \$178,000 in EIGP funding to support local governments' community-wide comprehensive energy planning efforts. The project will provide local governments with foundational services to complete a GHG inventory, help identify energy strategies that align with Justice40 priorities, and streamline the process of collecting energy and emissions data.
- The City of Edgerton completed its Municipal Energy Plan. This plan helps identify and prioritize cost-effective energy-saving opportunities to help the city meet its goal of reducing carbon emissions by 25 percent by 2025. It will also help position the community to utilize state and federal funding available through Focus on Energy and IRA.
- The City of Green Bay recently approved a comprehensive Clean Energy Plan, which will serve as a roadmap for how the city will meet its climate goal of 100 percent clean energy and carbon neutrality community-wide by 2050.
- The City of Milwaukee approved the Milwaukee Climate and Equity Plan. The plan is the result of over three years of planning and public input through the City-County Task Force on Climate and Economic Equity. It outlines 10 Big Ideas to reduce greenhouse gases, increase racial equity, and make Milwaukee a prosperous city for the future.

Energy Efficiency & Buildings

- Since 2020, the City of Menomonie has been pivotal in driving energy efficiency in its community by setting local policies, implementing projects, and engaging with local stakeholders. They recently were awarded an EIGP grant to upgrade their aging HVAC system in City Hall to include modern, energy-efficient temperature controls that can be monitored and adjusted remotely. The city highlights this project and the lessons learned for local businesses and facility managers during meetings to inform the community and encourage others to tackle energy efficiency projects.
- The City of La Crosse was awarded funding to increase energy efficiency for up to 500 homes through complimentary home energy assessments and energy efficiency upgrades.
- In April 2024, the US DOE awarded two Energy Future Grants Program awards in Wisconsin, providing financial and technical assistance to support multijurisdictional partnership efforts to advance innovative clean energy programs that will enhance energy affordability, access, and opportunities for communities. Details from the US DOE announcement are below.
 - ▶ The City of River Falls was awarded \$500,000 for a community-based/electrification together project to create a universally scalable and adaptable approach for crafting localized, adaptable electrification



Source: Focus on Energy Blog

CLEAN ENERGY SUCCESS STORIES: THE CITY OF MENOMONIE ADVANCES SUSTAINABILITY GOALS

Facility Manager's Meetings hosted by the City of Menomonee for local businesses to gather to learn more about energy efficiency and renewable energy projects.

Photo Credit: Bill's Distributing in Menomonee

The City of Menomonee is leveraging stakeholder partnerships and grant resources to focus on energy-saving programs and achieve carbon-free municipal facilities by 2050. Megen Hines, Menomonee's Environmental Program Coordinator, has led the city's energy and sustainability initiatives. The city's Comprehensive Plan integrates energy efficiency into strategic planning efforts, targeting public buildings, local businesses, residents, and educational institutions. These programs help the community save money on energy, conserve natural resources, and reduce the energy burden on underserved households.

Megen shares that grant and funding opportunities have been crucial to Menomonee's success. With support from their utility, Xcel Energy, and a strong relationship with their Focus on Energy Advisor, Menomonee created and implemented a two-year Energy Action Plan. Additionally, after receiving the Public Service Commission's Energy Innovation Grant, the city was able to complete significant portions of ongoing projects ahead of schedule.

Menomonee's strategic sustainability plan has garnered widespread vocal support and resulted in tangible successes. The city's commitment to sustainability is evident in preserving over 350 acres of green space in local parks and in converting traffic signals, runway lights, and lighting in public buildings, such as the library and fire station, to LEDs. As other communities across the state develop their own environmental sustainability goals and initiatives, Wisconsin will continue to experience substantial energy and natural resources savings.

programs across sectors in a collaborated effort uniting states, localities, and tribal communities in partnership with community-owned electric utilities and non-profit organizations. This project combines electrification with weatherization, which will decrease utility costs and greenhouse gas emissions and increase adaptability to cold and extreme weather events.

