ENVIRONMENTAL LAW & POLICY CENTER

A Tale of Two States

Minnesota's Clean Energy Policies Outpace Wisconsin's

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Introduction

Neighboring Minnesota and Wisconsin have much in common, but different renewable energy policies have created very different results. Minnesota is larger in area, but slightly less populous than Wisconsin. Both states have large agriculture and manufacturing sectors, in addition to abundant natural resources like forests, lakes, and wetlands that support tourism and recreation.

While Minnesota is transitioning quickly from a fossil fuel-dominated economy to a healthy clean energy economy, Wisconsin has made much slower progress. Fossil fuels impose many costs on society, producing numerous pollutants and harming human health. Carbon pollution is especially dangerous for its broad-sweeping effects. Minnesota and Wisconsin must import expensive fossil fuels from other states because neither has fossil fuel resources in-state. Renewable energy enables each state to increase energy self-reliance while keeping energy dollars at home.

Today, renewable wind and solar continue to tumble in price while fossil power is an increasingly expensive source of electricity, by comparison. Minnesota has a suite of clean energy policies that help drive the development of wind and solar power, while Wisconsin has a few modest and outdated policies.

This report demonstrates how Minnesota became a clean energy leader, while Wisconsin's policies have lagged behind. As a strong manufacturing state, Wisconsin benefits from the national growth of the renewable energy industry and could grow even more with modern and robust renewable energy policies.

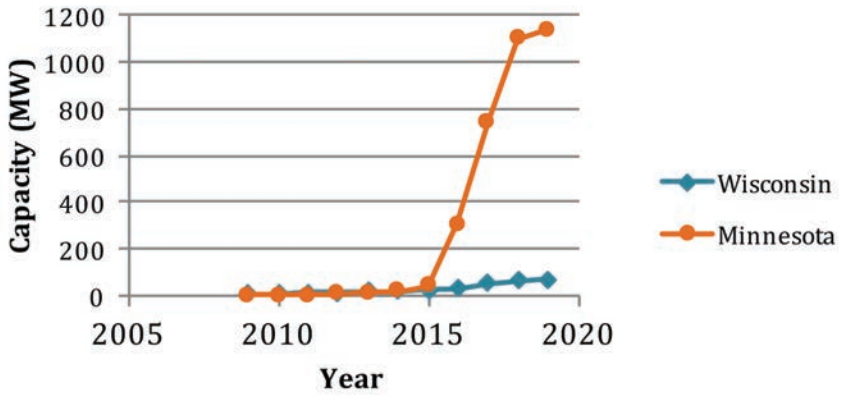
Montfort Wind Energy Center, WI

Renewable Energy Policy Results

Electricity Generation and Capacity

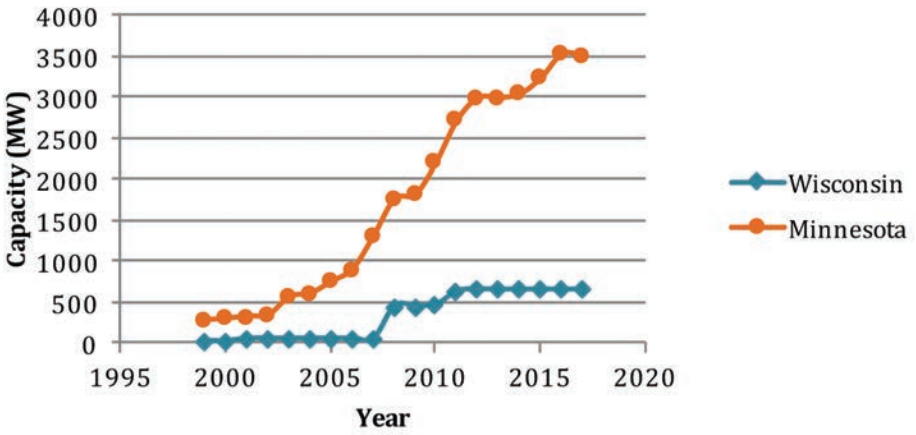
Minnesota has made great progress toward producing clean energy with modern technology, thanks to a suite of innovative energy policies, while Wisconsin remains heavily reliant on burning coal with old technology. Wisconsin can learn a lot from Minnesota to move "Forward."

