



RISE UP MIDWEST

Our Call to Action for a Midwest Clean Energy Transition

MIDWEST *Households*

MIDWEST *Businesses*

MIDWEST *Educators*

MIDWEST *Communities*

MIDWEST *Advocates*

Let's put people to work. Let's make home and business investments that reduce expenses for the long-term. Let's build a strong and resilient electric grid that weathers future crises. Let's invest our energy dollars locally. Let's expand existing Midwest clean energy policies and programs that work. Let's build an energy economy that best serves people and the places we live and love. **Rise Up Midwest!**

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Led by the MREA, Rise Up Midwest! is a coalition of businesses, individuals, organizations, jurisdictions, and workforce development partners working in coordination to create a groundswell of support to grow “Main Street” energy investment and grid modernization in response to the COVID-19 recession.

RiseUpMidwest.org



Midwest Renewable Energy Association (MREA)

A non-profit organization promoting clean energy, energy efficiency, and sustainable living through education and demonstration since 1990.

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An Introduction:

RISE UP MIDWEST



By: Nick Hylla
Executive Director,
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Association (MREA)

In today's world, energy is everything. A single satellite image of the Upper Midwest at night speaks to the awesome reach of our energy generation and delivery system and the influence it has over our lives. Imagine a continent gone dark: with no lights, no phones, no computers, no gadgets... the social and economic paralysis goes beyond what much of us can imagine. Yet, the challenges facing our energy economy are not as easy to visualize. They are complex and involve the inertia of past investments, layers of public policy, vast corporate influence, dense regulatory rulemaking, accelerating technological innovation, and shifting consumer sentiment.

The magnitude and complexity of today's energy economy was unthinkable just 50 years ago. Even though the global population consumes more than six times as much energy today than we did then, many of us, including in the Midwestern U.S., think even less about the complex system that makes this possible.

In some ways, it makes sense: When something becomes commonplace, we begin to take it for granted. Yet, if we hope to transition our energy system to one that is more local, clean, equitable, and advantageous, we'll need a diverse group of informed stakeholders working toward common goals that are widely shared by the public.

As I write and as you read this Call to Action, there is a battle being fought over the future of our energy economy. It is a battle between top-down decision-making to maintain the status quo and bottom-up organizing to invest in the new. It is battle between profits for the few and investments in the many. Between monopolies and open markets. Between aging fossil fuels and rising renewables. Between entrenchment and innovation. Between leaders and laggards.

"Our decisions over the next few years will largely determine who owns our energy future."

For those of us paying close attention, COVID-19 and the economic fallout has served to further clarify what we are fighting over. The economic consequences and federal response precipitated the largest transfer of wealth from poor to rich in our nation's history. This further exacerbated an already dramatic income gap between rich and poor in the United States and further deepened state and municipal budget shortfalls. As I write, high unemployment persists in communities throughout the Midwest and new unemployment claims have spiked for the first time in months as the region experiences a widespread increase in virus transmission and hospitalization leading into the winter months. Extreme political polarization has stalled the extension of federal support to help businesses and state governments survive the prolonged economic fallout.

It is as apparent today as it was last March: The Midwest desperately needs a local economic development and jobs initiative that provides widespread employment opportunities. The transition to a local clean energy economy is a very real opportunity.

We are not alone in this assessment and the transition is underway with active planning and debate in statehouses, corporate board rooms, and town halls across the region. Will your state fully take advantage of this opportunity? Will the job creation meet our expectations in both rural and urban areas? Will it contribute to significant local economic development in your community? Will it work to heal the economic divide and direct investment into communities in need? Will it result in more open markets, more investment opportunities, and more consumer choice? Will it build resiliency in our electric grid? Will it underwrite long-term economic development that directs the benefits to local communities?

To help ensure that we will soon answer "Yes!" to all of these questions, we are sharing perspectives from some

of the brightest voices working on the energy transition in the Midwest.

"We invite you to join our call to action because we believe that the Midwestern United States can be a global leader in the clean energy transition."

Despite the challenges we face, Midwest states are advancing some of the most promising policies and programs to build the energy economy of the future. And our communities, business leaders, public institutions, electric utilities, and private foundations are making bold commitments and investments in clean energy.

We hope that their stories, their successes, and their visions for the future will inspire you to action.

We all have a part to play. This is our call to action.

- **Let's put people to work.**
- **Let's make home and business investments that reduce expenses for the long-term.**
- **Let's build a strong and resilient electric grid that weathers future crises.**
- **Let's invest our energy dollars locally.**
- **Let's expand existing Midwest clean energy policies and programs that work.**
- **Let's build an energy economy that best serves people and the places we live and love.**

RISE UP, MIDWEST!

GET INVOLVED:
#RiseUpMidwest



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RiseUpMidwest.org/podcast



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Let's Work Together:
RiseUpMidwest.org/take-action

Belief Statements: Rise Up Midwest!

We believe...
the economic consequences of the COVID-19 public health threat will put stress on public services and small businesses for years to come. To meet this challenge, we need a swift and strategic state and local response to promote investment and widespread employment opportunities in rural and urban areas.

We believe...
that the clean energy industry has the capacity to create significant local employment opportunities that contribute to widespread economic recovery. Energy efficiency and distributed energy technologies are market-ready, cost-effective, and scalable in all market sectors.

We believe...
that by working together, engaging the public with meaningful educational resources, avoiding partisanship, and focusing on local and state actions, we can create market conditions that rapidly grow efficiency and distributed energy investments, create widespread employment opportunities, provide long-term utility ratepayer savings, reduce home and business energy expenses, and improve grid resiliency.

We believe...
that our efforts must provide real and durable solutions that help resolve social and economic inequity. The most severe economic impacts are being felt by small businesses, middle-to low-income earners, and local jurisdictions. Our work must prioritize opportunity, investment, and jobs for communities most in need. A local, clean energy response represents a clear opportunity.

We believe in the people of the Midwest and the places we live in and love.

Rise Up, Midwest!



Together we can inspire sweeping change, transition our energy economy, and put people to work. Rise Up Midwest! is creating a coalition of organizations across the Midwest to work in coordination to create a groundswell of support for commonsense, strategic, clean energy policy action and market development. If your business, jurisdiction, nonprofit, or association agrees with the belief statements, we encourage you to join us as a partner.

For more information on partnership:
 ■ Contact amandas@midwestrenew.org
 ■ Visit RiseUpMidwest.org/partners

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Call to Action:

Midwest HOUSEHOLDS

If your experience is like most people's, you've spent a lot more time at home in 2020. Whether due to physical distancing safeguards or loss of employment, COVID-19 has changed our home habits. Judging by the record-setting turnout for the presidential election, you've also probably been following politics (and hopefully public policy) more closely than in years past.

Our increased focus on our home comfort and energy performance, and our renewed focus on public policy that supports economic recovery, presents a real opportunity for households to make investments that directly benefit our comfort and pocketbook.

It's also an opportunity to make sure that your representatives have your interests in mind when they make energy policy decisions.

Putting it plainly: If a majority of households in the U.S. used the power of their wallet and vote to demand a transition to a local and clean energy economy that maximizes local investment and job opportunities, we could transform our energy economy in ways that would inspire the world.

Today, our limits are not technological, they are political. Our political leadership has the immediate capability to open markets, provide market stability, and support financing to transform the way we produce, use, invest in, and benefit from the trillions of dollars a year invested in energy infrastructure.

If they knew this was a foremost priority for their constituents and that their election prospects depended on it, they would listen, and we would be better off because of it.

In this section of our Call to Action, we share ways that households can invest in themselves, invest in others, and have their voices heard to increase the positive impact of our energy dollars.

Rise Up, Midwest HOUSEHOLDS!

Additional Resources for Midwest Households:

Take Action!

- Explore Your Solar Options and Go Solar Through a Solar Group Buy:
 - growsolar.org
- Become an Empowered Solar Consumer:
 - seia.org/research-resources/residential-consumer-guide-solar-power
- Stay Informed: Sign Up for Policy Action Alerts
 - riseupmidwest.org/action-alerts
- Learn About Solar Career Options:
 - midwestrenew.org/course-offerings
- Explore a Career in Clean Energy:
 - solarenergy.jobs
- Support Your Local Clean Energy Groups:
 - midwestrenew.org
- Become an Empowered Voter:
 - votesolar.org
- Write an Op-ed:
 - progressive.org/op-eds/OpEd-Writing-clinics
- Contact Your Representatives and Senators:
 - house.gov/representatives/find-your-representative
 - senate.gov/senators/How_to_correspond_senators.htm



Invest Your Energy Dollars on Main Street:

GO SOLAR!



The best way to strengthen our local economies and create local jobs is by keeping our money local. That means shopping locally, eating locally, and yes, generating our energy locally.

Midwesterners from southern Illinois to northern Minnesota and eastern Ohio to western Iowa are actively pursuing the solar investment avenues available to them at an unprecedented rate. They are saving money, gaining greater energy independence, supporting and creating local jobs, growing local economies, and reviving the beauty of the places we live in and love. And you can join them!

The first step to solar is understanding the types of investment available to you. These vary depending on your utility and the energy policies in your state.

The most recognizable form of solar investment is to purchase a system for your home or business. Plummeting prices coupled with the Federal Tax Credit and individual state incentives are making personal ownership of solar more affordable than ever. State legislation and programs like Illinois and Ohio's solar renewable energy credit (SRECs), Minnesota's and Iowa's state-wide net metering policy, and Wisconsin's Focus on Energy rebate make solar highly attractive for the states' property-owning residents. To see a comprehensive list of the rebates

and incentives available to you by state, visit the Database for State Incentives for Renewables & Efficiency at www.dsireusa.org.

If you're an Iowa, Illinois, Michigan, or Ohio property owner, another form of financing is available to you: solar power purchase agreements (PPA) and solar leases. In these agreements, the solar on your property is designed, installed, owned, and maintained by a third party, eliminating the need for the upfront cash investment and ongoing operation and maintenance costs necessary for personal ownership of a solar system. If you're interested in this type of solar investment, understanding the nuances between direct ownership and third-party ownership ensures that you are pursuing the investment that's right for you.

Finally, a burgeoning type of solar investment is community solar, an avenue that makes solar accessible to broad groups of stakeholders regardless of whether your home or business is suitable for on-site solar. Currently, community solar is available only in states and utility territories that have adopted enabling policy, like Xcel Energy territory in Minnesota. Community solar programs are both popular and cost-effective for ratepayers. Each Midwestern state has had at least one independent community solar project come online, and with support from state and utility leadership, we will see opportunities

expand throughout the Midwest.

"Whatever your circumstances, understanding the solar investment opportunities available to you is a critical step in the effort to redirect our energy dollars locally."

Invest in the place you live in and love. So, join the movement. Rise up and go solar! growsolar.org



By: Jordan Pupols
Events Manager,
Midwest Renewable Energy Association (MREA)

My fond memories of MREA's Energy Fair consist of a close group of activists having a reunion and sharing renewable and sustainable living strategies. The crowd included the hippies, the Amish, the militias ... all the off-grid folks. My kids learned to solder a solar cell, build a solar oven, and sing the belly button song. There was a lot of preaching to the choir.

But there are a lot of people out there who aren't on the inside track for renewables. Op-eds and letters to the editor in mainstream media reach a general interest audience that might not read a specialty publication.

A 2018 study published in the Quarterly Journal of Political Science, found that reading op-eds had "large and long-lasting effects on people's views among both the general public and policy experts."

Conservative columnists have long dominated the opinion pages, as reflected in a 2007 report by Media Matters stating that 60% of newspapers feature more conservative than progressive columnists while only 20% feature more progressive than conservative columnists. The Progressive Media Project was developed to bring additional voices

to the media conversation. We do this via two means: training writers to write effective op-eds and letters to the editor, and distributing op-eds nationwide. Members of the editorial staff of The Progressive magazine conduct op-ed writing clinics for nonprofit groups and individuals. We emphasize that an op-ed must contain not just the writer's opinion, but carefully documented facts. It also must establish its relevance and newsworthiness.

We lead participants through the structure of an op-ed, which includes a lead sentence, arguments, and a conclusion. The lead should state your position and make people want to read further. The arguments should be clear, compelling, and follow a logical progression. Include links to facts cited in your op-ed. This helps you fact-check, backs up your arguments, and allows readers to dig deeper. The conclusion should reinforce the main message, and leave readers feeling good about your argument.

A successful op-ed writer establishes their authority in their subject. Members of the MREA have the expertise to advocate for renewable energy and sustainable solutions. If you are interested in attending a Progressive Media Project op-ed workshop, please contact me at elizabeth@progressive.org.

After the workshop, participants

are invited to pitch op-ed ideas to The Progressive or request editorial assistance before submitting your op-ed to your local media outlet. Op-Eds that are accepted by The Progressive of national interest are distributed by the Tribune News Service. Those of statewide interest are distributed to Wisconsin newspapers. During 2020, by the end of September, we had published 100 op-eds that were collectively picked up by about 2700 media outlets with a total readership of more than 330,000,000.

One of the best ways to learn to write an op-ed is to read them. Check out the op-eds published on The Progressive website: progressive.org



By: Elizabeth Miller
Office Manager and Progressive Media Project Coordinator,
The Progressive

Home Energy Performance Is More Important Than Ever: In the Twin Cities You Can Start

VIRTUALLY!

At the Center for Energy and Environment (CEE), we understood the need for a clean energy transition before the pandemic started.

“Attention to home energy efficiency is more heightened than ever as people spend more time at home to avoid COVID-19 exposure and increasingly look to lower their energy bills, while improving indoor comfort and air quality.”

With the addition of a COVID-19-driven economic collapse that will require years for recovery, CEE seized the moment to evolve our residential programs to meet emerging economic and societal needs and respond to new opportunities that can positively impact the Minnesota communities we serve.

The most effective way to do this is to work with experts to add insulation, reduce air leaks, and optimize heating, cooling, and ventilation systems.

Through assessments, education, and resources, Home Energy Squad (HES) helps customers connect the dots between their needs and the solutions that competent contractors can provide. HES is provided by CenterPoint Energy and Xcel Energy, supported by participating cities, and delivered by CEE—and has served more than 50,000 homes since 2010.

In close partnership with program sponsors in March 2020, CEE began the massive undertaking of adapting the previously in-home HES service into an entirely virtual experience. To refine the offering before going public, field staff performed dozens of trial virtual visits with family and friends. Likewise, related teams like schedulers, energy advisors, outreach staff, and IT each revamped pre- and post-visit processes to meet changing customer needs with a meaningful virtual visit.

Offering virtual home energy visits has been a program goal of ours for some time, so when life quickly changed because of COVID-19, we were presented with a unique challenge and an opportunity to fast-track this new virtual HES visit. Sharing thoughts on

their virtual experience, one participant explained, “I was surprised at how thorough it was. The technicians were very knowledgeable, and the visit was customized to my home. The whole experience was very dynamic and fun.”

Since early April, HES crews have completed over 500 virtual HES visits, and customers continue to provide positive feedback about the approach.

In addition to adapting programs to meet changing needs and circumstances, CEE continues to seek new opportunities to improve residential energy efficiency, with growing attention toward addressing energy poverty and workforce issues.

This year, we’re working with partners to define pathways for a residential energy efficiency rental and workforce development pilot that could open clean energy job opportunities to previously underrepresented populations.



By: Rebecca Olson
Director of Residential Programs
at the Center for Energy and
Environment (CEE)

Looking to up your home performance? Start virtually and continue on with us to improve our homes and our communities. mncee.org

Photo Courtesy: Merton Community School District

Why Give to Renewable Energy Causes?

Many worthwhile charitable organizations across the globe clamor for our dollars in order to support victims of hunger, illness, natural disasters, injustice, and war, which are all important. If you believe that one of these causes should take a higher priority for your tax-deductible donations, consider how a gift of renewable energy may impact these very worthy causes and future generations. For example, non-profit organizations can reduce utility expenses when they use solar energy to supply electricity to their office buildings or electric vehicles, leaving more funds for their mission. They will also be inspired to educate supporters and those they serve about the benefits of “going green.” Eliminating our heavy reliance on fossil fuels will help the fervent fight against rapidly rising atmospheric carbon dioxide levels, polluted groundwater from “fracking,” the global rise in temperature causing melting glaciers, coastal flooding, horrific wildfires, and other effects of climate change.

“The health of our planet is at stake for future generations.”

Can one person or family make a real difference to our petroleum dependent lifestyles? The Couillard family knows that one person or family is all it takes! We believe our family can be a renewable energy role model to our community. Monetary support, education, and service to others are noticeable and awaken people to follow these leaders, new possibilities, and clean energy solutions. Cal

Couillard, our family visionary, stood at a crossroad after selling his business in 2018, unready to retire. Having enthusiastically studied alternative energy in college, he began a launch into the solar photovoltaic industry, using proceeds from the sale of his last company to start the Couillard Solar Foundation (CSF). He recruited family members to be on the board of directors with the mission of the foundation proposing “to serve other non-profits by providing education and financial support for expanding the use of solar energy and other technologies that will displace fossil fuels.”

Beginning in our community of Deerfield, WI, CSF was able to provide funds for a solar roof installation on the Deerfield Middle/High School, resulting in further investments in a solar array for the Village of Deerfield and another at the Deerfield Township garage. Two more projects are in the planning stages in Deerfield. Collaborating with RENEW Wisconsin, we have seen the positive results from our “Solar for Good” program, gifting solar panels to non-profit organizations. Over 80 non-profits now have solar arrays powering their cause. Our new program “Solar on Schools” with the Midwest Renewable Energy Association is just starting to make gains in Wisconsin, with about 10 high schools and technical schools with solar arrays installed. In 2017, Wisconsin’s electricity generation from renewable energy sources was less than 10%, with less than 1% coming from solar power. We can do better!

CSF funding has reached into several faith communities who recognize the importance of stewardship of our world’s resources. In 2019, the Sun Prairie United Methodist Church in

Sun Prairie, WI, went green reducing their electric bills from a 100 kW solar installation on the church’s roof. The Shelter from the Storm Ministries organization, which provides housing to low-income mothers and their children in Sun Prairie, has a new solar rooftop system as well. More funds can be provided to support the basic needs of these families when utility costs are offset by solar power.