- ▶ The City of Madison, in partnership with the Cities of Sun Prairie and Middleton, was awarded \$500,000 to help scale up the Efficiency Navigator program. This initiative provides free energy efficiency and upgrades to small and medium-sized multifamily housing.

Electric Vehicles/Charging

- In 2023, Ashland County, in partnership with UW Extension and Cheq Bay Renewables, initiated an Electric Vehicle Planning Workgroup to facilitate its transition to electric vehicles. The group hopes to be prepared for future funding in 2024.
- The City of Racine was awarded EIGP funding to install an EV charging station. In 2023, they also received a \$1.2 million grant from the US DOE, which will fund a solar array at the 1900 Kentucky Street transportation facility.
- In 2023, Village of Whitefish Bay approved its first EV charging stations to be installed. The two dual-port EV charging stations will be placed in the municipal parking lot behind the former Fox Bay Cinema building.
- The City of Madison acquired its 100th EV to make its transportation more sustainable. In addition to the EVs, the City has 150 hybrid electric cars in operation and nearly 500 other vehicles running on biodiesel blends. These efforts have reduced CO₂ emissions by more than 15 million pounds since the sustainability program launched in 2018.

State Agencies

State agencies collaborated to address climate change and transition to clean energy. Below are examples of this work:

- With support from the U.S. Climate Alliance, the OSCE launched the LBE Technical Advisory Team, made up of 66 participants across 22 state agencies. The participants have a vested interest in implementing the state's LBE efforts through operational changes and the use of data analysis for tracking. The team includes multiple subject matter experts from budget, facilities management, fleet, procurement, sustainability, information technology, and outreach.
- The Universities of Wisconsin Office of Capital Planning and Budget Sustainability Coordinators have created new methods, such as direct reporting from contracted vendors, to obtain GHG data for all campuses, which will soon be displayed in a dashboard. Data now being collected centrally for all campuses includes usage information on state heating plant oil and natural gas, propane, motor fuels, livestock, on-site generated and purchases renewable energy, purchased electricity and natural gas for every metered account, air travel, athletics travel, rental car travel, fuels purchased with fuel cards, and reimbursed mileage. Work is still underway to create methods of collecting robust and accurate data in the following emissions and usage categories: refrigerants, fertilizers, commuting to and from campus, chartered buses, solid waste, water

and wastewater, and procured goods and services. Centralized data reporting will help the Universities of Wisconsin identify strategies and track progress in emissions reduction.

- UW-Madison recently released ambitious Environmental Sustainability goals for their campus. These goals included:
 - ▶ Creating the Sustainability Research Hub that will work across departments to help procure funding for interdisciplinary sustainability research.
 - ▶ Obtaining 100 percent renewable electricity by 2030 and 100 percent zero emissions energy by 2048.
 - ▶ Increasing environmental sustainability education capacity to meet all current and future demand.
 - ▶ Achieving a Zero Waste campus by 2040 by focusing on sustainable procurement and resource management.
 - ▶ Reaching STARS Gold by 2025 to continue campus-wide sustainability initiatives.

Prioritizing environmental justice:

- The DNR continues to build capacity, models, and initiatives to prioritize more inclusive stakeholder input practices and to acknowledge and understand existing disparities when identifying solutions and amending practices to address climate change. For example, the DNR successfully applied for a \$1.9 million America the Beautiful Challenge grant to foster effective manoomin (wild rice) management through state and Tribal intergovernmental collaboration after similar proposals from Governor Evers have been rejected by the state legislature. The DNR and partner Tribal Nations, organizations, and research partners will leverage the funding to develop strategic outreach, engagement, and implementation methods. Spiritually, culturally, and nutritionally important to Native Americans in Wisconsin, manoomin is particularly vulnerable to a range of climate change impacts.
- UW-La Crosse hosted Robin Wall Kimmerer as a keynote speaker in March 2023. Her visit and address touched on topics of environmental justice, and she was able to interact with thousands of community members over the course of her time in La Crosse.
- As noted earlier, in June 2024 DOA hired a director for the state's first-ever Office of Environmental Justice, created by Governor Evers via Executive Order #161.