Figure 1: Installed Solar Power Capacity (megawatts)



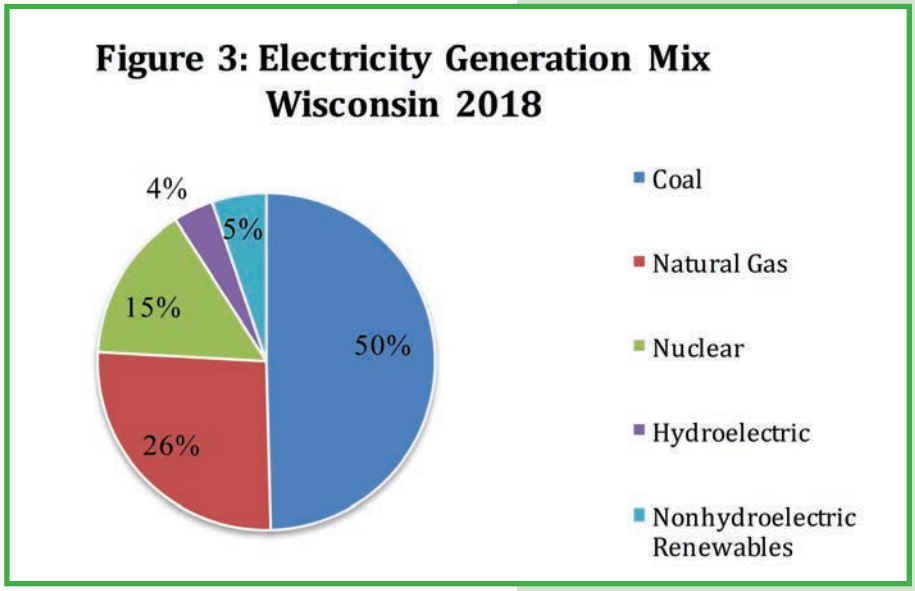
Source: SEIA

Figure 2: Installed Wind Power Capacity (megawatts)

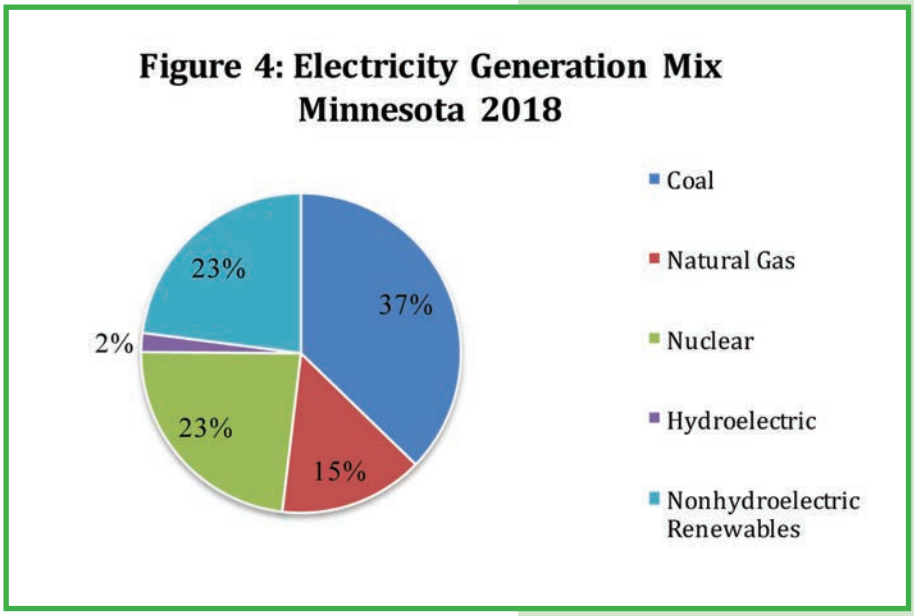


Source: WindExchange

Figures 1 and 2 show dramatic growth in Minnesota's installed solar and wind capacity, while Wisconsin lags behind.



Source: EIA



Source: EIA

Figures 3 and 4 show Minnesota has much less coal generation and far more renewable power generation than Wisconsin.

Figure 5 shows Minnesota has over **5 times** the wind capacity and over **16 times** the solar capacity as Wisconsin. Figure 6 shows Minnesota ranks much higher in terms of power generated by wind and solar. Wisconsin regulators recently approved several large solar projects that will result in more than 500 MW of new solar in Wisconsin. This is a positive development, but to achieve growth of a wider array of renewable energy projects at any size Wisconsin needs stronger statewide clean energy policies.