Would you like your hometown to become a solar city, a bright beacon for the future, and an inspiration to our grandchildren? Will you help us lead the way to 30% energy generation coming from solar and renewable sources by 2030? When you give to green energy causes, you are giving a gift to all life on a thriving Earth. Your monetary gift will inspire the younger generation, create sustainable practices, and help us reach our green goals! Don’t wait, donate YOUR green by giving solar to a non-profit today! couillardsolarfoundation.org



By: Cal and Laurie Couillard
The Couillard Solar
Foundation

INVEST IN YOURSELF: Start a New Career in the Solar Industry



In the early years of MREA training, the course schedule looked very different than it does now. Thirty years ago, solar PV was much more expensive, not very efficient, and was typically only installed by homeowners with strong environmental leanings and/or living off-grid. Passive solar, small wind, alternative construction—these courses were popular too. Renewable energy wasn't an investment made because it was a no-brainer; it was done in spite of its cost. It's hard to believe that a small wind turbine was once price-competitive with a PV system.

Today almost all our courses are focused on PV design, sales, installation, inspection, and maintenance. Most participants are interested in a solar career or want to highlight their resumes with solar. We still get some registrations from homeowners interested in installing their own system, but PV has gone mainstream thanks to its low prices and attractive return on investment.

“The need for solar training has pivoted from an audience of enthusiasts to professionals that are developing and managing the thousands of residential, commercial, and utility scale PV systems in the Midwest.”

As with any trade, quality training is key to success. Industry credentials

carry weight. PV designers, installers, inspectors, and salespeople need certification in today's solar market. MREA's mission is to provide training that meets the demand of today's renewable energy professionals. We have an entry-level pathway for those beginning their solar career, and a number of advanced PV courses for higher-level certifications, licenses, and continuing education.

Our courses are available to the general public, and we also contract with businesses and organizations interested in training their employees. In the past two years, we've worked with the Cities of Minneapolis, Madison, and Milwaukee, the Chicago Urban League, Focus on Energy, the NAACP, the National Latino Institute, the MN Dept. of Corrections, Sunrun, and others to provide this training. Whether it's online, in-person, or a combination of both, the MREA has a bank of highly qualified and experienced instructors to teach the next generation of solar professionals.

Solar jobs are in high demand in the Midwest. Minnesota has 146 companies and 4,335 people employed in solar. Michigan has 174 companies and 3,876 jobs. Illinois has the lead with 301 solar companies and 5,513 jobs. Iowa and Wisconsin have fewer, but still have projected growth rates of 381 MW and 1,691 MW, respectively. **The Midwest is set to be the fastest growing solar market in the U.S. over the next 10 years.**

Many of our students are already employed in the solar field and are simultaneously working towards their NABCEP credentials. And we couldn't be prouder to provide the relevant training they need. We make sure our courses and learning objectives align with industry standards and best practices, that our students are happy with the training they receive, and that the solar community continues to thrive.

In short, it's a good time to invest in yourself and your new career in solar. We're here to help!

- midwestrenew.org/course-offerings
- solarenergy.jobs



By: Jenny Heizen
Training Director,
Midwest Renewable Energy
Association (MREA)

Support Your State's CITIZENS UTILITY BOARD

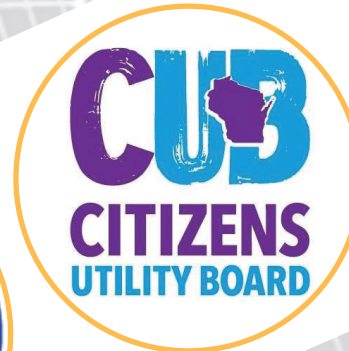
In a time when corporate spending is protected like it's free speech, each of us must wonder how our voices will be heard. Energy industry lobbyists are a fixture at state capitol buildings. Big businesses have big energy budgets and their associations are adept at making their issues a priority. So, what about residential energy customers? Is their voice being heard and their needs met? Or are the well-funded lobbyists successful in monopolizing the profits and shifting the cost to the "little guy"?

Luckily, for most residential ratepayers in the Midwest, we are represented by a state Citizens Utility Board (CUB).

These non-profit groups work tirelessly to make sure that the voices of home and small business ratepayers are heard and that their needs are met. For decades they have taken a hardnosed approach at keeping electricity costs

low, ensuring that expenses aren't shifted to homes' and small business' electric rates. With this experience and perspective, it is not surprising that the CUBs in every Midwest state have become leading advocates for home and business energy efficiency and distributed generation.

If you haven't heard of your state's Citizens Utility Board, we are here to tell you that you should look them up. In the following articles, you can hear from a few of them yourself. We greatly appreciate the quiet work they have been doing on our behalf and think you will as well.



**Fighting utility rate hikes,
promoting clean energy,
and advocating for
consumer protections.**



Fighting For Illinois Consumers: The Citizens Utility Board

In 1983, the Illinois State Legislature passed the Citizens Utility Board (CUB) Act, establishing CUB as an independent watchdog to fight on behalf of Illinois utility customers.

Although we are a small organization of only 25 people, we've saved consumers more than \$20 billion by challenging proposed electricity, natural gas, and telecom rate hikes. Since COVID-19 hit, we have been pushing for an extension of the moratorium on utility shutoffs and helping people understand bill assistance programs.

In 2016, we were part of the coalition that passed the Future Energy Jobs Act (FEJA). FEJA set a goal of 25% renewable energy by 2025, required utilities to make major energy efficiency upgrades, and created clean job training programs. Thanks to FEJA and hundreds of presentations we hold in community centers, church basements, and public libraries, people are learning that solar is viable in Illinois.

Last year, we passed one of the nation's toughest consumer protection laws, the Home Energy Affordability and Transparency (HEAT) Act, to fight bad deals peddled by alternative gas and electric suppliers. By making it illegal for suppliers to charge cancellation fees, requiring transparency in their marketing, and giving the Illinois Commerce Commission (ICC) sharper teeth on these issues, the HEAT Act was the most comprehensive piece

of legislation ever passed in Illinois to reign in these companies.

CUB Illinois is uniquely positioned to tackle affordability and clean energy from every angle. Our policy team advocates for 100% renewable energy legislation. As a member of our outreach team, I teach people across the state how to save money on their bills. The phones in our consumer advocacy department ring all day with questions from consumers looking to resolve utility issues. And in between fighting rate hikes, our attorneys weigh in on solar and energy efficiency proceedings before the Illinois Commerce Commission.

Although our staffers wear many hats, our efforts across the state work in tandem, and what we learn while talking to consumers informs the actions of our policy team.



The legislation they help pass creates money-saving programs that we discuss in our consumer education efforts.

At the center of all CUB's work is our vision for an affordable renewable energy transition for Illinois consumers.

"Before joining the team at CUB, I believed we should fight for climate action no matter the cost. Now I know that by holding utilities accountable and investing in energy efficiency and smart grid programs, we can have it both ways. We can enact policy that will get us to 100% renewable energy and protect our power bills at the same time."

CUB is primarily funded by Illinois consumers through donations of as little as \$10 a year. There is a lot of work still to be done, and your support will help us continue to fight for Illinois utility consumers.

citizensutilityboard.org

By: Christina Uzzo
Environmental Outreach
Coordinator, CUB IL



40 Years of Consumer Advocacy in Wisconsin: The FIRST Citizens Utility Board

The nation's first Citizens Utility Board was created 40 years ago in Madison, Wisconsin, when the vision of consumer advocate Ralph Nader gave homeowners and renters a voice at the table where the big energy decisions are made.

"As the sole consumer advocate for utility customers in Wisconsin, our focus is on the bottom line, and ensuring the most cost-effective transition possible to a clean energy future."

CUB has helped Wisconsinites save billions on their energy bills. That means **not allowing utilities to profit twice**—by earning profit on new renewable energy projects and continuing to profit for years and years on the carbon-emitting plants they've already shut down. It means more choices and fairness in finding ways to tap renewable energy. And it means navigating policy moves large and small to encourage, not discourage, energy efficiency.

A key focus for CUB and our members is **fighting increased fixed customer charges** implemented in 2015. High fixed charges discourage energy efficiency and penalize homes that use less energy or generate their

own power. When Wisconsin utilities proposed massive increases to these charges, Wisconsinites opposed these with a flood of public comments the likes of which the Public Service Commission (PSC) had never seen. Although the higher charges were approved, CUB continues to work on this issue, and we've had success: Since 2017, CUB has held the line on further increases to these fees. We hope to make more progress and reduce fixed fees in the years ahead.

Most of our work is focused on rate and construction cases. We also get involved in policy work, **supporting energy efficiency, and better planning of the grid** to encourage efficiency and distributed energy and electric vehicles. We advocate for a continuing and strengthened Focus on Energy program as well as well-designed rate programs that encourage expansion of electric vehicles in Wisconsin while keeping costs down overall.

This year, given the pandemic and recession, our focus is **keeping customers connected and working with utilities to help those hardest hit** by the economic clampdown due to the COVID-19 virus. The PSC originally planned to lift its shutoff moratorium in July. CUB urged the PSC to hold off on these shutoffs, and the PSC ultimately agreed. Shutoffs for natural gas and electric customers were barred until next year. We also fought to keep utilities from profiting from COVID-19

costs. The PSC agreed with CUB and limited returns to less than half of what was sought.

Wisconsinites who fell on hard times this year are on our minds. Going forward, we've asked utilities to analyze in detail who among their customers are in the greatest need, so we can address inequities and develop pilot programs to help folks in dire straits.

Our work is made possible by donors and members that share our vision for a clean and cost-effective energy future in Wisconsin. We hope you'll consider supporting our work as well. cubwi.org



By: Tom Content
Executive Director, CUB WI

Empowering Minnesota Consumers: The Citizens Utility Board



The Citizens Utility Board of Minnesota was incorporated in 2016 to advocate for Minnesota consumers, the first of a new generation of Midwest CUB non-profits. (Michigan and Ohio have more recently joined the CUB club, too.)

CUB Minnesota's first role is to be a voice for regular people in energy policy and regulation during this transformational time in the industry. Decisions being made today will set the foundation of our energy systems for decades to come.

A rapid, low-cost clean energy transition: CUB is preparing the Consumers Resource Plan, an alternative to Xcel's 15-year energy plan, that will cut carbon and reduce costs to consumers. We are advocating to the Public Utilities Commission (PUC) and leading workshops with Xcel customers to explain the process, the regulations, and how the public can participate.

Protections during COVID-19: In partnership with low-income advocacy groups, CUB has already won a

"The clean energy transition should be a win-win-win for consumers, the environment, and the power providers, but there's no guarantee that the public—especially communities that have long borne the negative impacts of our energy systems—sees the benefits of this transition. CUB pushes for a rapid, cost-effective clean energy transition and works to ensure that regular people reap the benefits."

Our second role is as a resource for people around the state. Consumers' energy options are complex and getting more so. There are conservation rebates, A/C cycling programs, and various rate options for your house, your car, and your solar panels. There are gas dryers, electric dryers, and heat pump dryers, and so on. There are myriad energy assistance programs, payment plan options, and programs to navigate. CUB helps people find answers to their energy questions and helps people ask questions they don't even know they should be asking.

Here are a few examples of what this means in the real world:

moratorium on disconnections and fees for regulated utilities and we're now pushing for protections for municipal and cooperative utility customers. We've counseled hundreds of people on their rights, responsibilities, and resources to avoid shutoffs.

Data access to address inequities: CUB is advancing a petition for an Open Data Access Standard before the PUC. The system-level data and information about utilities' average residential customer, to which advocates typically have access today, hides great variations and long-standing inequities in the distribution of costs and benefits in energy systems. Understanding and

Photo Courtesy: StraightUp Solar

addressing these inequities requires much more granular data. Similar data access allowed the Illinois CUB to uncover, for example, that low-income households typically pay more than their fair share in electricity bills and would be better off under renewables-friendly time-of-use rates. Even before the Standard is approved, we're partnering with the electric company Minnesota Power and Illinois CUB to conduct a similar analysis in northeast Minnesota.

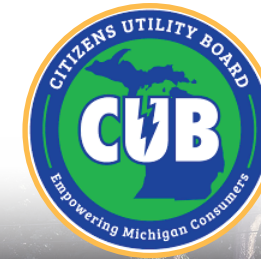
Understanding the disparate impacts of utility investments: The Minnesota PUC has asked utilities to propose investments that can help to spur the economy during our current recession. Utility projects can reduce emissions, reduce customer costs, and put people back to work. Without proper consideration, though, most of these jobs aren't likely to benefit the people who are hit the hardest by the current economy (too often Black, Indigenous, and People of Color); to the contrary, the investments are more likely to exacerbate current disparities. CUB is reviewing utility proposals now and will urge the PUC to approve proposals that will help to improve the economic situation for Minnesotans who need it the most.

CUB depends on contributions from donors. If you think our work is important for the people of Minnesota, we'd be honored to have your support. cubminnesota.org



By: Annie Levenson-Falk
Executive Director, CUB MN

Protecting the Interest of Michigan's Energy Consumers: The Citizens Utility Board



The Citizens Utility Board of Michigan was formed to represent the financial interests of residential utility ratepayers in the state. That singular focus, however, does not mean our work is disconnected from efforts to promote energy efficiency and clean energy.

"It is no coincidence that an honest defense of residential ratepayer interests also results in a defense of more programs to help customers save energy, more customer options for distributed energy, and the need for utilities to retire aging, expensive fossil fuel assets and switch toward more competitive and cleaner sources of energy."

CUB provides another perspective that advocates for cleaner energy, but our unique focus both differentiates us from other organizations advocating for similar policies and strengthens the overall advocacy work in the state. We emphasize the role of the residential ratepayer—providing an additional, distinct reason to move toward renewable energy and efficiency intervention.

Our work in rate cases and other relevant proceedings before the Michigan Public Service Commission

and our communications work illustrate this approach.

For example, SEMCO Gas, the third-largest (by number of customers) natural gas utility in Michigan, proposed in its 2019 rate case to increase its monthly fixed customer charge by \$2.40, which would make it the highest fixed charge of any utility in the state. As CUB explained in a blog post and an op-ed that were published in a network of local newspapers around Michigan: when a utility like SEMCO becomes more reliant on a fixed charge for revenue, the incentive to use natural gas more efficiently diminishes and low-income customers are hit the hardest. Following these efforts shining a light on SEMCO's activities and cooperation with other groups, SEMCO settled for just a 75-cent increase in the fixed charge. There has been similar success in rate cases involving DTE Gas and Consumers Energy Gas. Both utilities had to accept much smaller fixed charge increases than originally requested.

Part of CUB's mission is to educate the public so that customers are better able to speak up and influence the regulatory and political process. Our communications work includes op-eds in the Detroit Free Press and Lansing State Journal, and blog posts that have been shared on social media and reported by media outlets like

Michigan Radio. In that last example, we published a blog post about how Consumers Energy, despite lots of rhetoric about transitioning to be a utility for a cleaner energy future, was not incorporating distributed energy and other forms of advanced energy into its planning.

Consumers Energy customers pay unnecessarily higher bills as a result, and the electric grid is less clean and efficient as well. As we wrote: The utility's approach to planning grid upgrades closes the door to the new generation of distribution grid strategies that, due to technological advances, make it increasingly possible to avoid capital-intensive projects that cost ratepayers a lot of money.

The Citizens Utility Board of Michigan is an independent, nonpartisan, non-profit organization, and we rely on tax-deductible individual donations to support our work. Looking ahead, CUB will continue to put pressure on utilities to move in the direction of efficient, affordable, and clean energy through new initiatives like a study of utility preparedness for electrification of transportation. Are you interested in supporting our work?

You can join as a member (for free) and give a tax-deductible donation. Learn more about our work at cubofmichigan.org.



By: Amy Bandyk
Executive Director, CUB MI

Photo Courtesy: StraightUp Solar

The **EMPOWERED** Voter: Helping Your Representative Prioritize Energy Issues

Put yourself in the shoes of a state senator or representative. You might have a separate full-time job. Your days consist of back to back events, constituent meetings about matters unrelated to policy, traveling back and forth to the capital, or simply trying to make it home for dinner. Every few years, you have to pivot your undivided attention towards protecting your job, at which point every decision you've made could come back to haunt you.

Keep in mind that state legislators may only be in session - meaning actively making and passing legislation - for part of the year. Moreover, while nearly every legislator has somebody to help manage their schedule and

relationships with constituents, relatively few have dedicated staff to focus on policy development. Even before the COVID-19 crisis, legislators were having to constantly navigate dozens of different urgent policy items. I share this not to suggest that you should pity state legislators. They are doing what they love, regardless of their underlying motivation. Instead, I wanted to paint this picture to ensure that you understand what it takes to get their limited attention and to turn it towards your priority issue: creating a just and equitable renewable energy future.

There are two crucial factors to consider when trying to connect with a legislator: **method and message.**

"Using the right method to deliver the most effective message helps maximize the impact of your advocacy, but the most important thing to do is to act now."

-John Delurey



By: John Delurey
Midwest Campaigns Director,
Vote Solar

METHOD
Let's look again at a legislator's priorities. They clearly want to keep their job, so the election captures the lion's share of their attention. This brings us to one of the most powerful ways to demonstrate your issue's salience: show that you and your friends are watching and that the legislator's actions will influence your vote.

This strategy is especially effective as part of community-based organizations and issue-based campaigns. Find (or create) an organization that cares about your issue and has members in your area. Joining, creating, and growing these organizations makes it clear that your electoral support and votes are contingent on their dedication to your issue.

One caveat here: some states have term limits and everyone eventually retires. Do some research to figure out if and when your legislator is up for election.

Another method that works well for citizen advocacy is to become a trusted source. Remember how I discussed that most state legislators lack policy-oriented staff? Even those that have support staff cannot be expected to follow every issue, including the details specific to energy and climate policy.