Reducing energy consumption and GHG emissions:

- The PSC anticipates a planning and engagement process starting in 2024 to review its current approach to the Energy Use in State Facilities report and identify potential modifications that can help future reports provide as much value as possible, including (but not limited to) supporting Lead by Example initiatives.
- The DNR is collaborating with the PSC and Focus on Energy® for guidance on an energy and water use benchmarking pilot project targeting 30 of the largest DNR-owned facilities managed by the Department's Bureau of Facilities and Lands. Lessons learned from the project will help to inform future energy efficiency and emissions reduction efforts across DNR facilities.

- The Department of Corrections (DOC) received approval to fund a solar project at the Wisconsin Secure Program Facility in Boscobel, WI. The project is expected to be operational by the end of 2024. The DOC also completed a North-South Cell Hall Improvement project at the Green Bay Correctional Institution in Allouez, WI, which resulted in a 178,980 kWh electrical use savings at the facility.
- In March 2024, UW-Green Bay completed an energy efficiency project for the Laboratory Science Building that installed Variable Frequency Drives on the large exhaust fans serving the building. The project will reduce nuisance noise and extend the life of equipment, and the energy savings are expected to pay back the project costs within two years.
- UW-La Crosse continues to leverage building-level utility data for natural gas, steam, chilled water, and electricity to inform decisions and ensure intended building performance. UW-La Crosse is ahead of the curve in net metering and gets daily data on electricity, natural gas, steam, and chilled water. This data is reviewed by a Utilities Team weekly to make sure that buildings are operating properly and not deviating far from typical energy/resource use.

Transitioning the state’s vehicle fleet to clean fuels and zero-emission vehicles:

- In 2023, the DNR acquired six new electric vehicles and 24 new gas-electric hybrid vehicles. In addition, the DNR continued to strengthen its network of EV chargers, with eight new charging stations coming online for a total of 20 charging stations at seven department facilities. Since 2018, the DNR has lowered its fleet carbon emissions by 1,464 metric tons through the Greening the Fleet Initiative. EVCS construction is now complete at DNR Service Centers in Eau Claire, Fitchburg, Green Bay, and Spooner. The DNR’s first electric pickup truck was delivered in April 2024.
- UW-La Crosse completed a Fleet Electrification Study with Sawatch Labs to determine the electrification potential of campus vehicles. Short-term actions as a result of this study include reducing idle time. Long term implementation of EVs in the Campus vehicle inventory will be guided in part by the results of this study. UW-La Crosse is entering into Xcel Energy’s Fleet Electrification Advisory Program, which will allow for up to 50 campus vehicles to be monitored for daily miles driven, idle time, and more. With that data, candidates for EV switches will be identified. This process should accelerate the transition to EVs.
- UW-Parkside installed four Level 2 EV chargers in a parking lot for students, staff, and visitors to use.

Reducing Water Consumption:

- The DOC completed a North-South Cell Hall Improvement project at the Green Bay Correctional Institution in Allouez, WI, which resulted in a 31,206,400 gallon per year reduction in water consumption at the facility.

Supporting clean energy and energy efficiency projects:

- The DOC is pursuing seven Light Emitting Diode (LED) lighting upgrade projects. Once completed, the combined projects will produce guaranteed savings of \$144,304 annually. The DOC also updated the electrical/lighting, electronics, heating, and ventilation systems in the North and South Cells and plumbing in the South Cells at the Green Bay Correctional Institution. The heating system was well over 60 years old and was replaced to provide reliability for the cell units within the correctional facility.