Figure 5: Minnesota & Wisconsin Renewable Energy Comparison

	Minnesota	Wisconsin	WI as percentage of MN	MN as a percentage of WI
Net Renewable Energy Generation (March 2019)	**25%** of total net electricity generation	**9%** of total net electricity generation	**36%**	**2.7 times**
Installed Wind Capacity (2019)	3,845 MW	737 MW	**20%**	**5.2 times**
Installed Solar Capacity (2019)	1,140.22 MW	68.25 MW	**6%**	**16.5 times**

Sources: EIA, WindExchange, SEIA

Figure 6: National Rankings for Renewable Power Generation

	Minnesota	Wisconsin
National Solar power generation ranking	13th	41st
National Wind power generation ranking	8th	25th

Sources: SEIA, AWEA

Clean Energy Job Creation

Growing national markets for wind and solar power have spurred business growth and job creation across Minnesota and Wisconsin. Figure 7 illustrates strong job creation in both states. Minnesota has created a better state policy environment for renewable energy that has produced manufacturing and development jobs. Wisconsin already benefits from clean energy development in other states due to its large manufacturing sector. (Wisconsin's growing clean energy industry will be featured in this year's ELPC forthcoming renewable energy supply chain report.) However, the Wisconsin economy misses out from in-state development opportunities. State policies are vital to encouraging investment that can grow the in-state renewable energy production capacity, thereby creating more jobs and economic growth. Wisconsin would benefit even more with better, more robust state renewable energy policies encouraging development and installation within the state.

Figure 7: Clean Energy Job Creation

	Minnesota	Wisconsin
Number of Clean Energy Jobs	61,047	76,383
Percent Change	2.6% change from 2017-2018	2.4% change from 2017-2018

Source: Clean Jobs Midwest

Find references and additional information at ELPC.org/issues/clean-energy

Pollution

Burning fossil fuels creates air pollution, which increases healthcare and cleanup costs. Renewable energy is cost competitive, and still increases our quality of life by improving public health.

Carbon Dioxide

Carbon dioxide traps heat in the atmosphere, increasing global warming and, in turn, harming human health. A recent report released by ELPC in 2019, authored by several leading Midwestern scientists, shows the Great Lakes region is already warming faster than the rest of the nation. Recent natural disasters like flooding and excessive heat are expected to get worse, causing displacement of people, agricultural uncertainty, infrastructure damage, and threats to public health.

Minnesota has made great strides in reducing reliance on fossil fuels, leading to lower per capita carbon dioxide pollution compared to Wisconsin. Minnesota's main source of carbon dioxide pollution is now transportation, followed closely by agriculture and power plants, while Wisconsin's main source of carbon dioxide pollution is still power production.

Just this August, Wisconsin Governor Tony Evers announced a goal of 100% carbon-free electricity by 2050, but Wisconsin still needs a policy environment to get there. A number of Wisconsin cities and utility companies have also made reduction commitments.

Mercury

Mercury pollution harms the environment and human health with toxic effects on the nervous and immune systems. It is especially harmful to infants, who can suffer permanent brain damage from even minor exposure. Due to mercury accumulation in waterways, both Minnesota and Wisconsin have fish consumption advisories. Coal power plants release the most mercury in each state. Wind and solar farms produce no mercury emissions.

Sulfur Dioxide

Sulfur dioxide pollution imposes costs on society through respiratory disease, decreased plant growth, and damage to fish. The main source of sulfur dioxide pollution in each state is fossil energy power plants. All Minnesota counties are in compliance with federal sulfur dioxide pollution standards. Wind and solar power release no sulfur dioxide pollution.

Minnesota and Wisconsin must import expensive fossil fuels from other states because neither has fossil fuel resources in-state. Renewable energy enables each state to increase energy self-reliance while keeping energy dollars at home.

Gearbox Express, WI

Smart Policies Drive Progress

Renewable Electricity Standard

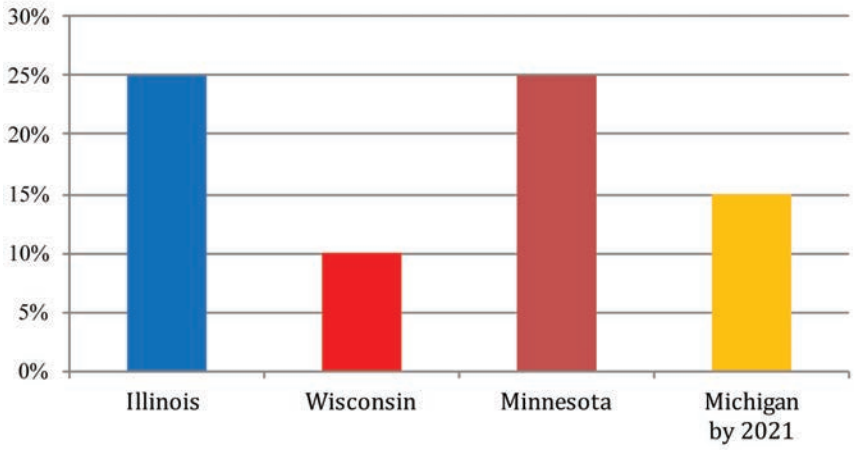
A Renewable Electricity (or Portfolio) Standard (RES) sets minimum levels for renewable power generation. Minnesota has a much stronger and more robust RES than Wisconsin and achieved their goal over five years ahead of time. Meanwhile, Wisconsin has one of the weakest renewable electricity standards in the Midwest. Having already achieved their modest goal of 10% by 2015, Wisconsin's outdated RES now does little to spur the growth of renewable energy in the state.