Try to schedule a meeting with your elected official to introduce yourself and establish credibility. Ask them if there are specific areas of energy or climate policy in which they have interest. Do you have a specific bill that you would like their support on? Great! Tell them about it and why you care. Your goal here is to start building a relationship, not necessarily to persuade them in this first meeting. Follow up with an email and then schedule another meeting down the

road. You might be surprised how quickly you become a trusted advisor on your priority issue.

MESSAGE
Regardless of whether or not you meet them in person or only have the bandwidth to send an email or write a letter, be sure to use messaging that delivers your point in an effective and relatable way. Show your legislator why your issue matters to their constituents in the near future. This can be challenging when your issue is renewable energy or climate change, at least compared to urgent budget-related issues or ensuring continuation of essential services.

Start with your story. Tell them why you became interested in energy issues. You are more likely to persuade them by demonstrating dedication than demonstrating the latest statistics on rising temperatures. Keep those statistics nearby though, they are certainly helpful for building credibility.

The next priority is to tailor your argument to what they care about. Have they expressed interest in energy independence? Meet them there and talk about the opportunities to make more homegrown energy via wind and solar. Are they more concerned with workforce development in disadvantaged and low-wealth communities? Focus on that instead and point to opportunities for good jobs in the clean energy future.

No matter which direction your messaging takes, stay positive and focus on the benefits of the clean energy future: health benefits from decreased pollution, savings for all ratepayers via deferred grid upgrades, and energy choice and freedom due to off-grid solar. votesolar.org

"State legislators rarely hear from concerned citizens like yourself; most political attention tends to drift towards federal legislators and nationwide elected officials. The inroads that you make with your legislators will have ripple effects throughout the nation as we collectively pursue the clean energy future. We need you, your neighbors, and your friends now more than ever."

Call to Action:

Midwest BUSINESSES

In recent years, businesses have been driving the nationwide transition to clean energy. Some of the world's most well-known brands have aggressively marketed their investments as efforts to fight climate change but all of them recognize the same reality: the investments are increasingly good for their bottom line.

The increased financial benefits have rapidly grown corporate investment in clean energy and strengthened business advocacy for advantageous state policies and utility programs.

Today, not all businesses have the same opportunity for investments in clean energy or energy efficiency. In many ways, the U.S. can be considered a 50 state experiment when it comes to energy policy due to the influence that state governments have over energy policy. Within each state, electric utilities are organized in different ways and are subject to different rules. As a result, businesses face a complex landscape of potential investments ranging from on-site projects, local utility partnerships, community solar, and the purchase of renewable energy credits that can be from electricity generation that is out of state (or even out of country).

Businesses are always looking for a competitive edge. Businesses in Minneapolis, for example, are powering their operations with solar energy and earning strong returns through investment in community solar gardens. This gives them a distinct advantage in both marketing and reduced operating expenses compared to competitors in other states where investments like these are not available.

As businesses work to level the playing field and grow their opportunities, state and utility leaders can expand successful programs that are already working for businesses. This has proven to lead to more advantageous financing for projects, increased business investment, and accelerated local economic development.

What can businesses do to ensure that they are keeping up with their competition when it comes to the transition to clean energy?

In this section, we'll share perspectives, successes, and strategies from a broad range of business stakeholders. With continued business leadership, the Midwest can see an economic recovery powered by clean energy.

Rise Up, Midwest BUSINESSES!

Additional Resources for Midwest Businesses:

Take Action!

- **Explore Your Solar Options:**
 - growsolar.org
 - midwestrenew.org/community-resources
- **Brush Up on Key Issues:**
 - elpc.org/resources
- **Research Your State Solar Market:**
 - seia.org/states-map
- **Explore Incentive Opportunities:**
 - dsireusa.org
- **Join the MREA Business Directory:**
 - midwestrenew.org/membership
- **Check Out Solar Case Studies:**
 - midwestrenew.org/solar-grant
- **Fill Your Solar Jobs and Internships by Posting Them Online:**
 - solarenergy.jobs
- **Add Your Business to the Growing List of Rise Up Midwest! Partners:**
 - riseupmidwest.org/partners



Farmers GO SOLAR:

New Generation and Lower Operating Costs

For the Parker family, their land in Viola, WI is much more than the crops embedded in the soil and the livestock that graze their sprawling acres. For the past 150 years, their farm has been a place of family tradition and memorable celebration, and the family has been committed to preserving nature and protecting its beauty. Mark and Rachel Parker plan to continue their conscious practices and push the goal of conservation even further, using renewable energy as a pathway to greater preservation.

Mark and Rachel Parker both grew up on family farms in the area, learning decades-old farming practices from their parents. Mark, the youngest of four children and the fifth Parker generation on the farm, always had an interest in taking over the farm. His mother, however, had other thoughts.

“My mother,” Mark recalled, “she didn’t want me to take over the farm...she said it was a hard life. The conventional [farming] world was kind of tight.”

His interest persisted, and he returned from college to assume full responsibility for his family’s land. He vowed to operate the land the same way his predecessors had: with conservation and preservation at the core. Then he met Rachel, and more than two decades later, they maintain a fully organic operation with 200 head of cattle, nearly 100 cows, and fields full of corn, alfalfa, and oats.

In 2007, with the goal of preserving their own health and mitigating the use of chemicals on their land, the Parkers sought out Organic Valley’s help in switching to organic farming methods. But going organic was not the family’s

first experience with environmentally conscious practices. “I was raised that way,” Mark stated. “It is ingrained in me.”

The devotion to conscious farming means maintaining the dams Mark’s father constructed to preserve the local, precious watershed. It also means cultivating crops on contour strips, a practice involving planting seeds with the slope of the land to decrease soil erosion and conserve rainwater.

“We work with the land, not against it...as a farmer, you work with nature, so you understand the power of it,”
Mark added.

A strong understanding of nature’s potential and their son’s interest in renewable energy was the catalyst in researching their newest venture: solar energy. Initially, they weren’t sure if it was financially attainable; farmers working within tight margins have little room for large investments.

“As Mark’s mother warned him decades ago, farming comes with tight budgets and unpredictable cash flows more often than not. Their solar system, however, has helped them cut down on operating costs, reducing overall expenses and securing better cash flows.”

The Parkers, however, quickly learned that an investment in solar now will benefit them and the planet for decades to come.

The Parkers sought out H&H Solar to install a 22.68 kW solar system on the roof of their parlor in 2016. For the last five years, those 72 panels have offset about 50% of that building’s electricity.

“We had to decide what was most important to do on the farm that year,” Rachel mentioned. “It was costly, but it was a no-brainer once we looked at the tax breaks and the impact 10 years down the road...in the long run it is beneficial to you and nature.”

Aside from noticeable cost savings, Mark believes this shift is suitable for raising a family on the land and provides their sons with opportunities for a brighter future. After going through the solar process and becoming familiar with the programs available to them, the Parkers envision more clean energy production down the road. It’s a step they can take to further their farming business while maintaining their environmental priorities.



By: Morgan Kamholz
Communications Intern,
RENEW Wisconsin

Community-Scale RENEWABLE ENERGY PROJECTS and Strong Partnerships



By: Eric Udelhofen
Director, Project Development,
OneEnergy Renewables, and
MREA Board Member

A few years back over lunch, fellow MREA board member and dear friend Stanley Minnick and I were lamenting the lack of strong policy driving renewable energy growth in Wisconsin. The conversation eventually generated some ideas about how Organic Valley (where Stanley worked at the time) might be able to achieve its not-yet-official goal of being 100% renewably powered. Though it took several years and a few different iterations to develop, that conversation was the germ of an idea which ultimately resulted in over 30 MW of solar across the Driftless region of Wisconsin, Minnesota, and Iowa. These projects have now been operational for over a year and serve municipal utility customers in 13 communities, helping keep rates low and stable for thousands of rural households and businesses.

We discovered early on that the easiest way to get the projects built quickly would be to first sign straightforward power purchase agreements directly with the municipal utilities in the areas the projects would be located, at a price that would save them money, compared to their existing wholesale electricity supply, and second, sign separate agreements for the sale of the Renewable Energy Credits to get the revenues to a level that was adequate to support the investment in the projects. Green tariffs, which allow for an off-site renewable energy project to virtually offset the load of a large customer in the same utility territory, would have required the approval of the Public Service Commission, an arduous process that had no guarantee

of success. Other ideas were vetted and deemed too complicated to be scalable.

The revenues from the sale of the electricity to the utilities covered a bit over 90% of the cash flow needs of the projects, with the remainder coming from long-term renewable energy credit agreements signed with Organic Valley, the City of Madison, Dr. Bronner’s, and Native Energy. Without the steadfast support and commitment from these partners, the projects would have been unfinanceable, and, therefore, could never have been constructed.

“The most important thing I learned through the process of developing and implementing those 10 projects was that relationships matter, and sometimes you have to go out on a limb to harvest the best fruit.”

Together with partners in all 10 communities, we signed lease agreements, obtained interconnection agreements, completed Environmental Impact Statements, received permits, secured tax equity financing, obtained long-term debt through the USDA Rural Utilities Service, and catalyzed the investment of over \$40 million dollars in rural communities across the Midwest. This required the shared efforts and talents of a wide variety of folks, and I can’t tell you how grateful I was for the humble diligence of the dozens of public servants, including

utility managers, city-council members, and zoning board members, all of whom helped us get these projects approved and built.

This is one model for implementing community-scale renewable energy in an environment without strong enabling public policy, but it’s not the only one. I am confident that the ingenuity of committed businesses, municipalities, and institutions can come together with innovative renewable energy companies to create the next set of business model and partnership structures that accomplish similar projects. There is no reason why every substation across the state shouldn’t have one or two community-scale solar projects nearby to serve the residents and businesses in that area. And it won’t be long before batteries will be a part of those projects as well. I am excited to be a part of the growth of this sector across the Midwest and hope to work with some of you reading this publication to envision and shape the future.

oneenergyrenewables.com

Energy to Make a **CHANGE**:

For Evergreen Credit Union, the Journey Started with Renewables



Photo Courtesy:
Evergreen Credit Union

In late 2014, Evergreen Credit Union set out to make a change. We sought a revised mission that aligned with our nature as a credit union. Being member owned, we have a commitment to spend money in a way that benefits our members. Inspired by the triple bottom line, our new mission was born: to be the most environmentally responsible credit union in the nation while continuing to deliver amazing service to our members. We had only a single location in Neenah, Wisconsin, but we committed steadfast to the idea.

Our first action was appointing a full-time Sustainability Manager that reported to the executive team; all levels of staff were to be immersed in sustainability. This step was major as, at the time, the credit union operated with 13 employees. The interior of the Credit Union changed too as we began to measure everything that went in and out. These numbers turned into metrics to benchmark our progress: carbon neutrality, energy self-sufficiency, water conservation, and zero waste. Teaching our staff how to continuously think about and improve on these metrics was imperative; we have since included sustainability training in our new hire orientation.

Shortly after announcing our plans, we installed a 56 kW solar array on the roof of our office. These 198 panels became the new beacon for the future of the Credit Union. Today, our panels produce 85% of our annual electricity demand, and what we cannot produce ourselves, we purchase from 100% renewable sources through an opt-in program with our energy provider. Following the installation, the Credit Union's annual energy costs plummeted by nearly 70%. Where we used to spend \$13,000 a year for electricity and gas, we now spend closer to \$4,000.

Evergreen Credit Union has never been too shy to put our money where our mouth is; following our adventure into sustainability, we rolled out new products including a dedicated solar loan to help homeowners afford initial installation costs, and a hybrid and electric vehicle discount for members looking to finance a more sustainable ride.

These changes helped spur a new energy into our membership. Before these changes, we relied on word of mouth and our location to bring new members to the Credit Union. Afterwards, 10% of our new account members said our sustainability mission was a deciding factor.

"Our membership growth more than quadrupled in 2016 following our first full year of sustainability initiatives."

While the initial costs were daunting on paper, our savings in electricity costs and accompanying energy efficiencies led us to the easy decision to install a second solar array on our upcoming new location. Front and center on our building, our commitment to renewable energy has become the new face of our Credit Union. evergreencu.com



By: Roni Kasperek
Sustainability and Marketing
Manager, Evergreen Credit Union

The Sustainable Growth COALITION:

Fostering a Circular Economy in the Midwest and Beyond



By: Amy Fredregill
Managing Director, Sustainable
Growth Coalition

Unprecedented challenges this year have put a spotlight on the need for collaboration, leadership, and new ways of thinking. But with these challenges, opportunities for meaningful solutions and long-term change have arisen.

"As we look to the future, leaders and innovators in the business community are stepping up to invest time and effort into rebuilding a stronger, more resilient economy centered on systems change, clean energy investments, circularity, and equity."

The Sustainable Growth Coalition is a business-led partnership of nearly 30 businesses and organizations leveraging their expertise to advance the circular economy. Together, we are driven to make meaningful, positive impacts that address not just environmental challenges, but also social and economic ones. Through the lens of circularity, we see how people, communities, the environment, and the economy are all interlinked.

Many of our members have regional and global footprints, and to address complex issues from climate change to an international pandemic, it takes

a systems change focus. Investment in renewable energy is an important part of a thriving twenty-first century economy and a key element to move us further and faster toward circularity. Whether it's eliminating carbon emissions across supply chains, being responsive and adaptable to investor and consumer preference, or actively engaging with the communities businesses serve to listen and to work with them, real leadership and a circularity-centered approach are key to building a more resilient, nimble economy.

Coalition members are exploring ways to electrify fleets, advocate for a transmission grid able to adapt to and support renewable energy technologies, tackle climate change, and build an economy better designed to overcome challenges. Coalition member Xcel Energy, for example, is pledging to power 1.5 million electric vehicles in its service areas by 2030. Ecolab is working with its customers as part of their 2030 Impact Goals in an effort to become carbon neutral and reduce greenhouse gas emissions by 4.5 million metric tonnes, helping to prevent more than 7 million pollution-related illnesses. And member 3M's sizable headquarters in the Twin Cities has run on 100 percent renewable energy for more than a year.

"Leaders from the business community are often going above and beyond government mandates, responding to their customers, employees, investors, and communities because sustainability and investments in clean energy and circular solutions will not only be better for the environment, but give them a competitive advantage in a global economy."

We can only continue to achieve crucial, widespread change by bringing talent and expertise together, with problem-solving action centered around circularity. 2020 has put a spotlight on how interconnected communities, business, people, and our economy are. Now is the time to advance circularity principles and systems change, and business leadership and collaboration will help get us there.

environmental-initiative.org/work/sustainable-growth-coalition

CAP Services Goes SOLAR:

People in Need Benefit through Non-Profit Collaboration

Non-profits provide an opportunity for people to work together for the common good, transforming shared values and dreams into desired action. The missions may differ, but there are occasions when missions align, allowing non-profits to work together to bring ambitions to life and help the people they serve.

CAP Services, Inc. is a non-profit headquartered in Stevens Point, WI and works to transform people and communities to advance social and economic justice. They do this through lending, business coaching, housing support, family wellness services, and more.

In 2019, the Midwest Renewable Energy Association (MREA) became a proud project partner of its Photovoltaics for Domestic Violence (PV/DV) Project. CAP and project partners raised \$21,450 to cover the project costs, which resulted in a 13.3 kW solar system on CAP's Family Crisis Center (FCC) in March of 2020. The 24-hour domestic violence and runaway youth shelter serves over 1,400 victims of violence each year and welcomes individuals of all backgrounds and identities.

This vital shelter provides a safe space for those who have nowhere else to go, but because it runs 24-hours, the costs of running this shelter adds up

quickly. The FCC has been spending about \$4,500 per year on electricity; the new system will now provide 44% of the FCC's annual electrical usage. The system will save over \$84,000 in electricity costs over the 30-year warranted life of the system. These savings allow CAP to dedicate more of their financial resources to serve victims of domestic abuse and runaway youth. Instead of going to a utility bill, these funds will go to vital operations like telephone and walk-in services, weekly support groups for children, teens, and adults, legal and advocacy services, and transitional housing.

In the words of Nicole Harrison, the CAP President and CEO, "The electricity being generated by the panels directly offsets shelter operation expenses resulting in more resources for client services. It is a gift that keeps giving and a project we know will serve as a model for ourselves and others." CAP Service's project has, and will continue to, serve as a model for MREA as it works to expand solar throughout the Midwest. As part of MREA's Wisconsin Solar Corps initiative, MREA worked to advance ten high-impact solar installations on non-profits that are assisting underserved populations and schools; CAP was the first non-profit to receive this solar grant.

The MREA is continuously inspired and grateful for organizations with the



vision and desire to turn renewable energy implementation into a community resource.

"Imagine if all non-profits were able to capitalize on the opportunity to convert their energy costs into funds that could be allocated into their services."

There are over 19,000+ public non-profits in Wisconsin alone. Ideally, this transformation will become a catalyst, transforming not only our community, but the Midwest and beyond. midwestrenew.org/solar-grant



By: Taylor Ball
Program Administrator,
Midwest Renewable Energy
Association (MREA)

Plug in to the Perks of Fleet ELECTRIFICATION



The transition to electric vehicles provides a significant opportunity to businesses that operate vehicle fleets.

"Electric cars are more efficient, less polluting, safer, and cheaper to operate than their gas counterparts. Consumers and organizations alike are starting to realize that these benefits are too large to be ignored any longer."

Fleets are making the switch, and for good reason. Not only does driving electric reduce a fleet's emissions, it is also an excellent way to reduce operating expenses. Powering an electric vehicle can cost half as much as fueling a gas vehicle, and the savings add up quickly, especially when the cars drive a lot of miles. Plus, when fuel expenses are paid through the electricity bill, those expenses can be offset by investing in on-site solar.

Wygo is a grocery delivery service based in Troy, Michigan. They started operations in January 2018 and have

six all-electric Chevy Bolts. When asked why he chose electric vehicles, founder Mike Theodore said, "Economically, EVs just make sense. It only costs \$5 to go 300 miles, and there's hardly any maintenance." In addition to the fuel cost savings, electric cars have relatively few parts, which means they never need an oil change and require very little routine maintenance. Fewer repairs and less time spent in the shop means more productivity per vehicle."