UW-Stout General Services Building solar panel array

Photo Credit: UW-Stout

- UW-Eau Claire is working with its local utility to support clean energy development via a Renewable Energy Rider for 2.8MW of solar. The utility signed the contract, and solar is expected to come online in 2025. The University is also breaking ground on a new sustainable Science Health Science Building, including a highly efficient HVAC fume hood system.
- UW-Parkside's 2.08 MW PV tracker array on campus grounds began operating around Jan 1, 2024.
- UW-Stevens Point completed a large energy efficiency and renewable energy project that included interior lighting upgrades in multiple buildings and a new 165-kilowatt solar photovoltaic array on the roof of the Chemistry/Biology building.
- UW-Stout installed photovoltaic solar arrays totals totaling 400 kilowatts on the rooftops of the General Services Building and Jarvis Hall Tech Wing. The project also includes LED lighting upgrades in Applied Arts, Harvey Hall, Jarvis Hall and the Sports and Fitness Center; building envelope weatherization improvements in 22 campus buildings; and installing new destratification fans in the Sports and Fitness Center.

Wisconsin is well-positioned to continue advancing toward a clean energy economy, workforce, and state built for the 21st century. This movement will improve public health, provide reliable energy resources, lower family costs, and create thousands of new, family-supporting jobs.



NEXT STEPS

Moving the CEP and its implementation forward will continue to require three key elements: (1) ongoing stakeholder engagement; (2) measurement and verification of strategies; and (3) an annual progress report that reports ongoing data collection, synthesis, and analysis that is accurate and relevant to understanding Wisconsin's evolving clean energy ecosystem and CEP implementation progress.

Wisconsin's CEP continues to provide a framework to ensure that Wisconsin businesses, communities, and residents are well-positioned to share in the work and benefits of this plan. The OSCE will continue its role in implementing the CEP, seeking input on strategies and securing additional resources to help the state transition to a clean energy economy. The OSCE will also continue to consider and advise on the status of Wisconsin's energy generation and use, emissions, affordability, and social factors that may influence the pathways.

The recent assessment report provided by the Intergovernmental Panel on Climate Change (IPCC) emphasizes key findings stating that anthropogenic climate impacts continue and will negatively affect people and ecosystems with every fraction of a degree of warming. The IPCC assessment underlines that adaptation and mitigation measures, systemwide transformations, and a just transition will help us to build climate resilience. Still, we need substantially more financing to scale solutions across multiple sectors effectively. Inaction in Wisconsin would have tremendous costs to our communities—especially low-income and other communities that face disproportionate impacts of climate change, our agricultural industries, statewide infrastructure, and our economy. As such, inaction is not an option, and as outlined in this report, Wisconsin continues to make important progress in our collective transition to a clean energy economy.

APPENDIX

Department of Workforce Development Eligible Training Providers List

Program Name	Institution Name	Program Published Date	Program Description
Greenhouse Operations	Fox Valley Technical College	01/15/2024	In the fast-growing and ever-changing field of horticulture, the Greenhouse Operations associate degree is a great opportunity to become a valuable member of the horticulture industry. This degree will prepare you for a variety of careers in the greenhouse field. You'll apply the latest hands-on technologies in an environmentally friendly and sustainable practice. Your training will include propagating and growing plants, learning hydroponic food production, working in outdoor settings, diagnosing pest issues and designing a greenhouse growing operation. Instruction covers a wide array of plant types.
MSSC Green Production	Innovative Educational Solutions Institute Inc	08/31/2023	Green Production training outlines the steps required to implement a company Green Production Program. 1. Describe green manufacturing 2. Describe why environmental training should include information on the latest technology advancements in manufacturing 3. Train workers in Environmental Issues 4. Conduct Environmental Incident and Hazard Investigations 5. Conduct Preventive Environmental Inspections 6. Implement and Promote Environmental Programs, Projects, Policies or Procedures
Greenhouse Operations	Gateway Technical College	11/26/2019	The Greenhouse Operations program trains students in greenhouse growing and operations, hydroponics, retail garden center and floral shop management. Hands-on experience in a commercial greenhouse, ornamental gardens and an operating urban farm are part of the learning experience. Plant identification, care and culture are key elements of the program, as are technical and graphic skills, sustainable methods for plant care and creative approaches to problem solving and landscape design. Students can gain a specialized skill set in landscape which emphasizes landscape design, sustainable landscape management, and landscape estimating and business operations. Students engage in various industry visits to enhance the learning experience.
Renewable Energy	Chippewa Valley Technical College	11/21/2019	This Embedded Technical Diploma prepares students with skills necessary for basic geothermal, solar PV, solar thermal, and wind services. After successful completion, students have the opportunity to apply these credits to the Air Conditioning, Heating, Refrigeration and Renewable Technology 1-year technical diploma and the 2-year associate degree.
Renewable Energy Technician	Mid-State Technical College	11/21/2019	The only program of its kind in the Wisconsin Technical College System, Mid-State's Renewable Energy Technician program prepares students to design an integrated portfolio of renewable and traditional energy-producing systems. Graduates develop a working knowledge of green building concepts and energy-efficient design principles as well as the foundation needed for an entry-level position in the heating, ventilation, and air conditioning (HVAC) fields. In this program you'll learn to perform site assessments and recommend appropriate renewable energy technologies, sell and market renewable energy technologies, and manage renewable energy installation projects. Mid-State's unique facilities, a variety of brands of equipment and software for training, experienced faculty, and off-campus design opportunities make this program one-of-a-kind.