Figure 8: Renewable Electricity Standards in MN & WI

	Minnesota	Wisconsin
Date Enacted	2007	1999, amended in 2006
Municipal Utilities and Electric Cooperatives (Co-ops)	25% by 2025	10% by 2015
Investor-Owned Utilities (IOUs)	26.5% by 2025	10% by 2015
Xcel Energy	31.5% by 2020	No
Solar Carve-out	1.5% by 2020, goal of 10% by 2030	No
Target Achieved?	Yes	Yes

Sources: DSIRE, EIA

Figure 9: Midwest Renewable Electricity Standards by 2025



Source: DSIRE

Interconnection Standards

Interconnection standards define how distributed renewable generation systems can connect to the electric grid. Clear rules encourage clean energy development. Both Minnesota and Wisconsin first enacted such standards in 2004. In 2018, Minnesota adopted modern interconnection standards to make the process more efficient, affordable, and faster. Wisconsin has not updated their standards to reflect modern technology, so the renewable energy industry remains hampered by red tape and obstruction from monopoly utilities.

Community Solar Garden Policy

In 2013, Minnesota established itself as a clean energy leader by creating one of the nation's most effective community solar policies. Community solar expands access to solar energy to those who cannot otherwise implement their own projects. Xcel Energy implements the Community Solar Garden Program, which led to substantial growth in community solar and business activity in Minnesota. As of July 2019, there are 585 MW's of operational community solar capacity, and 400 MW in the queue. This program saves Xcel Energy customers money, whether or not they subscribe. Wisconsin currently has no specified statewide community solar legislation; however, a few utilities have installed individual projects totaling 6.2 MW of operating capacity and 10.7 MW of planned capacity.

Figure 10: Community Solar Energy Capacity

	Minnesota	Wisconsin
Operational installed capacity	585 MW	6.2 MW
Planned solar capacity	400 MW	10.7 MW

Sources: SEIA, ILSR

Net Metering

Net metering policies provide that customers who generate their own renewable electricity can sell excess electricity that they produce to the grid in exchange for a credit on their bill. Minnesota was the first state to adopt a net metering policy in 1983. Since then, the state has maintained a statewide program that helps promote market stability and transparency for smaller distributed generation projects. Wisconsin has a patchwork of widely varying net metering policies and lacks a single, focused policy. Overall, Minnesota's net metering policy is more customer-friendly and promotes more renewables generation.