Theodore went on to say, "Many of the Wygo vehicles are coming up on 100,000 miles, and I've only had to change the tires." Theodore also mentioned that he appreciates the fact that his business is environmentally friendly. As a self-professed "car guy" and a businessman, Theodore says, "If I can be convinced to use an EV, anyone can be."

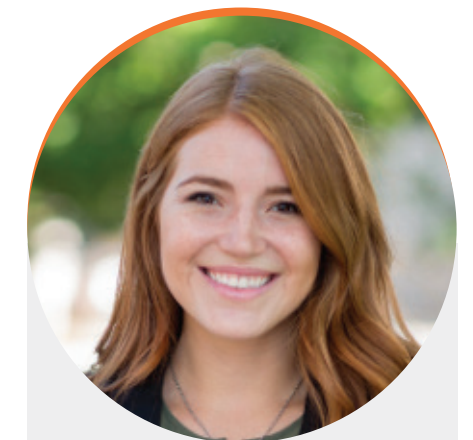
Other companies are realizing the cost savings benefits of EVs, too. DTE Energy, an energy provider in Southeast Michigan, has electrified 8% of their fleet in order to reduce operating expenses. Emissions are important to DTE too, and Amy Joyce, Director of Fleet Operations, said that, "DTE has had EVs in its fleet for over a decade, and we will continue

to electrify our fleet as we progress on our journey to achieving net zero carbon emissions by 2050." DTE already has a number of different types of electric vehicles including retrofitted electric pickup trucks, passenger vehicles, manlifts, ATVs, and forklifts. And, as the landscape of available options continues to change, they are committed to adding additional electric vehicles.

For a full list of electric vehicles available on the market, check out CALSTART's Drive to Zero program, which has a number of helpful tools, including a vehicle directory where you can browse by vehicle type and make, at www.drivetozero.org. Fleets can look forward to even more electric vehicles coming to market soon, too. There are at least five electric pickup trucks that will drop in the next two years, making it easier than ever for construction vehicles to be electrified. The industry is also expecting a drastic increase in electric delivery vehicles and short haul trucks.

No matter your fleet size, going electric will help save money on fuel and maintenance expenses and improve air quality in the communities you serve.

It's time to plug in to the perks of going electric!
cleanfuelsmichigan.com



By: Jane McCurry
Executive Director,
Clean Fuels Michigan

Solar for GOOD: Helping Wisconsin Non-Profits Go Solar

CO-AUTHORED BY:



Sam Dunaiski
Distributed Renewable Energy Program Director, RENEW Wisconsin



Jodi Jean Amble
Communications Director, RENEW Wisconsin

RENEW Wisconsin's Solar for Good program fosters the expansion of solar power among mission-based non-profits and houses of worship in Wisconsin. Through generous funding from the Couillard Solar Foundation, and other donors, the Solar for Good program awards grants and solar panels to non-profit organizations, helping them switch to clean, renewable solar energy.

Since its inception in 2017, Solar for Good has opened two grant cycles per year (in the Spring and Fall) and offered solar grants to 96 Wisconsin-based non-profits. Most of these projects are now installed and producing clean, emission-free electricity while recently approved projects are just getting their construction underway. Once all 96 solar projects are energized, these non-profits will have added over 4 MW of clean, renewable energy to Wisconsin's electric mix, enough to power approximately 900 homes.

Altogether, the Solar for Good projects represent \$9.2 million of local economic investment in Wisconsin's renewable energy industry.

Business owners Cal and Laurie Couillard of Deerfield conceived of and seed-funded the Solar for Good program, which RENEW Wisconsin designed and administers.

"The idea is that if we can install solar panels on churches and other non-profits, then all the people that are going there will also see this happening. I want to spread the message that solar is not just green for the environment, it's green monetarily. You can actually save money doing it. It pays for itself. And I want to get that word out because I don't think a lot of people know it," said program founder Cal Couillard.

By installing their own solar PV systems, these organizations generate their own clean, renewable energy, save money on their utility bills, and reinvest the

energy cost savings back into their work.

Menikānehkem, a grassroots community organization based on the Menominee Reservation in Northeast Wisconsin, installed solar panels to power several tiny homes to house the homeless population on the Menominee Indian Reservation: "We decided to go solar to reduce our energy bills and to focus more of our resources on programming," said Guy Reiter of Menikānehkem. "We plan to use the array as a training center for community members interested in pursuing a career in solar. Thanks to the Solar for Good grant, we are moving closer to our goal of making the Menominee community energy-sovereign as a way to create jobs, restore hope, reduce carbon pollution, and mitigate climate change."

In 2020, the Solar for Good program received new funding from the Array it Forward initiative at First Unitarian Society in Madison. The First Unitarian Society won a Solar for Good grant in 2018 and wanted to share the benefits they received from their solar array with other non-profits across Wisconsin. Array it Forward is made possible through donations solicited from their congregation and the broader community.

"We at First Unitarian Society are excited to see Array it Forward fund its first solar projects. Taking a step towards climate justice becoming a reality, even in this small way, is very gratifying," said Nancy Vedder-Shults.

With solar installation costs falling dramatically and public enthusiasm on the rise, more and more people and businesses have installed solar in recent years. Solar for Good's goal is to expand the benefits of solar to non-profit organizations who cannot benefit from tax incentives. Solar for Good helps non-profit organizations educate their communities about the benefits of solar power and save money on their electric bills that they can reinvest in their missions.

renewwisconsin.org/solarforgood

A PV Demand Credit Makes Sense for ALL Commercial Ratepayers

Advocates for distributed solar often tout its demand-shaving properties as one of its principal values for the grid. Because solar photovoltaics (PV) often produce when demand on the grid is at its peak, rooftop or other behind-the-meter PV can have the effect on the grid of reducing peak demand. Utilities have long shaved peak demand through demand-response curtailment for commercial and industrial (C&I) customers on so-called "standby tariffs." This curtailment shaves the peak of the demand curve, allowing utilities to build less capacity.

Co-generation can also reduce a utility's capacity needs, and some utilities offer a capacity credit to facilities with on-site generation. Such was the case for Xcel Energy in Minnesota, which had paid value to on-site C&I PV facilities through the Capacity Credit tariff. That tariff had been designed with combined-cycle natural gas plants in mind and was a poor fit for the intermittency of PV generation: Xcel employees needed to calculate every hour when PV generation occurred on peak and off peak. **Enter the PV Demand Credit Rider.**

A largely collaborative approach to negotiations between the Minnesota Department of Commerce, Xcel Energy, C&I stakeholders, and MnSEIA solved the mismatch between the existing Capacity Credit and the intermittent generation of on-site PV.

This tariff applies to Xcel standby customers with on-site, net-metered PV between 40 kW AC and 1 MW AC, and currently pays 6.9648¢ for every kWh exported during 1:00 PM and 7:00 PM during all months of the year. Rate will be updated with Xcel Energy rate cases and—because the credit's methodology is based on "embedded costs" instead of "avoided costs"—it should increase with utility costs. Xcel Energy tends to engage in rate cases every three years, and so three years serves as the de facto price term for the PV Demand Credit.

"For C&I customers in Minnesota's Xcel territory, the PV Demand Credit represents a tremendous opportunity. Within the first year of this tariff, over 50 projects totaling 14 MW were installed, and growth continues in this market today."

That's no wonder, considering the value proposition to a C&I customer. During the best hours of PV production, these net-metered projects over 40 kW—which under Minnesota law would otherwise only be paid avoided cost rates for exported energy—get almost 7¢/kWh for energy sent to the grid, not to mention the energy savings from not buying grid power.

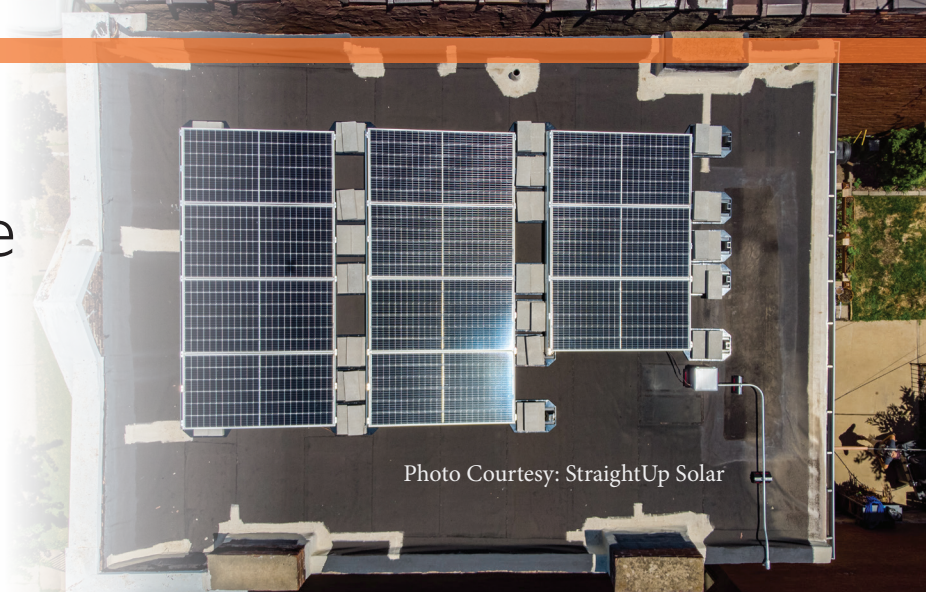


Photo Courtesy: StraightUp Solar

"Meanwhile, the utility can avoid building and/or running expensive gas peaker plants during peak hours, and pays a relatively small premium to solar C&I customers for the privilege. And, because ratepayers would otherwise have to bear much of the burden to build out peak capacity and fuel costs, we all benefit."

With this sort of win-win-win proposition, it's not hard to imagine similar tariffs sprouting up beyond Minnesota. mnseia.org



By: Peter Tiegland
Policy Associate, Minnesota Solar Energy Industries Association (MnSEIA)

Solar FINANCING for Midwesterners:

greenpenny Partners on School District Net-Zero Project



A digital-only bank, greenpenny, is dedicated to serving industry and individuals in the U.S. concerned about climate change, as well as those wanting a user-friendly digital banking experience.

Our mission—To finance a sustainable tomorrow—is supported by our promise that money deposited in greenpenny will be used to finance renewable and energy-efficient projects, such as the Wabasha-Kellogg Community School District in southeastern Minnesota.

Their team chose greenpenny to finance the project, and so the story begins.

“With the leaders at Wabasha-Kellogg Community School District wanting to be good stewards of the land and its environment, so began RA Energy owner, Gary Gustafson’s journey of teaching and helping the district’s leaders to develop a sensible plan to become a net-zero energy user.”

Gustafson discovered greenpenny through a fellow developer when discussing a community solar garden.

When he reached out to us, the project seemed like a great match and financing the project moved forward. Additionally, the project developer sold tax credits to reduce the overall cost of the project by 30%; these huge savings went directly to the school district.

In the end, greenpenny was able to help finance the solar fields to help the district produce its own sustainable energy. The district also installed LED lighting and was able to reduce water consumption by 400,000 gallons annually as part of their overall goal to become a net-zero energy user. A huge success for all involved.

greenpenny’s goal is to make it easy for people and companies to be environmentally responsible, and we do this by offering smart checking and savings accounts, renewable energy financing, free digital banking tools, and business financing specialists with a passion for clean and renewable energy. By opening a greenpenny

checking or savings account, you too can help finance clean and renewable energy projects such as this one.

If you have a project you think we can help with, want an easy way to do more for the planet, or are just looking for great services, get on board! greenpenny.com



By: Mike Ludeking
Business Financing Specialist,
VP, greenpenny

Commercial PACE Flourishes Despite COVID-19:

It Might Be Exactly What Your Business Needs



Many industries have been negatively impacted by COVID-19 and are now facing unprecedented challenges. For some, energy efficiency projects may not be top of mind. However, commercial property assessed clean energy (C-PACE) provides a useful opportunity to leverage inexpensive, long-term capital to create cost savings and provide liquidity, all of which strengthen businesses long term.

PACE has become one of the most important economic development tools that participating counties have at their disposal. In 2019, Nationwide C-PACE investment surpassed \$1.5 billion, and annual activity increased 150% to \$670 million, according to data from PACE Nation, the national non-profit that advocates for PACE financing. Following that nationwide trend, C-PACE programs and lenders have seen an uptick in applications. As is the case nationally, the PACE Wisconsin Program has continued to see growth in the program, even during these challenging times, which is helping to create jobs, increase property values, and improve sustainability in communities across the state.

C-PACE is an innovative public/private partnership that leverages private capital to offer property owners access to low-cost, long-term financing for

energy efficiency, renewable energy, and water conservation improvements to commercial properties. Projects financed using C-PACE are non-recourse to the borrower and can generate positive cash flow upon completion. Because there are no up-front, out-of-pocket costs to property owners, C-PACE eliminates financial barriers that impede investments in clean energy improvements to new construction and existing buildings.

“Projects funded with C-PACE financing improve business profitability, boost property values, and drive community-wide clean energy benefits.”

Since our first Wisconsin funding closed in December 2017, PACE Wisconsin has financed 38 transactions for a combined \$51.4 million of direct investment in commercial clean energy improvements. We’ve seen strong year-over-year growth and anticipate the program will play a vital—and expanding—role in Wisconsin’s economic development in the years to come.

The program supports the redevelopment of existing buildings, as well as new construction projects. Eligible property types include office,

retail, multi-use, manufacturing, agriculture, healthcare, hospitality, non-profit, and multifamily (with five or more units) buildings.

PACE Wisconsin is a statewide C-PACE Program. It currently operates in 45 Wisconsin counties that collectively represent over 85% of the state’s population. PACE Wisconsin drives economic development by authorizing participating local governments to work with private-sector lenders to provide upfront financing for qualified energy efficiency, renewable energy, and water conservation improvements on commercial properties.

pacewi.org



By: Kimberly Johnston
Marketing Manager-Strategy,
PACE Wisconsin

The Value of Your Membership: Grow OUR Voice



Join MREA online and see a full list of Membership Benefits at midwestrenew.org/membership.

MREA Members have been leading the charge and fueling the mission of the MREA since its inception in 1990. Their collective conviction, determination, and generosity are the reason the MREA still thrives today. They are the pulse and voice of the organization.

The first MREA Members were a small group of folks from Amherst, Wisconsin who came together in response to an editorial from Home Power Magazine encouraging people to start hosting “Energy Fairs” across the country. They devised an event, trusting education would help make renewable energy mainstream in the Midwest, and despite a rainy forecast, the first “People’s Energy Fair” drew 4000 attendees who demanded a repeat Fair the following year.

This small group of MREA Members and founders were also motivated to host the initial Energy Fair by the first Gulf War, waged by the U.S. from August 1990 to January 1991. They sought a clean, renewable energy source to power their homes and businesses in response to their country fighting endless wars for oil. The Fair provided them networking, unity, inspiration,

and collective knowledge—all of the tools a small group of people need to foster change at the grassroots level.

Following the first Energy Fair, the group incorporated as a 501(c)(3) non-profit organization, founding the Midwest Renewable Energy Association (MREA). Today, the MREA remains a member-led organization with 2900+ members backing our mission to promote renewable energy, energy efficiency, and sustainable living through education and demonstration.

“Member support of solar is proving effective and prosperous.”

According to the Solar Energy Industries Association U.S. Solar Market Insight Report 2020 Q3, the Midwest’s cumulative solar PV installations now total 2978.45 MW. And nationally, in the last decade alone, “Solar has experienced an average annual growth rate of 49%,” plus “there are now more than 85 gigawatts (GW) of solar capacity installed nationwide, enough to power 16 million homes.”

Furthermore, in 2019, “the solar industry generated \$18.7 billion of investment in the American economy.” And as of Fall 2019, “Nearly 250,000 Americans work in solar—more than double the number in 2012—at more than 10,000 companies in every U.S. state.” It is people demanding new policy that propels the industry to leap from milestone to milestone and when they speak together as one voice united through an organization’s mission, their power increases tenfold, as does the merit of the organization.

MREA’s Director, Nick Hylla, often states that a primary role of non-profit organizations is to make goods and services available that should be but aren’t. In MREA’s history that has meant working for a solar powered economy, even back when PV systems were primarily found on spacecraft and remote research stations. Today, it means making clean energy careers available in communities where they are most needed. Belonging to a non-profit organization as a member, no matter what its mission, allows people to propel needed services forward and fill perilous gaps in our communities.

Likewise, the role of the organizational member in our society assures non-profit organizations’ security in longevity. While some people can afford to renew their membership dues annually without default, others may not as their financial situation fluxes, but membership en masse allows organizations to flourish long term and execute successful strategic plans.

Many non-profits now offer lifetime levels of support which are gaining traction as members find themselves strongly devoted to a cause and willing to pledge all of their financial support upfront to assure the organization stability.

Additionally, membership income is invaluable to many non-profits as it can be classified to fund general operating expenses and provides support where organizations need it most, unlike grant funds which are often restricted income.

“The value of non-profit membership to our communities and the Midwest overall is immense, but perhaps even mightier is the value it provides each member.”

To belong to something greater than yourself is to live large, engage in progress, and accomplish the impossible. It is to do what is right and in return provides well-being and satisfaction unparalleled in today’s society.