Department of Workforce Development Eligible Training Providers List

Program Name	Institution Name	Program Published Date	Program Description
Solar Installation Technician	Western Technical College	11/08/2019	Solar energy is a growing industry in western Wisconsin. The Solar Installation Technician certificate is designed to address the needs of regional utility power suppliers that offer renewable energy options, as well as private companies that provide solar solutions for residential, commercial, non-profit, and government sectors. Western has several solar panel systems that not only provide power to buildings, but offer the perfect, real-life training opportunity.
Building Science & Energy Management	Western Technical College	11/06/2019	In the United States, buildings represent one of our biggest energy consumers. As a result, buildings have been targeted for energy reduction strategies to reduce cost and dependence on carbon-based fuels. Building Science and Energy Management will examine the built environment and how it relates to energy using the latest research, tools, and technology available. You will gain hands-on experience working with community projects and in living laboratories in Western's state-of-the-art facilities. Study topics include energy auditing, energy management, renewable energy systems, and integrated design. The focus of the program is to prepare you for entry-level work in the growing renewable energy, energy efficiency, and building systems industry. Having these unique skills will give you a leg-up in a competitive job market.
Energy Management Technology	Northeast Wisconsin Technical College	10/24/2019	Energy expenses make up a part of every business' bottom line. Employers are seeking those skilled in monitoring energy consumption with the ability to detect and evaluate energy efficiency opportunities. Graduates of the Energy Management Technology associate degree program are equipped to lead businesses' energy management initiatives. Energy managers work within a variety of business sectors: utility companies; energy equipment companies; government agencies; and heating, ventilating, air conditioning and refrigeration contractors. Graduates may also find careers as energy auditors, energy management consultants, or energy program coordinators.
Solar Energy Technology Associate Degree	Northeast Wisconsin Technical College	10/24/2019	The Solar Energy Technology program provides installers, designers, and technical sales personnel the skills to assess sites; design systems; an install, operate, and maintain solar electric and solar thermal systems for residential and commercial applications in the growing renewable energy industry. Potential employment possibilities will be with existing solar, electrical and mechanical contractors to help expand their offerings of solar energy technologies. Other possible areas of employment are with energy consulting firms, design firms and utilities. With additional education and experience, graduates can expand their careers to energy analyst, journey person electrician/plumber, project manager, energy engineer, and environmental consultant.
Sustainable Food and Agriculture Systems	Northeast Wisconsin Technical College	10/23/2019	As a graduate of the Sustainable Food and Agriculture Systems associate degree program, you're ready for careers in sustainable gardening, field crop production, livestock operations as well as emerging areas like aquaponics. You will have the necessary knowledge to run your own successful food-related business and add value to your farm products or be qualified for employment in a variety of positions associated with sustainable agriculture, including commercial gardens, livestock operations, farmer support, and local food system efforts.