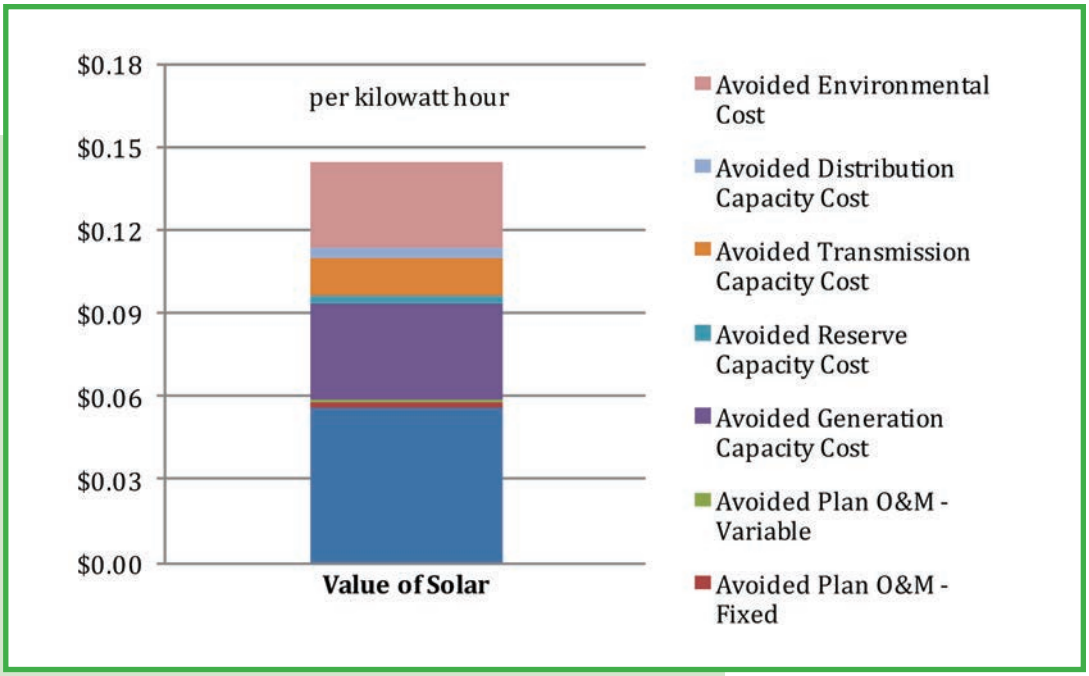
Sunvest Attic Angels, WI

Recognizing the Value of Solar

In 2014, Minnesota was the first state to adopt a "Value of Solar" policy that utilities could use instead of net metering. This methodology reflects the full value of solar and considers the environmental and economic benefits of solar energy. No utilities currently implement this policy for distributed generation; however, the Value of Solar rate is used to compensate subscribers in Minnesota community solar projects. This innovative approach can serve as a model for other Midwestern states, such as Wisconsin, to recognize the value of solar.

Figure 11: Recognizing the "Value of Solar" in Minnesota

An innovative new energy policy could replace Net Metering to fairly compensate solar growth.



Sources: ILSR, Xcel Energy

Connexus Energy, MN

Pollinator-Friendly Solar Standards

Pollinator-friendly solar incorporates deep-rooted, native pollinator plants underneath and around solar panels. These plants provide a habitat for necessary pollinators and can contribute to reduced storm water runoff, increased water quality, and improved soil health.

Minnesota was the first state to establish science-based standards in 2016 to encourage development of "pollinator-friendly solar." Solar projects that claim pollinator benefits must follow the Minnesota Habitat Assessment scorecard. Wisconsin does not have official pollinator-friendly solar standards.

Energy Efficiency

Minnesota has an Energy Efficiency Resource Standard that was established in 2007 to set an energy savings target for utilities. Wisconsin does not have this standard, but has an incentive-based program called Focus on Energy that was established in 2001. Though both programs are successful, Minnesota ranks 8th and Wisconsin ranks 29th according to the American Council for an Energy-Efficient Economy's 2018 scorecard that assesses energy efficiency policy and program efforts, performance, best practices, and leadership.

Conclusions

Minnesota and Wisconsin each have ample renewable energy resources, but state policies to utilize these resources vary greatly – and it shows. Minnesota's strong clean energy policies have resulted in greater growth and strong economic development across the state. Wisconsin has ad hoc, disjointed policies that are not standardized or updated and result in limited economic development. Minnesota's leadership supports policies that lead to clean energy development and growth and provide a good model for other states, like Wisconsin, to follow.

Environmental Law & Policy Center

The Environmental Law & Policy Center of the Midwest is a leading public interest environmental legal advocacy and eco-business innovation organization. We develop and lead successful strategic advocacy campaigns to improve environmental quality and protect our natural resources. We are public interest environmental entrepreneurs who engage in creative business dealmaking with diverse interests to put into practice our belief that environmental progress and economic development can be achieved together. ELPC's multidisciplinary staff of talented and experienced public interest attorneys, environmental business specialists, public policy advocates and communications specialists brings a strong and effective combination of skills to solve environmental problems.

ELPC's vision embraces both smart, persuasive advocacy and sustainable development principles to win the most important environmental cases and create positive solutions to protect the environment. ELPC's teamwork approach uses legal, economic, scientific and public policy analysis, and communications advocacy tools to produce successes. ELPC's strategic advocacy and business dealmaking involves proposing solutions when we oppose threats to the Midwest environment. We say "yes" to better solutions; we don't just say "no."

ELPC was founded in 1993 after a year-long strategic planning process sponsored by seven major foundations. We have achieved a strong track record of successes on both national and regional clean energy development and pollution reduction, transportation and land use reform, and natural resources protection issues. ELPC brings a new form of creative public advocacy effectively linking environmental progress and economic development that improves the quality of life in our Midwest communities.

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