By: Gina Miresse
Development Director,
Midwest Renewable Energy
Association (MREA)

MREA Annual Membership:

PERSONAL MEMBERSHIP LEVELS

BASIC

Senior/Student—\$30
Individual—\$50
Family—\$70

EMPOWERED

Individual—\$80
Family—\$100

LIFETIME

Individual—\$500
Family—\$750

**Empowered Membership comes with your choice of magazine subscription to: Mother Earth News, Grit, or Yes! Magazine*

BUSINESS MEMBERSHIP LEVELS

BASIC

Non-profit—\$75
Private—\$125

PREMIER

Private—\$200

GREEN

Private—\$500

SUSTAINING

Non-profit—\$750
Private—\$1,000

MEMBERSHIP BENEFITS

- Free Renewable Energy Online Tutorials
 - Eligibility to Join the Clean Energy Credit Union
 - Discounted Courses and Marketplace Items
 - Business Member Directory Access
 - Electric Vehicle Charging
 - Monthly Newsletter
- Special Benefits for Business Members**

MORE INFO / JOIN

midwestrenew.org/membership

Call to Action: Midwest EDUCATORS

Today, the biggest limitations to the clean energy transition are not technological or financial, they are human. States across the country and nations across the world are proving that informed and motivated leadership can meaningfully engage the public to transition to clean energy. This requires real policy leadership, project development, public education, and workforce investment.

In the Midwest, schools and universities are investing in future energy leaders.

With cutting edge project investments, ambitious climate plans, and leading student education experiences, Midwest educators are leaning into a clean energy future. Universities and technical colleges increasingly understand that leadership begins in elementary school. School administrators increasingly understand that leadership begins by walking the talk with real project investments. And workforce development partnerships are forming to strengthen knowledge sharing between schools and engagement with employers.

The following articles share a range of perspectives. They are by no means exhaustive but reflect real progress being made throughout the Midwest. Are you an educator or administrator? Are you making investments that inspire the next generation of leaders? We hope these perspectives inspire you to re-double your efforts.

Rise Up, Midwest EDUCATORS!

Additional Resources for Midwest Educators:

Take Action!

Help Your School Go Solar:

- midwestrenew.org/solar-on-schools
- generation180.org/helpdesk
- createenergy.org/solar-toolkit.html

Enhance Your Curriculum:

- keepprogram.org
- createenergy.org

Train the Clean Energy Workforce:

- midwestrenew.org/solarcorps

Check Out Solar On Schools Case Studies:

- midwestrenew.org/solar-on-schools





The Oregon School District:

Bringing the Wave of Net-Zero Schools to Wisconsin

Photo Courtesy: Findorff Builders

According to the Department of Energy, **energy consumption represents the second highest operational expense for school districts**, second only to salaries. Realizing not only cost savings potential, but the ability to create a living laboratory and model of sustainability, the Oregon School District joins an elite group of forward-looking school districts with their new Forest Edge Elementary School. Completed in 2020, the 126,000 sqft K-6 facility is the first Net Zero Energy (NZE) school in the State of Wisconsin and one of the largest in the U.S. offsetting 100% of all on-site energy needs.

Achieving net-zero required a holistic approach addressing both the supply and demand sides of energy. The strategy first minimized demand side consumption, and then tackled the supply side—how to generate the necessary energy in a pollution-free, renewable way. The design includes state-of-the-art energy efficiencies, such as an on-site microgrid/battery storage and renewable energy systems including solar PV and geothermal. The 646 kW DC/500 kW AC rooftop solar PV system and geothermal heating/cooling system will be leveraged as educational tools for the school and the larger community, with a viewing area to observe the roof mounted system, and an energy dashboard that can be accessed online by anyone interested in learning about the school's sustainability features.

The dashboard reports ongoing energy performance compared to the NZE target, demonstrating in 'real time' evidence of the return on investment.

The challenge of designing a NZE elementary school—with no additional costs over the life of the school—needed an outside-the-box approach from the start. Low-interest green bonds, a resource created to help fund projects with positive environmental and/or climate benefits, were utilized and NZE performance was stipulated in the green bond documentation. Having a design and construction team who were all collectively passionate about the NZE mission also enabled technical challenges to be resolved more easily, such as needing to reduce the amount of glazing to drive down energy usage, correctly sizing HVAC equipment to reduce inefficiencies associated with equipment over-capacity, and excluding a natural gas line designed into the building. Everything is electric with on-site battery storage—stoves, lawn mowers, water heaters, everything.

Innovative energy systems complement exceptional learning spaces with unique learning opportunities, while benefiting the school district and broader community by reducing operating costs and promoting environmental preservation.

The success is summarized in a statement from Oregon School District:

"This solar PV system enables our school district to reduce operational expenses on energy and divert more of the available budget to resources that directly impact student success!"

hga.com

CO-AUTHORED BY:



Suzanne Ferris
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Mike Barnett
Senior Engineer, PE, HGA

Solar on Schools: Empowering the Leaders of Our Clean Energy Future

Wisconsin public schools collectively spend more than \$175 million annually on energy, their largest expense outside of personnel. The dramatic decline in the cost of solar over the last decade has provided schools a unique means to reduce this expense without cutting any educational programs. The benefits of solar go well beyond financial savings, however, and have led schools to become leaders in solar development.

Each school solar project is a unique experience specific to a district's needs and motivations. In Wisconsin we've seen solar school campaigns being led by student groups, school board members, and community solar champions. These campaigns have been motivated by school district renewable energy resolutions, financial savings, educational opportunities, and environmental considerations.

For example, Madison West High School's solar journey began as a student-led effort. From 2017 through 2019, the West High Green Club raised over \$89,000 from staff, students, parents, community members, and local foundations and businesses to support a West High solar installation. This past September, West just completed the installation of their 125.8 kW DC system. In 2019, the district also passed a 100% renewable energy resolution, aiming to meet all operational energy needs with renewables by 2040.

Alternatively, the Merton Community School District project was born in Spring 2018 when a school board member was pursuing solar energy for their home and brought the idea of solar PV to the district to save on operating expenses. By December 2019, the district had installed a 389 kW DC system. The entire system is projected to produce almost two-thirds of the district's energy needs, resulting in an average electricity savings of \$70,000 annually.

School solar installations like these represent high-impact, high-visibility projects that bring the community together to collectively learn about the process and benefits of going solar. These projects also represent important opportunities for students to be directly exposed to and immersed in renewable energy. Installing solar onsite allows schools the opportunity to provide hands-on education, promote student leadership experience, and facilitate career exploration for students in renewable and clean energy. Being able to see the energy production in real time and calculate the energy savings engages curious young minds. How do the solar modules produce electricity? How does cloud coverage impact energy production? Is it necessary to scrape the snow off the system in winter? These experiences help students become excited about clean energy career



Photo Courtesy: Madison West Green Club

opportunities. And if the next few decades of energy development unfold like we expect, the Midwest will need every skilled and dedicated professional we can attract.

Clean energy represents one of the fastest growing career fields in the United States, adding jobs 70 percent faster than the overall economy from 2015-2019. As of 2019, the industry employed nearly 3.4 million Americans, more people than worked as schoolteachers and three times as many that worked in fossil fuels. These are well-paying, career opportunities with a demand that is only going to grow as our national energy economy continues to transition from fossil fuel.

"By investing in solar, passing 100% renewable energy resolutions, integrating energy education into curriculum, and cultivating the next generation to be leaders and have careers in the industry, schools can lead their communities into a clean energy future."

For information and resources on how your school can go solar, visit:

• midwestrenew.org/solar-on-schools



By: Amanda Schienebeck
Program Manager,
Midwest Renewable Energy
Association (MREA)

In Northern Iowa SOLAR SAVES

a Community College \$200,000 a Year in Operating Expenses



“At a time when most colleges and universities are looking for ways to tighten their belts, solar energy offers a very real solution.”

Photo Courtesy: North Iowa Area Community College

Earlier this fall, North Iowa Area Community College (NIACC) celebrated the groundbreaking of one of the largest solar arrays at a community college in the country.

“This solar project is transformative for the college in a number of ways,” said Steve Schulz, NIACC President. “We expect the energy savings for the College to be considerable, approximately \$392,200 a year, or 58% of the campus’ current consumption.” Schulz continued, “This project is a socially responsible investment and underscores the College’s ongoing commitment to sustainability and doing our part to protect the environment.”

The project also underscores the benefits of private business and higher education working together to create strategic and mutually-beneficial partnerships to create healthier campuses. The collaboration between the College and a private investor to build the initial infrastructure, provides the investors with solar tax credits, and the College will begin to see energy savings almost immediately.

NIACC’s project will utilize 5,800 bifacial modules as part of five ground-mounted arrays and four rooftop

arrays. Traditional solar modules (panels) capture light on one side only, the front portion of the panel, and the light that cannot be captured is simply reflected away. Bifacial modules, however, have solar cells on both sides, enabling the panels to absorb light from the back of the module as well as the front. NIACC’s ground and rooftop arrays will produce more energy throughout the day from the reflection on the backside of modules, as well as from snow covered ground and white roof surfaces. Bifacial modules yield up to 11 percent more energy than traditional solar panels in a ground mounted installation and yield up to 7 percent more energy in a roof mounted installation.

Interest in this type of project has been building for years. “NIACC has a long history of being committed to purchasing and using energy in the most efficient, cost effective, and environmentally responsible manner possible,” said NIACC Facilities Director Tony Pappas. “This solar project is one more example of our commitment to energy conservation and environmental stewardship. Reducing our utility costs by utilizing solar energy will provide direct financial support to all other college operations and will complement

the academic programs and community events for many years to come.”

Construction of the nine solar arrays should be completed by December 2020. At a time when most colleges and universities are looking for ways to tighten their belts, solar energy offers a very real solution.

The NIACC solar project will reduce campus energy costs by approximately \$10.7 million over the next 25 years.



By: Valerie Zahorski-Schmidt
Director of Marketing and Community Relations, North Iowa Area Community College

Madison College and the CREATE Energy Center: A Once-In-A-Generation Transformation of School Energy



The past two decades have seen massive growth in renewable energy, and solar photovoltaic (PV) installation has been one of the fastest growing occupations in the nation in recent years. The transformation of the solar industry has created an exciting new opportunity for schools to pursue solar developments for their facilities.

“Investing in solar PV systems also represents good stewardship of taxpayer dollars, since the money saved on electric bills can be focused on things that directly impact student learning (e.g. investments in instructional technology, teaching materials, and smaller class sizes).”

Solar PV systems help to lower ongoing operational costs for schools by reducing utility bills, providing budgeting certainty for future electric costs.

In 2019, Madison College commissioned the largest rooftop PV system in Wisconsin. Comprised of over eight acres of solar panels, the system is rated at 1.85 MW DC. When skies are clear, the system provides all of the electricity needed to operate the one million square foot Truax Campus building for several hours throughout the day. After factoring in cloudy days and nighttime operations, the system offsets about 25% of the building’s annual electric bill.

Madison College installed its first PV system in 2002 and has offered a Renewable Energy Certificate Program for students since 2005. In 2017, the college created a Solar Roadmap that examined all of its campuses and buildings for their solar potential.

The college worked with the Midwest Renewable Energy Association to develop the roadmap, prioritizing projects based both on their potential

By: Ken Walz, Science, Engineering, and Renewable Energy Instructor, Madison College

The Truax Campus received the highest priority in the College’s Solar Roadmap because it is the school’s largest energy consumer and serves the largest number of students. The Truax installation was completed in 2019, and the college has proceeded with additional solar projects for its new Childcare Facility, along with the Fort Atkinson, Reedsburg, and South Madison Campuses.

Madison College is the lead institution for the CREATE Energy Center. Funded by the National Science Foundation, the Center’s goal is to promote renewable energy educational programs nationwide. CREATE and Madison College have developed a Solar on Schools toolkit to assist schools with their own solar projects. The toolkit includes a ten-step guide to create a solar roadmap, a model request for proposals for schools seeking to contract with solar developers, recommended solar design practices for educational audiences, and several other resources intended to flatten the solar learning curve. The Solar on Schools toolkit is available for free at createenergy.org.

Today’s education leaders are presented with a once in a generation opportunity to transform the way that schools operate their buildings. Individuals that champion solar projects for their schools can be confident that their efforts will provide enormous benefit for education and the environment, while also delivering great economic value to the schools and communities that they serve.



The SOLAR CORPS: Building a Midwest Solar Workforce Partnership



The Midwest solar market is poised to be the fastest growing in the country and businesses are hiring. Two-year colleges are expanding, starting, or rebuilding solar energy technician training programs and will benefit from instructor training, hands-on opportunities for students, and relationships with local employers. The Solar Corps is here to help!

This partnership has provided colleges the opportunity to advance their programs and enhance curriculum for existing and future students. According to Ken Walz, solar instructor from Madison College, “The Solar Corps project has helped Madison College to update our photovoltaic instructional lab, adding new technology and improving our teaching practices.

“The Solar Corps, with initial funding through the U.S. Department of Energy Solar Energy Technology Office, is a regional workforce development partnership designed to help technical and community college students across the Midwest develop a career in the solar industry.”

The program helps students and recent graduates gain work experience by building relationships between solar contractors and the Midwest’s leading solar training programs. The Solar Corps assists colleges with two common needs: 1) Providing hands-on and work-site experience for students, and 2) supporting student job placement and professional certification to advance in the solar industry.

In 2019, the Solar Corps partnered with four Wisconsin Technical Colleges to establish student internships, as well as continuing education and professional development opportunities for instructors.

We look forward to continuing this work in the upcoming year to integrate energy storage systems into the mix.” In 2020, the Solar Corps is expanding to two-year colleges in the neighboring states of Illinois and Iowa to further the growing network of technical and community college training programs.

Through the Solar Corps network of colleges and solar companies, the MREA has created the Solar Ready Internship program that gives students the hands-on work experience they need when entering the solar workforce. Work experience is an essential component of workforce development for the growing

solar industry. The 160-hour paid internships encompass many aspects of the industry including sales, design, installation, marketing, and customer relations. The program provides solar businesses throughout the Midwest the opportunity to connect with students and recent graduates studying to become solar professionals. These contractors have the opportunity to connect with potential employees that have the training and drive to help grow their business.

Following the first round of internships in 2019, many of the students who participated in the program were offered permanent positions. According to one contractor, “this intern has a great attitude and even better work ethics. Our plan would be to hire her after graduation.” To facilitate further job placement, the MREA recently launched the Midwest Solar Job Resource Center at www.SolarEnergy.jobs. The resource center will provide Midwest employers, students, and technical college training programs a common meeting place to facilitate employment and workforce development.

If your business or solar training program would benefit from this regional solar workforce partnership, you can join the Solar Corps today at: midwestrenew.org/solarcorps



By: Ellen Barlas
Solar Workforce Manager,
Midwest Renewable Energy
Association (MREA)



The Illinois Green Economy Network: a Community College Partnership

My passion for the environment and sustainability began with a course on environmental biology that I took at a community college in Illinois. As a direct and positive result of that course and experience, I changed my major and transferred to a four-year university in the state. After graduating with a degree in environmental studies, I found my dream job within a network that took me back to where everything started—now, almost a decade later, I am leading that network!

The Illinois community college system is the third largest in the U.S., annually educating and training 700,000 students. Community colleges are the primary provider of higher education, technical training, and workforce preparation in Illinois. According to the Illinois Community College Board, almost 75% of employers in Illinois have hired community college students.

Formed in 2008 through an intergovernmental agreement with support from the Department of Commerce and Economic Opportunity and the Governor’s Office, the Illinois Green Economy Network (IGEN) is a consortium of all 39 Illinois community college districts. IGEN’s mission is to provide a platform for collaboration among all Illinois community colleges and their partners to drive growth of the green economy.

“Our vision is for the Illinois community college system to be a global leader in transforming the economy and education for a sustainable future.”

To date, we have successfully managed the implementation of numerous grant-funded sustainability-related initiatives, programs, and projects at Illinois community colleges statewide, totaling over \$30 million. We’re led by an administrative team that receives direction from a Presidents’ Steering Committee, including Illinois Community College Board representation.

The network’s main objectives are to expand deployment of clean energy technologies, increase employment opportunities, improve environmental and human health, foster community engagement, and accelerate market competitiveness. The majority of all funding received has been provided to Illinois community colleges for projects related to energy and sustainability. Over the past several years, Illinois community colleges have achieved the following successes as a result of the network’s collective impact: 25 colleges have created or expanded curricula for over 70 courses and programs to include energy efficiency

and renewable energy, including career pathways into the energy industry; 21 colleges have installed solar systems totaling almost 1,500 kW; 15 colleges have implemented energy efficiency and renewable energy-related capital, equipment, and upgrade projects for campuses as living laboratories; over 15,000 people have been trained through energy-related events and programs; and, an estimated 325 energy-related jobs were retained.

The IGEN model has potential for replicability and scale-up in other states in the Midwest, as well as nationally. igencc.org



By: Katie Davis
Director,
Illinois Green Economy
Network (IGEN)

Leading by EXAMPLE: A Comprehensive Approach to Renewable Energy at the University of Minnesota

Don't put all your eggs in one basket." In countless circumstances you'll hear this given as advice: from how to invest retirement savings to not counting on one key player to save the game. But what about electricity supply? This is a question and an idea that has animated our comprehensive approach to energy for the University of Minnesota.

Many organizations, including higher education institutions, receive most, if not all, of their electricity from one utility supplier. In effect, those organizations have put all of their eggs in one basket, making them dependent on one supplier to achieve all of their reliability, cost, renewables, and emissions goals.

"While we are fortunate to have forward thinking utilities throughout the Midwest that are working hard to build out more renewable energy sources, reduce emissions, improve reliability, and keep costs low, there is no guarantee that those utilities will meet their goals and, most importantly, the goals of your organization."

Over the last decade, we have been envisioning and implementing strategies for diversifying our energy supply at the University of Minnesota Twin Cities campus. The Twin Cities campus is one of the largest in the country, with over 50,000 students

and 24 million square feet of facilities, including energy intensive research and medical space. Our diversification efforts began with a decision to renovate a decommissioned central heating plant into a modern combined heat and power facility on the campus in Minneapolis. Completed in 2017, the renovated Main Energy Plant (MEP) delivers up to 22 MW of electricity to meet campus needs; additionally, the waste heat from the process is captured to heat campus buildings. While MEP does not use renewable fuel (yet), the process is almost twice as efficient as the conventional approach: producing electricity at a large, off-site facility and using a separate boiler on-site to create heat for use in buildings. This results in less fossil fuel use across the entire energy system, which reduces emissions and improves resilience and reliability.

While the MEP was undergoing renovation, we were also busy on the renewables front. From 2016–2020, we:

- Contracted for up to 46 million kWh/year of community solar.
- Worked with our utility, Xcel Energy, on the development of their green tariff program, Renewable*Connect, and agreed to purchase ~17 million kWh/year of wind and solar energy through Renewable*Connect.
- Built almost 2 MW of solar energy on campus.

As a result of these and other efforts, we have reduced our carbon footprint from 640,000 metric tons in 2008 to

400,000 metric tons in 2018, a decrease of 37%. The measures detailed above are also projected to save the University in excess of \$2 million a year, while reducing future financial volatility due to changes in utility rates and commodity prices.

In short, we have begun to spread our energy "eggs" among many baskets and in the process have reduced our costs, risk, and emissions. This work continues as we strive to achieve climate neutrality by 2050 or sooner. We invite other organizations and individuals to join in the work as the Midwest leads the way in discovering solutions, creating economic opportunity for all, and transforming our energy system to one that is decarbonized and renewable-powered.

italladdsup.umn.edu



By: Shane Stennes
Director of Sustainability,
University of Minnesota

ENERGIZING Our Students: K-12 Energy Education Program (KEEP)



We believe children yearn to act in sustainable ways. They want to be assured their world is a healthy and peaceful place to live, yet warnings of climate change continue to loom large. How can they believe change is possible for such a daunting issue? For 25 years, the Wisconsin K-12 Energy Education Program (KEEP) has demonstrated that by using locally focused investigations, students exploring their own impact on the world become empowered to lead meaningful change.

School buildings of any size or age can be a powerful model for environmentally-conscious behaviors and technologies. Not only do sustainable facilities have a positive impact on the health and academic performance of students, research indicates that students who attend schools with green features like gardens and rain barrels are more likely to hold pro-environmental beliefs and engage in energy-saving behaviors like recycling. Other studies suggest students familiar with a culture of sustainability at school are more likely to recognize it as important and accept

it as the norm, ideally replication the behaviors at home and in the community.

There is also significant fiscal motivation for school districts to maintain sustainable facilities.

"Utilities account for approximately 30-35% of school maintenance and operation costs, which equated to a 2016 nationwide public K-12 energy bill of roughly \$16.5-\$19.3 billion dollars. The good news is that behavior-based strategies alone have been shown to reduce a school's electricity use by 20-37%."

Energy efficiency projects coupled with renewable energy adoption are a real way for schools to reduce utility costs, which can instead be invested in instructional resources.

The increasing presence of renewable energy systems at schools provides an opportunity to highlight the benefits of clean energy and build real-world

skills through curricular connections. Solar panels, in particular, have found space on school grounds, with over 7,000 systems installed nationwide in approximately 16% of public K-12 districts. One way to bring solar "off the roof" and into the classroom is through inquiry-based explorations of the school's solar generation data, providing opportunities for student-led energy savings campaigns that support STEM and career connections.

We believe in the power of energy education to inspire the next generation of clean energy leaders. KEEP encourages administrators, community leaders, and energy providers to frequently engage K-12 students and teachers when making energy management decisions, particularly regarding sustainability projects. The transition to renewable energy will require ingenuity, commitment, and collaboration. Students have the initiative and passion to participate; we must simply invite their perspectives and empower them to lead as stakeholders in the future of their schools and communities. Access free KEEP energy education resources at keepprogram.org.



By: Stephanie Eidt
Wisconsin K-12 Energy
Education Program (KEEP)

Call to Action:

Midwest COMMUNITIES

The clean energy transition is local. It is a transition to distributed energy resources: solar, wind, energy storage, and energy management resources in every community. This represents a fundamental shift in how we produce electricity. Historic investments have focused on the transmission system—big power plants sending electricity to your community through high voltage transmission lines. Today's clean energy investment opportunity is not only in the transmission system, but also in the distribution system—on roofs and open spaces in your community. This is a tremendous economic development opportunity, but it requires local communities to organize for their own interests.

The local investment, business development, job creation, and resiliency opportunities available in the clean energy transition will come to communities that organize.

If your community is sitting on top of a vast natural gas resource, you know that local organizing is critical to ensure that any resource extraction protects the health and safety of residents, recognizes local property rights, and serves your community's economic development and sustainability goals. Though solar and wind energy are not extractive and don't involve pollution concerns, communities have the responsibility for zoning, permitting, taxation, procurement, and local economic development. There is a key difference however: In the clean energy transition, nearly every community is sitting on a clean energy reserve.

Distributed energy resources bring the opportunity for widespread economic opportunity that refocuses investments from Wall Street to Main Street. Organized and effective local leadership can attract investment, maximize local benefits, and ensure sustainable market growth that supports local businesses, local jurisdiction budgets, and local jobs.

The articles in this section each share strategies and successes from towns, cities, and counties across the Midwest in hopes of inspiring you to replicate and expand on their work.

Rise Up, Midwest COMMUNITIES!

Additional Resources for Midwest Communities:

Take Action!

■ Host a Solar Group Buy in Your Community:

- growsolar.org

■ Help Your Community Achieve SolSmart Designation:

- solsmart.org

■ Learn About Solar Applications and Solar Career Options:

- midwestrenew.org/course-offerings
- solarenergy.jobs

■ Take Charge of Your Energy Future:

- ilsr.org/community-power-map

■ Commit to 100% Clean Energy:

- sierraclub.org/ready-for-100/commitments

■ Develop a Climate Action Plan:

- ca-ilg.org/post/climate-action-plans-local-examples

■ Resources for U.S. Cities and Mayors:

- climatemayors.org/get-involved/city-officials

■ Support Justice and Equity in Energy:

- naacp.org/climate-justice-resources/just-energy



Agressive Clean Energy Goals and a Lean Budget: Jurisdictions Progress with SOLAR GROUP BUYS

Photo Courtesy: StraightUp Solar

Since 2013, MREA has used solar group buy programs to help communities across the Midwest go solar. To date, our programs have resulted in 13.9 MW of solar on over 1,900 residential and commercial properties, and represent investments of almost \$40 million. One of our most successful programs was in Johnson County, Iowa, where Becky Soglin, the County's Sustainability Coordinator, facilitated a collaboration between several local municipalities. Municipalities each took responsibility for raising awareness among their residents and securing venues, with a total of 22 public presentations led by MREA. The result was nearly 200 new solar installations across Johnson County in 2018.

"Solar group buy programs are successful in part because people learn about solar together with their neighbors, local business owners, and community leaders."

The MREA provides high value education to inform people about the technology and investment potential, and the partnership network allows local residents to consider the opportunity together.

In addition to the value of local engagement and education, the

programs provide measurable financial benefits to participants. Homes and businesses get access to lower prices for high quality solar arrays because we partner with local leaders and go to market for the best possible deal. Our competitive request for proposals (RFP) process involves coordination with an advisory committee, comprised of local stakeholders. We work with this committee to customize the RFP, develop a scoring rubric, publish the RFP, and select an installer. Competing installers typically offer lower prices through the program than their standard market rate. Prices also become more favorable as program participation increases.

Communities reach their climate goals faster as local homes and businesses invest their energy dollars on local solar energy. We frequently work with jurisdictions exploring their own investment in solar on public buildings, and who want to see more solar deployment in their area. By partnering with us, communities are able to enhance local solar education and deployment without significant public expense. Likewise, our partnerships with jurisdictions help the program reach as many residents as possible, aligning the energy goals of the local jurisdiction with their residents.

Emissions from millions of pounds of fossil fuels are avoided thanks to dozens of property owners producing their own clean electricity. According to

the EPA, the energy produced annually by the 13.9 MW of solar installed through our programs is equivalent to the greenhouse gas emissions of 25.4 million pounds carbon dioxide. In other words, our Grow Solar programs annually offset the CO2 comparable to burning 12.6 million pounds of coal or 1.3 million gallons of gasoline.

We understand that many jurisdictions' budgets are lean. We have also seen firsthand how local energy investments support local jobs and economic development. With a solar group buy program, we can work together to help your jurisdiction go solar.

growsolar.org



By: Peter Murphy
Solar Program Director,
Midwest Renewable Energy
Association (MREA)

Photo Courtesy: Jake Geissler



Innovation in Local Energy Democracy: The Athens Public Solar Fund

The Southeast Ohio Public Energy Council (SOPEC) grafted a local carbon-emissions fee onto its supply contract using Community Choice Aggregation law for the City of Athens, Ohio, and it's funding local solar projects.

The SOPEC is a regional council of governments that provides public energy services to communities in Southeast Ohio. As a non-profit, we use the state's aggregation law to collectively purchase energy, and increasingly, to invest in local clean energy. When we approached voters living in Athens, Ohio, with an advisory ballot question that would add a carbon-emissions fee to their bill to fund local solar installations, the result was unexpected and revolutionary.

In May 2018, 76% of Athens voters approved adding the carbon fee to the electric supply rate for all eligible residential and small commercial customers in the community choice aggregation program—a margin of approval higher than the ballot question that approved electric aggregation in 2014. The effort proved that not only were residents ready to pay for (part of) the cost of using carbon-laden electricity generated in Ohio and across the regional grid, but that they were ready to use that payment toward something productive in their local community.

As approved, the carbon fee ballot

measure instructed that all the funds collected from the fee could only be used for local solar projects on public facilities. The goal of the program as introduced was to help community members recognize the damage carbon emissions cause on our economy and the environment as a whole. More importantly, its goal stood strong in highlighting how solar for public buildings save taxpayer money long-term while providing a clear path for the City of Athens to reach its climate action and sustainability goals.

"With the carbon fee tied to the price of electricity per kilowatt-hour (kWh), the opportunity for aggregation customers to reduce their consumption is clear and present," says Steve Patterson, Mayor of Athens, "the fee nudges folks just enough to encourage energy-efficient habits and improvements, but at the end of the day electricity will be used, and everyone in the electric aggregation program can feel proud knowing they contributed to the solar that gets built, providing a benefit to all."

Fast forward to December 2020, and the Athens Public Solar Fund holds around \$55,000, growing by roughly \$8,000 each month, varying by seasonal electricity usage.

"We've identified over twenty-five municipally-owned locations that could host a new solar PV system, and we are eager to create the space for the

community to participate in deciding where these funds should go," says Luke Sulfridge, Executive Director of SOPEC. "We are also looking at avenues and structures where we can leverage these dollars to attract even more capital to maximize the value of these dollars toward building as much solar capacity as possible."

"At SOPEC, we see programs like the Athens Public Solar Fund as critical to our transition to an energy economy that works for local communities. We see a bright future in Southeast Ohio."

sopec-oh.gov



By: Mathew Roberts
Director of Marketing,
Southeast Ohio Energy Council
(SOPEC)

Helping **COMMUNITY SOLAR** Work for Municipalities (and Residents) in Illinois



Photo Courtesy: StraightUp Solar

Acquiring community solar subscribers is a challenge for renewable energy developers.

So, the Metropolitan Mayors Caucus identified the perfect community solar customers: municipalities. Municipalities do not move, they usually have good credit, and they have multiple small utility accounts that meet the requirements of Illinois' new community solar program.

The Caucus started the Community Solar Clearinghouse Solutions Program (CS² Program) to pool municipal subscribers and match them with community solar projects under development.

“The CS² program simplifies the subscription process for municipalities by identifying utility accounts that would realize savings, procuring the best rate from solar developers, and managing contracts and billing for communities to ensure cost savings.”

Through the CS² program, eight communities subscribed to the first community solar project in Illinois: Rainy Solar in Elgin. “The aggregated demand of these subscriptions is approximately 535 kW AC of the 900 kW AC available for that system, or 59% of the system,” said Mark Pruitt, the CS² program manager. The communities

will earn bill credits that will result in 10% electricity supply cost savings for the next 20 years.

“Many of these municipalities are among the 130+ that have adopted the Caucus’[s] Greenest Region Compact and pledged support for sustainability goals, including several clean energy goals,” said Edith Makra, the Caucus’s Director of Environmental Initiatives.

Among Caucus members, which include 275 municipalities in northern Illinois, two other villages have also signed on to different community solar projects. One of those communities is the Village of Thornton in the south suburbs of Chicago, which has a population of approximately 2,500.

“The Village [of Thornton] decided to get involved primarily because, as a Greenest Region Compact community, we have made a commitment to lessen our carbon footprint on the planet,” Thornton Mayor Bob Kolosh said. “As a small community, we really have no way to develop our own solar, so we see community solar as a way to support and benefit from clean solar energy.”

In September of 2019, the Interstate Renewable Energy Council (IREC) recognized the CS² Program’s innovative approach to help communities subscribe their public facilities to community solar with a prestigious 3iAward.

After winning the award, Makra and Pruitt didn’t rest, instead finding other ways to promote community solar. In partnership with eight North Shore Electricity Aggregation Consortium (NSEAC) communities, they launched a new program in September 2020 that allows municipalities to connect their residents to community solar subscriptions. This will scale up a successful pilot residential community solar aggregation model now underway with the Village of Oak Park. This program uses the existing municipal aggregation framework to offer 20% guaranteed electricity supply savings to residential customers.



By: Cheryl Scott
Sustainability Specialist,
Metropolitan Mayors Caucus

Photo Courtesy: Peter Lindstrom



SOLAR Possible: Jumpstarting Solar in Minnesota with Collaborative Procurement for Local Governments and Schools

I think it’s really important for schools to take initiative, to set an example for their students and others, and to take leadership on sustainability and clean energy,” shared Ana Martinez, a junior at Edina High School in the Twin Cities.

Ana summed up the critical elements about why schools—and other public entities like cities and counties—are rapidly installing solar across the Midwest and nation. Edina Public Schools installed nearly 500 kW of solar at three locations as part of an innovative collaborative procurement effort in Minnesota called “Solar Possible.”

Solar Possible was led by the Clean Energy Resource Teams (CERTs), Great Plains Institute, and State of Minnesota’s Office of Enterprise Sustainability. Launched in 2018, the project was a joint Request for Proposals for behind-the-meter solar installations on public facilities. Eight participants used a solar master contract developed for this initiative by the State of Minnesota with three pre-qualified vendors.

“The result: four public entities—Edina Public Schools, South St. Paul Public Schools, Hennepin County, and the State of Minnesota—installed a total of 2 MW of solar power over 11 individual sites.”

Leah Hiniker, Energy Manager with Hennepin County, emphasized the importance of learning together and working collectively: “It was much easier than an individual bid process. The support from the experts on staff was valuable. We’re one of the leaders in this work, but we’re still learning every day. That’s why it’s good to talk with others.”

Aaron Bushberger, Director of Finance with South St. Paul Public Schools, concurred: “The Solar Possible team had representatives visit with our School Board and answer any questions they had. This made the decision-making process straightforward and transparent. When the time came for the School Board to make a decision, they had all of the information they needed to decide to move forward with

the project. This is going to be a great asset and opportunity for our district for years to come!”

Solar Possible tools and resources—as well as lessons learned and best practices developed—can be used or modified by any school or jurisdiction to help make progress on their clean energy journey. cleanenergyresourceteams.org/solarpossible



By: Peter Lindstrom
Manager, Public Sector and
Community Engagement, CERTs

Local Ownership of the Clean Energy Future: **ENERGY DISTRICTS Do That**

My daughter will graduate from college next spring with a major in political science. She has helped my wife and I see our times through the eyes of a generation unambiguously committed to creating a just and inclusive society.

A clean energy future is inevitable, and the transition is well underway. The two most critical questions are: will it come fast enough to avert catastrophic climate change? And, who will own it? Will the clean energy transition further the concentration of wealth and power, or will it bring prosperity to all, from rural Midwestern counties to frontline urban communities?

“Energy Districts attempt to address both these questions, with a mission to lead, implement, and accelerate an inclusive, locally-owned clean energy transition. That ownership – of both process and outcomes – is critical to any effort to create a just, inclusive, and prosperous society.”

Currently organized as county-level nonprofits, Energy Districts strategies include boots-on-the-ground technical assistance, public engagement and market transformation efforts, and policy advocacy.

With ten Clean Energy Districts now established in Iowa and two in Wisconsin, the model is demonstrating success. The first-in-the-nation Winneshiek Energy District in northeast

Iowa is celebrating its 10-year anniversary, and documented impacts include:

- Energy efficiency and solar technical assistance with hundreds of farms and businesses, plus serving well over 1,000 high energy burden households with the direct installation of efficient lighting and water saving technologies, and combustion safety testing and improvements
- Solar technical assistance, public education, and market transformation resulting in over 350 locally-owned solar systems in our rural NE Iowa county

All of which adds up to over \$20 million invested in locally-owned clean energy, \$35 million in energy savings, and at least 250 jobs created or supported, and a community united around clean energy ownership, and engaged in advocacy that has contributed to protecting net metering in Iowa and important wins in utility rate cases.

The growth of the Energy District movement has demonstrated its viability. It’s time for foundations to step up to the plate and support the movement during this critical growth period, and until we achieve greater financial viability through policy partnership.

And it’s time for policymakers to step up and recognize that Iowans, Midwesterners, and Americans in general do local well. Local institution-

and capacity-building was central to much of the original New Deal’s innovation and durability, though unfortunately exclusion and injustice were widespread.

Clean Energy Districts can promote a socioeconomically and geographically inclusive clean energy transition in every county in America. Any national climate and energy plan – whether Green New Deal or otherwise – must include Energy Districts in their architecture and Geography of Change.

Are you interested in developing an Energy District in your region?
energydistrict.org



By: Andy Johnson
Director,
Winneshiek Energy District

On-Bill Financing for Home Energy Improvements: Michigan’s Innovative Clean Energy Program



Photo Courtesy: StraightUp Solar

For many homeowners looking to invest in clean energy, it can be a struggle to afford the needed energy improvements—especially for bigger-ticket items that can produce the greatest energy savings. Luckily for Traverse City residents, there is now a financing program available to help reduce the upfront costs of these upgrades: on-bill financing.

“This increasingly popular method of energy financing allows customers to repay energy efficiency and renewable energy improvements through their monthly utility bill, thereby offering longer terms, simplifying payments, and expanding credit to anyone with consistent utility bill payment history.”

Thanks to a partnership between Michigan Saves and Traverse City Light & Power (TCL&P), and help from the United States Department of Agriculture (USDA) Rural Energy Savings Program (RESP), TCL&P recently celebrated the launch of its own municipal on-bill financing program.

TCL&P was awarded a \$1.8 million loan by the USDA to support the utility’s program, making Traverse City Light & Power the first in the country to utilize USDA funds for an on-bill financing program. TCL&P’s program offers loans ranging from \$5,000 to \$30,000 with a fixed interest rate of 3% APR for up to 10 years that helps residential customers afford energy efficiency or renewable energy improvements in their homes.

The USDA funds will help fund the utility’s innovative, low cost program, which expands access to clean energy for residents in TCL&P’s service area.

“As a small municipal utility, we are very happy to offer this benefit to our residential customers. We believe that the investment residents make will save them money on their utility bills, enhance their homes’ value, and assist the utility in its energy efficiency efforts to reduce carbon emissions,” said Tim Arends, TCL&P Executive Director.

Michigan Saves helped implement Michigan’s very first municipal on-bill

financing program with the City of Holland in 2016 and TCL&P’s is now the second such program in the state.

“We’re proud to partner with Traverse City Light & Power to offer clean energy financing to their customers and applaud them for being the first rural electric utility in Michigan to use Rural Energy Savings Program funds for an on-bill program,” said Mary Templeton, Michigan Saves’s President and CEO. “After more than a decade of enabling clean energy financing, we’ve seen firsthand the positive impacts that energy upgrades have on the well-being of Michiganders and look forward to the benefits Traverse City residents will enjoy as a result of this program.”

Any Michigan utility interested in offering on-bill programs to their customers without the hassle of designing and running a program on their own can partner with Michigan Saves to get started.

michigansaves.org

CO-AUTHORED BY:



Mary Templeton
President and CEO,
Michigan Saves



Tim Arends
Executive Director, Traverse City
Light & Power

Solar in Johnson County Iowa: Local Jurisdictions Can TAKE ACTION to Support Clean Energy



Since 2008, Johnson County, Iowa, has endeavored to be a local government leader in sustainability. Our rural-urban county takes this role seriously as the state's second-fastest growing county, with major economic drivers of higher education, health care, agriculture, light manufacturing, and the arts.

"A turning point in our renewables journey was when our Board of Supervisors set five strategic goals for energy and operations in 2014: increasing energy efficiency, achieving energy conservation, making sustainable features integral to new construction, establishing an internal fund for sustainability projects, and studying the feasibility of renewables."

Solar efforts sped up when we had the opportunity to add solar to a new building replacing one destroyed by fire. Since then, we achieved four major successes in advancing solar energy in operations, the community, and in the state and region.

On-site solar

From 2015 to 2018, the County installed five solar arrays totaling 400 kW at our facilities through power purchase agreements and one outright purchase. One ground-mounted project included soil quality improvement, earning a 1000 Friends of Iowa award in 2016. Another 144 kW of solar will become operable in 2021 at a new behavioral health access center. To raise awareness, we made our arrays' portals publicly accessible at www.johnsoncountyiowa.gov/solar.

Simplified solar permitting

Johnson County was the first county in the Midwest to earn a SolSmart "Gold" community designation (2017). We simplified code, ordinance, and permitting so residents and businesses could more easily and quickly install solar arrays at their homes and businesses. The Johnson County 2018 Comprehensive Plan renewed and expanded commitments to solar.

Solar group buys

In 2018, the County was fortunate to be lead partner with MREA for one of their most successful solar group buys, Solarize Johnson County. With MREA's guidance, we engaged six cities as formal partners and a local installer. Nearly 700 county

residents learned about solar, and 180 households collectively added 1.12 MW of affordable solar to their homes, leveraging tax credits along the way. The program also helped us build connections with local cities. We reprised the program in 2020 with even more city partners (a total of nine) and another area solar installer. In 2020, just over 250 people attended Solar Power Hours, and preliminary results were 37 households signed contracts to add over 282 kW of solar.

Solar knowledge-sharing

Last, but certainly not least, we have shared our experiences with more than 30 different entities locally and in other states through one-on-one consults and with hundreds of people through conference presentations. We also have been a resource to non-profit organizations such as the Johnson Clean Energy District. Thank you for reading our story, and we hope it helps inspire your solar journey.

johnsoncountyiowa.gov

By: Becky Soglin
Sustainability Coordinator,
Johnson County Local
Government, Iowa, and MREA
Board Member

City of Madison's Green Power Program: Solar Job Training for Underrepresented Populations



Photo Courtesy: City of Madison

In 2016, the City of Madison Engineering Division implemented the Green Power solar job training pilot program, which aims to prepare participants from underrepresented populations, including People of Color, women, and other groups, for employment opportunities in the rapidly growing solar energy industry. The 6-9-month program was designed to provide classroom training in basic PV technology and safety, along with on-the-job training performing installations of PV systems at various City facilities. Matt Parks, Master Electrician for the City of Madison, leads the Green Power program's efforts.

"The Green Power program is currently in its fifth successful year of helping bring diversity to the trades and create job opportunities for historically marginalized groups."

The goals of the Green Power pilot program are to increase the City of Madison's generation of renewable energy, decrease its carbon footprint, provide job training opportunities, and prepare participants to take the NABCEP PV Associate Exam.

Since its inception, Madison's Engineering Division has hired and

trained fifteen people, 11 of whom are People of Color and five of whom are women.

As of October 2020, the City of Madison will have met its first goal of installing 1 MW of solar energy. These installations include roof mount, pole mount, and ground mount systems, most of which were completed by Green Power teams.

Now that the City of Madison has achieved its first solar goal, it's setting its sights on a new goal of achieving 100% renewable energy by 2030 and is looking to really ramp up the Green Power program in coming years. The plan to double down on Green Power includes installing another MW of solar in the next two years, and starting in 2023, installing nearly one additional MW each year going forward. These installations mean more opportunities to hire Green Power trainees by moving more crews per year.

Madison's Engineering Division is also extending the program beyond the solar installation season to include lighting conversions to LEDs and electric vehicle infrastructure at City facilities during the winter months. This expansion of skills will strengthen and broaden the program's trainees and create greater hiring opportunities.

The City of Madison sees the Green Power program as a replicable model

for organizations and municipalities that are looking to develop a skilled and diverse workforce in our region. With the growth of the solar industry, we see this as triple win in achieving our community's renewable energy goals. cityofmadison.com/sustainability

CO-AUTHORED BY:



Stacie Reece
Sustainability Program
Coordinator, City of Madison



Matt Parks
Master Electrician, Lead for
Green Power Training Program

Spurring County-Wide CLIMATE ACTION

Strategies and Successes from Dane County, Wisconsin

Dane County, Wisconsin has become a recognized leader on climate action. Your county can lead on emissions reduction too.

Dane County's top priority was internal operations. For more than a decade, Dane County improved the efficiency of its buildings and transitioned County operations to clean fuels. By 2019, the County had 16 solar energy installations on their facilities and was partnering with MGE on a 9 MW system at the Dane County Airport.

Today, more than half of our County snowplows run on RNG, which reduces vehicle emissions by two-thirds. We also incentivized continuous cover crops and expanded bike lanes. We walked the talk before addressing community-wide emissions. In 2017, County Executive Joe Parisi created the Office of Energy & Climate Change (OECC) and the Council on Climate Change and hired Keith Reopelle, a respected environmental advocate, to lead OECC.

"By the end of 2021, 100% of the electricity for County operations will be renewable. And it is not just about buildings—Dane County's landfill gas facility cleans and compresses landfill gas creating renewable natural gas (RNG) for county vehicles."

The County Executive charged the Council with creating a Climate Action Plan (CAP) for Dane County. Parisi's vision was to focus on 'the art of the possible'—on efforts the County could influence or control under existing statutes. Reopelle, working with the Council, identified six co-benefits that the CAP should deliver:

- Equity and Social Justice
- Economic Benefits
- Health Benefits
- Adaptation and Resiliency
- Bridging the Rural and Urban Divide
- Eco-System Benefits

Reopelle facilitated a bottom-up process where subject matter experts convened working groups to develop a baseline and recommendations for the Council's consideration. As recommendations were finalized, the experts helped Reopelle identify outcomes—cumulative impacts the recommendations could deliver (like 1,200 MW of solar in the County by 2030). Climate modelers used the outcomes to model County-wide emissions, projecting that we could cut emissions in half by 2030. That means our CAP is in line with IPCC recommendations.

I joined OECC in November 2019, helping to finalize the CAP but really focused on achieving CAP results. One of my first tasks was to create a webpage that tracks our progress on the CAP outcomes. I also spent time

talking with stakeholder groups—architects, builders, community leaders—about the CAP and their role in making change happen. These conversations helped us understand the barriers to reduced emissions; our aim is to eliminate those barriers so that it is easier for folks to do the right things.

We also want to give people credit for their efforts. We have a new Climate Champions program to identify and celebrate local leadership. When we hold up leaders, it inspires others to follow. Nothing is as powerful a motivator as positive reinforcement, so we use it a lot. After all, we've big goals to achieve!

daneclimateaction.org



By: Kathy Kuntz
Acting Director,
Dane County Office of Energy
and Climate Change



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Call to Action:

Midwest ADVOCATES

Today's energy economy is a product of historical inertia. Navigating its complex financial, legal, and political landscape is to climb through 120 years of scaffolding that has supported U.S. economic growth through the Great Depression, multiple nation-consuming wars, oil price shocks, energy scandals big and small, and now a technological revolution that is challenging the utility business model itself. At its foundation, it is a struggle with the "natural monopoly" that is the electric utility.

A century of experience in England informed how the U.S. first approached the new electricity monopolies. To give a private business complete ownership and control over a critical and fundamental part of the economy was to grant control of the many to the very few. The British experience with grain mills in the 1800's showed that this could bankrupt the nation's farmers and destabilize a nation's economy. Borrowing from their experience, we established state regulated utility monopolies. With low interest federal loans, we supported municipal and cooperative utilities to help provide electricity service to those for whom it was not profitable enough for private companies to serve (today 75% of the U.S. landscape is served by these publicly supported cooperative and municipal utilities). We developed laws, like PURPA, and regional wholesale markets to provide competition. States passed laws to reign in utility spending and bring clarity to utility plans for future power plants and transmission lines (Integrated Resource Plans).

More recently, some states began to incentivize energy efficiency to protect consumers against future rate increases that result from expensive investments in power plants and transmission lines; every person with an electric meter is on the hook to pay for these investments—plus interest—on our future energy bills. Some states "decoupled" utility profits from the amount of electricity they sold and instead tied profit to performance—like keeping the lights on. Some established Renewable Portfolio Standards (RPS) to require a certain percentage of energy generation to be from renewable energy. Some supported Net Energy Metering (NEM) to give solar electric system owners retail compensation for their electricity and approved Third Party Financing to expand consumer financing that reduces the upfront cost of ownership.

On and on we have scaffolded new rules, new incentives, new regulations, new programs, and new requirements onto the foundation of the "natural monopoly" that is the electric utility. A reasonable analysis today would suggest that maybe the monopoly isn't so natural anymore. With the technology at hand, maybe we could have a more open, more transparent, and more competitive market that offers everyone an opportunity to invest in the electricity system...

In short, if we were to redesign our electricity system starting from scratch, we would not design it the way it currently exists.

This is not a criticism of the many thousands of people that have built and continue to manage the marvel that is our nation's electricity system. More accurately, it means the patchwork of laws and rules, the aging technology, the debts owed, the stops and starts in market incentives, the market uncertainty, the outsized lobbying influence of utility investors trying to preserve the status quo, and the hyperbolic partisan politics that mask issues of importance—no society would wish this on itself. So how should we, as advocates for a clean energy transition, navigate the shaky scaffolding that is our energy economy? If we want to succeed, we will do it with clear vision, with an informed view of our history, with fairness, with reason, with persistence, with respect, and with tenacity. We'll do it in partnership. We'll build on our successes. We'll leverage the best of our past investments. And we'll all win as a result.

We share the following perspectives from some of the Midwest's brightest voices to help inform and inspire our efforts.

Rise Up, Midwest ADVOCATES!





Regional Apprenticeship Training Center: Building a Clean Energy Workforce with Equitable Access in North Minneapolis



Repowering the Midwest with **CLEAN ENERGY Jobs**

Clean energy is an important part of the Midwest economy. Prior to the COVID-19 crisis, clean energy companies employed more than 744,000 Midwesterners, and clean energy jobs were growing in nearly every state, according to the 2020 Clean Jobs Midwest report. At the end of 2019, more people in the Midwest worked in clean energy than the combined workforce of real estate agents and brokers, computer programmers, web developers, and waiters and waitresses.

Midwestern clean energy workers are installing solar and wind systems and retrofitting homes to make them more energy efficient. They are manufacturing energy efficient appliances and engineering new energy storage technologies. They are working to create and sell EV and hybrid electric vehicles.

These are good, blue collar jobs. Most Midwestern clean energy companies are small businesses. And 11 percent of clean energy workers were veterans in 2019—nearly twice the representation of veterans in the region’s overall workforce.

The Midwest’s largest clean energy employer was energy efficiency, which was home to more than 70% of all the region’s clean energy jobs. Last year, the Midwest saw job growth in clean fuels (2.9%), grid and storage (3.4%), renewable energy generation (2.7%), and energy efficiency (1.5%).

“As federal and state lawmakers once again look toward economic recovery, clean energy has a role to play.”

Clean energy jobs were growing more than twice as fast as overall employment in 2019, but the industry—like so much of the economy—has been hit hard by the COVID-19 crisis. As of August 2020, over 100,000 clean energy employees remain out of work since the COVID-19 pandemic and resulting economic recession.

We’ve seen how government investment in clean energy can help create jobs and restart the economy. After the financial crisis, federal stimulus funding in 2009 contributed to the creation of hundreds of thousands of new clean energy jobs nationwide. It provided loans to help

Check out the Midwest Solar Job Resource Center, a marketplace for job seekers pursuing a career in the solar energy industry.
• solarenergy.jobs

start about 500 new clean energy companies, weatherize thousands of homes and other buildings, and helped triple the amount of energy America gets from solar and wind. In addition to federal action, states and municipalities across the Midwest can do their part by adopting strong renewable portfolio and energy efficiency standards that enable businesses to keep their workers on the job and can help create thousands of new jobs as the recovery kicks into gear.

e2.org



By: Micaela Preskill
Midwest Advocate,
Environmental Entrepreneurs

The clean energy transition and the democratization of energy through solar power and other forms of distributed generation is taking the world by storm. For North Minneapolis, one of Minnesota’s most racially diverse communities, the clean energy and sustainability movements also represent opportunities to share the benefits of emerging technologies with low income and BIPOC communities.

“We can help to mitigate climate change in Minnesota and simultaneously address some of the nation’s worst racial and economic disparities.”

There has been a significant lack of awareness and access to renewable energy and energy efficiency training opportunities in North Minneapolis and other BIPOC communities. Prior to Renewable Energy Partner’s (REP) efforts with the Midwest Renewable Energy Association (MREA) and the Minneapolis Health Department, if someone wanted to take a solar class, it would take them two hours each way on public transit to get to the nearest solar training program. If you want to become an apprentice electrician with the International Brotherhood of Electrical Workers (IBEW) union, you have to get to an exurban location with no public transit service.

REP’s Regional Apprenticeship Training Center (RATC), in the heart of North Minneapolis on major transit lines, will give youth and adults from an underserved area access to skills training in the emerging clean energy sectors of the economy. Working with MREA and City staff members Markeeta Keyes and Patrick Hanlon, we are starting by training the necessary workforce for not only the City’s solar incentive programs, but also to meet the City’s 100% clean energy goal. Solar incentives for City-designated Green Zones, built by a trained local workforce, will also promote health and economic well-being in communities that are already overburdened by environmental pollution and face greater social, economic, and political vulnerability. This partnership is the first step of REP’s focus on building career awareness and creating pathways to well-paying jobs in solar and other energy and sustainable technology fields.

It has taken REP three years to secure funding for the purchase and renovation of the RATC, and to overcome widespread institutional resistance to greater training access for BIPOC and low-income communities. But now, rooftop solar integrated with battery storage, ground-source heat pumps, advanced building controls, electric vehicle charging stations, and comprehensive on-site stormwater management are all in-place or in-process at the training center. These systems will not only be teaching tools

for career skills, but will also make RATC one of the greenest buildings in the city. City-sponsored MREA training in solar energy began in August 2020 and continues onward alongside other training and STEM engagement activities for youth and young adults.

We need to build on these programs with more training partnerships that expand skills training and offer additional pathways to emerging careers. This new workforce training and the implementation of sustainable technologies will make Environmental Justice communities like North Minneapolis more resilient, sustainable, and equitable. Please contact us if you share our vision to simultaneously address climate change and social inequality.

renewableenergypartners.squarespace.com



By: James Staples
Founder,
Renewable Energy Partners



Imagine Systems Change: An Energy JUST Future

John Lennon said it best, “Imagine there’s no countries; it isn’t hard to do. Nothing to kill or die for... Imagine all the people, livin’ life in peace. You may say I’m a dreamer, but I’m not the only one. I hope someday you’ll join us, and the world will be as one...”

Now, don’t fret if you are a true patriot—I am an African American woman veteran of Desert Storm. I served in Dhahran Saudi Arabia, and was one of the few women permitted to drive the pavements through the Saudi Arabian Deserts. Admittedly, as the bombs were going off, John Lennon’s song was continuously in my head. But, when I think about no countries in the context of environmental climate justice, I think about everything we are doing to reduce greenhouse gas emissions and stop global warming, along with the systems changes necessary to get to the root causes of climate calamity, and they are very much the same causes of system inequality, including the impacts to those in the global south and beyond.

When I journeyed to Paris, France for the Conference of Parties 21, there were over 15,000 of us that marched in the streets of Paris calling for a rigorous and just agreement. We came from around the world, and I was able to learn of our varying plights. A sista from Palestine talked about how women have the highest mortality rate when it floods because they are not allowed to learn how to drive, nor are they taught to swim. A Sudanese brotha shared

the conflicts around water that literally sparked a war because the people of the north bring their camels to drink the same water that the Sudanese use to drink and cook.

“In America, we are enduring floods, wildfires, COVID-19, high unemployment, underemployment, and police brutality, each of which, like the deafening Siren of Greek mythology, beckons us to reimagine the systems that are the catalyst for these calamities.”

We need to look at just systems as a human and civil right. For example: energy. According to the American Association of Blacks in Energy, in 2009, African Americans paid \$41 billion to the energy sector, but only held 1% of the energy jobs. Black, Indigenous, and other People of Color (BIPOC) are on the frontlines of hosting energy fracking, fossil fuel pollution, and waste. BIPOC communities typically are on the frontlines of bearing the burdens of these polluting systems, all of which negatively impact their air, water, and land, and, subsequently, their health and mortality. These are the very same people who are most vulnerable to the impacts of climate, and the irony is they don’t even reap the benefits of these economics. In fact, housing stock value within a 30-mile radius of a coal power plant is reduced by 15%, according to a NAACP Just Energy, Reducing Pollution and Creating Jobs report. The NAACP holds three objectives: reduce harmful emissions, particularly

Photo Courtesy: City of Madison

greenhouse gases, advance energy efficiency and clean energy, and strengthen community resilience and livability. It is within this context that we support clean energy jobs for our transformation and liberation and, even amidst a pandemic, we imagine what it would be like to educate, train, and prepare as many people as possible for the new green economy. We imagine thriving wages, local jobs, just transitioning, and resiliency work—work that will transition the communities in which they live, work, thrive, and worship.

The U.S. unemployment rate hovers at about 8.6% now, multiplied by two for BIPOC equals 17.2%. I have no idea what the underemployed number is, but I can guess it is extremely high. Now, imagine we envision a more just, inclusive, and equitable future for all, and we POWERUP this vision with relationship building, training, and hands-on work experience. That is exactly what we are doing in partnership with MREA in Indiana. Through an NAACP portal embedded within MREA online training, we are making training, worksite experience, and credentialing accessible to motivated young minds that seek opportunity in the clean energy transition. We are working in Evansville and have a vision to expand our work in the Midwest. **Do you share this vision with me?** Then join me in working for a more sustainable, just, and equitable future for us all.

naacp.org/environmental-climate-justice-about



By: Denise Abdul-Rahman
NAACP, Regional Field Organizer, Midwest and Plains States, for the Environmental Climate Justice Program, and MREA Board Member

Solar at Red Lake: Finding a Place in the Circle

The Red Lake Indian Reservation has always been a very special place to me. As a kid growing up, we would drive out of the Twin Cities every summer and attend the Pow Wows, spending time with friends and family. There’s a very special feeling that I get knowing that this is where my people have lived for hundreds of years; this is who you are, and this is where you come from. Growing up I often heard that the greatest honor for an Ogichidaag, English meaning warrior, is to be of service to the community. I think we’re all on this journey trying to figure out our place in the circle, experimenting as we go along to see where we fit in. Being a part of the Red Lake solar project has brought me to a place where I feel like I now belong, and this is my purpose in life. I can’t think of anything else I’d rather do for the rest of my life than to work on renewable energy projects and help my people.

In 2017, a chance to be a part of something huge was presented to me. I have heard that either you define the moment, or the moment defines you. I knew in my heart of hearts that this was my time to step forward and to take that leap of faith and put my all into this opportunity. I met Ralph Jacobson, the Godfather of Solar, in the State of Minnesota, and we came to an agreement to work together on building the Red Lake solar project.



Photo Courtesy: Native Sun Community Power Development

Our Chairman, Darrell Seki, and other tribal personnel wanted to pursue renewable energy not only because it’s good for our environment, but also because they noticed high amounts of mercury in our walleye population, due to pollution from fossil fuel combustion coming down into our lake. The Red Lake fishery is our oldest business and is very important to the tribe, so transitioning off of fossil fuels for our energy needs and into renewables seemed like a logical next step.

Fast forward three years later to 2020 and this project has now taken on a life of its own. The opportunities are endless when we think about tribal energy sovereignty: education, workforce development, and even developing our very own tribal utility is now being considered. When I think about the energy industry being a trillion-dollar industry, compared to gaming being a billion-dollar industry, it only makes sense for tribal nations to start moving in this direction of creating their very own utility. Tribes can use this as an opportunity to start getting their heads wrapped around running renewable energy micro-grids. I firmly believe that tribal nations can lead in this area, helping to make energy more democratized.

“With the United States leaving the Paris Climate Agreement, what would it look like to have all 473 tribal nations signing onto it instead? What would that say to the world? Tribes can’t take back this land physically, but we can take back this land morally and the time is now.”

Acting locally but think globally is something I’ve always heard, and I feel like I finally understand that saying. **Solar on people!**
nativesun.org



By: Robert Blake
Executive Director,
Native Sun Community
Power Development

Illinois Solar for ALL: Building Clean and Equitable Communities through Job Training



The Illinois Solar for All (ILSFA) program launched in May 2019 as a statewide and state-funded effort to create a more equitable solar marketplace and expand access to the clean energy economy.

By incentivizing participating solar vendors (called “Approved Vendors”) with Renewable Energy Credit payments above market price, the ILSFA program provides income-eligible residents, as well as non-profits and public facilities that provide essential services to low-income and environmental justice communities, access to on-site solar and community solar projects, while guaranteeing they see measurable savings on their electric costs. In doing so, the program, which was a key outcome of the state’s Future Energy Jobs Act (FEJA) of 2016, removes barriers to clean energy access and ensures investment in disadvantaged communities.

“But building strong and equitable communities requires going beyond placing residents of low-income and environmental justice communities on the receiving end of solar. Enduring growth and wealth-building requires ownership and involvement across the solar landscape.”

That’s why ILSFA includes job training requirements that support the work of 12 FEJA-funded workforce development programs across the state. These programs fall under three main

categories—a solar training pipeline, a craft apprenticeship program, and a multicultural jobs program—and they offer training and skill-building opportunities designed to prepare trainees for careers in the solar, electrical, and construction industries.

ILSFA prescribes that its participating Approved Vendors hire job trainees to work on a certain amount of their solar projects. Trainees must come from eligible job training programs, which include the 12 FEJA-funded programs, along with outside job training programs that complete a competitive application process. In this way, ILSFA helps create jobs for members of historically marginalized communities. Foster care alumni, people with records, and those who reside in environmental justice and low-income communities are especially encouraged to participate in job training programs.

In addition to administering ILSFA, Elevate Energy collaborates with partners to run one of the FEJA job training programs, called the Clean Energy Jobs Accelerator (the Accelerator), as a separate initiative. The Accelerator comprises two programs: The Solar Jobs Training Program for emerging solar professionals learning foundational skills, and the Contractor Accelerator for small minority-, women-, disadvantaged-, and/or veteran-owned construction firms to deepen their networks and knowledge base. Both programs prioritize participants from environmental justice and

disadvantaged communities, as well as returning citizens and foster care alumni.

Elevate’s Accelerator programs, along with the other ILSFA-approved job training programs, provide a form of ongoing, regenerative economic support for members of disadvantaged communities which can be sustained over time. Trainees develop the skills and experience that can lead to leadership positions and business ownership within the clean energy industry, allowing community members to benefit from all sides of the solar marketplace.

ILSFA’s job training requirements present a model for state programming that should be replicated and built upon. By ensuring members of disadvantaged communities have multiple entry points into the clean energy economy, ILSFA will help build clean and equitable communities across the state. illinoisfa.com

CO-AUTHORED BY:



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Environmental and Climate Justice: Healing through Interfaith Initiatives

Wisconsin Green Muslims is a state-wide grassroots environmental justice group formed in 2005, connecting faith, environmental justice, sustainability, and healing through education and service. We address environmental justice issues related to climate change, clean air and pure water, healthy food, solar energy, energy efficiency, waste reduction, and transportation equity.

Through over 100 one-on-one and small group conversations, listening sessions, and presentations, Wisconsin Green Muslims has reached more than 5,000 people of different backgrounds and a wide variety of constituents throughout Wisconsin. These conversations culminated in the generation of Just Solar guiding principles from the people, by the people, for the people, rooted in our collective values of justice, equity, democracy, and inclusion. Two pathways came up from these listening sessions and conversations: (1) Energy Efficiency to Solar and (2) Solar Trainings to Family Supporting Jobs. We are collectively moving toward equitable 100% efficient and renewable energy in Wisconsin and centering women and communities of color.

Many of us have wounds that stem from the labors of our environmental and climate justice work that are in desperate need of healing. How do we heal? How can we heal? What does healing look like? How can we

be healers for our wounds and the wounds of others in the climate justice movement? How as “wounded healers” can we learn from the other healers of the world and be ourselves effective healers of the world?

At the time of darkness, with environmental and climate injustices disproportionately impacting the most vulnerable, it is important for current and future generations at home and around the world to do everything we can. It is urgent for us to work for light, love, unity, and climate justice healing.

“People of faith, Muslims included, have a great responsibility to stand up for environmental justice and address the concerns and calamities of the poor and marginalized communities.”

These groups have the lowest ecological footprints, yet they are the most impacted by environmental and climate disasters. It is a moral issue, and the interfaith voice standing united for environmental justice is instrumental in mobilizing the faithful for the common good.

Currently, Wisconsin Green Muslims has two interfaith healing initiatives: “Wisconsin Faith and Solar” and “Faithful Rainwater Harvesting,” or “FaRaH,” which means joy. These initiatives connect communities with

the unifying powers of sunlight and rainwater, as sacred trusts and gifts, while also providing valuable peer-learning, education, assessments, and collaborative benefits to advance equitable solar and flooding solutions. We aim to increase our understanding, appreciation, and care of our common home.

It is time to light the way. The intensity of light is stronger in darkness, providing greater opportunity for light to lead the way. Let’s continue to work together countering darkness, spreading light and healing justice.

wisconsingreenmuslims.org



By: Huda Alkaff
Founder and Director,
Wisconsin Green Muslims



The Conservative Case for Wisconsin Clean Energy

Over the past few decades, conservatives have lost any input into the discussion over clean energy, allowing more extreme views to co-opt the conversation and steer national clean energy policy. This failure by conservatives to engage in a robust policy discussion on an issue that most right of center voters support is precisely how we end up with frustrating partisan differences and a lack of policy direction.

Upon reflection, it is easy to see why renewable energy can become a winning issue on the right. The costs of solar and wind have dropped 90% and 60%, respectively, in the last decade alone, putting these technologies on competitive footing with traditional fossil fuels. This change in the marketplace gives conservatives an opportunity to argue in support of clean and affordable energy. Smart investments in advancing clean energy, in a way that enables free-market forces to keep electricity costs down for consumers while spurring innovation, have the opportunity to raise our standard of living and make the way we generate and utilize energy cleaner.

Crucially, innovation is increasingly solving the tension between affordability and renewable resources. However, it's important that groups

like Wisconsin Conservative Energy Forum (WICEF) work to meet conservatives where they are on this issue, while also educating them about changes in energy markets. Shifting the conversation on renewables from one driven by climate change toward an emphasis on innovation and cost competitive expansion of new technologies is critical to winning conservative support.

Of course, it is in lawmakers' best political interests to prioritize clean energy, as public sentiment is increasingly in favor of advancing clean energy solutions. According to recent Pew Research Center surveys, nearly 80 percent of voters would vote for a candidate who supports clean energy development. And more than 9 in 10 Millennials agree that we should be exploring all-of-the-above energy policies, including clean and renewable energy development. **The fact is, clean energy is broadly popular with center right and independent voters.**

However, in order to lead, conservatives cannot let ourselves be defined as the "party of no." Rather than simply opposing ideas like the Green New Deal, we need to put forth our own practical solutions to advance clean energy in a way that preserves reliability and affordability

while strengthening our economy and creating much-needed jobs.

"Wisconsin has the potential to be a national leader in clean energy production. It's time for our lawmakers to step up and turn that potential into reality—and conservatives should be the ones to do it."

wiscef.org



By: Scott Coenen
Executive Director,
Wisconsin Conservative
Energy Forum



Beyond COAL: Wisconsin Must Embrace Clean Energy

Photo Courtesy: StraightUp Solar

Right now, our planet is at a tipping point. Eliminating our dependence on fossil fuels and reversing climate change will be an enormous challenge, but it is possible. If we choose not to act, Wisconsin faces major disruptions to everything from agriculture to water resources to public health. But through action, we can clean our environment, grow our economy, and provide a lasting future for generations to come.

Currently, Sierra Club's Beyond Coal Campaign is focused on retiring all Wisconsin coal plants, starting with the Columbia coal plant, which desperately needs to close, as well as another fracked gas plant that we need to stop from being built, the Nemadji Trail Energy Center near Superior.

Wisconsin burns a lot of coal: 22 million tons of it a year, in fact. With five coal plants still operating around the state with no plans for retirement, coal produces nearly half of Wisconsin's electricity. But electricity isn't the only thing coal produces; it also generates massive quantities of hazardous pollutants that harm our health and environment. Burning coal spews out carcinogenic particulates into the air and toxic heavy metals into the water, leading to a host of potentially fatal illnesses like lung cancer, heart disease,

brain damage, and birth defects. Simultaneously, it degrades ecosystems by destroying habitats, damaging plant life, killing aquatic species, and contributing to climate change. Plus, it's more expensive than most other sources of energy, meaning it poses a drain on our state's economy and increases the financial burden on our state's residents.

"Essentially, our dependence on coal is disastrous; it harms our health, our environment, and our economy."

We must embrace clean and renewable energy sources like wind and solar power. These energy sources are not only sustainable and environmentally-friendly, contributing no pollution while in operation, but they are increasingly becoming cheaper than other dirtier alternatives. Plus, they create jobs and can fuel economic growth all while mitigating climate change and protecting the environment.

With shifting economic realities, the move Beyond Coal is becoming less a matter of "if" and very much about "when" and "how." As we work for a greener vision for our energy sector it's vital that those necessary conversations

be driven by those who have been most harmed by the dire impacts of fossil fuel pollution, and those who will be impacted as the economy continues to shift away from large scale centralized fossil fuel generation. We have before us an opportunity to use this transition to lift up those that might otherwise be left behind, and to bring into our economy those who have historically been excluded. The time is now to move beyond dirty fossil fuels and ensure a brighter future for all our communities.

sierraclub.org/wisconsin



By: Elizabeth Ward
Chapter Director,
Sierra Club—Wisconsin

DECARBONIZE the Economy through Electrification

Hastened by the pandemic and its ensuing economic crisis, Minnesota has arrived at a critical inflection point. The disproportionate impact of COVID-19 on BIPOC and under-resourced communities has illuminated the vulnerability of those that have long suffered from high exposure to indoor and outdoor air pollution. The constriction of our economy has also underscored the importance of investing in durable markets of the future. And all the while, the climate crisis looms in the background, buoying the health and economic threats exacerbated by the pandemic.

“As we roll up our sleeves and prepare to ‘get back to normal’ we must challenge ourselves to conceive of a new and better normal: one that is equitable, one that secures the jobs of the future, and one that will achieve carbon neutrality by 2050.”

At Fresh Energy, we believe that decarbonizing our economy through electrification is the new normal to fight for.

Electrification is the conversion of end-uses powered by fossil fuels to electricity. Advances in technology have moved us into a new world of super-efficient heat pumps, electromagnetic induction, and high-capacity batteries.

Electrifying cars, buses, and trucks, as well as homes and buildings, will significantly reduce criteria air pollutants known to cause serious respiratory and pulmonary illnesses. Beyond reducing the financial burden of health care, electrification will also deliver fuel savings and, when done right, lower electricity prices. As transportation is now the most carbon intensive sector of the economy and the fastest rate of growth in emissions is from the building sector, electrification will also mitigate climate change. As Minnesota continues to green up its power generation, the carbon benefits of electrification will only increase.

Advancing electrification requires market transformation, equitable policies that prioritize under-resourced communities, and investments to modernize our electric grid – all things Fresh Energy is fighting for. In Minnesota, we are already making great strides. Across the transportation sector, Governor Walz has set Minnesota on a course to become the first Clean Cars state in the Midwest, private and public sector organizations are making commitments to transform the transportation sector, and utilities are advancing electric vehicle programs at the Public Utilities Commission.

Companies like New Flyer in St. Cloud are also bringing clean energy jobs to the state. Across the building sector, innovative passive and geothermal

projects are being built, the state is undertaking consideration of fuel switching and cost effectiveness reforms for the Conservation Improvement Program, and active exploration of advancing carbon free multifamily affordable housing is underway.

Fresh Energy, along with many partners in Minnesota, is driving ambitious policy to move our state off fossil fuels and toward a future powered by clean renewable energy.

Together, we can seize this moment to create a clean energy economy that benefits all! fresh-energy.org



By: Margaret Cherne-Hendrick
PhD, Director, Beneficial Electrification, Fresh Energy

Compensation for Distributed Energy Resources: Looking Toward the FUTURE

Five years ago, the so-called utility “death spiral” was the hot topic in utility regulatory circles. Utilities proposed increased fixed charges and monthly solar fees to slow down distributed solar deployment while solar advocates dug in their heels to defend retail net metering. States like Wisconsin and Arizona became ground zero for bare-knuckled regulatory fights that led largely to a stalemate on net metering, rate design, and solar compensation.

“Today, thankfully, there is growing recognition on all sides that distributed energy resources (DERs)—including rooftop solar, battery storage, energy efficiency, demand response, and electric vehicles—can provide great value to the distribution grid and society, especially when strategically deployed and used in combination.”

What does this mean for net metering and other proven retail solar compensation programs? It might suggest opportunities for evolution towards more sophisticated programs that capture DER value. But designing new policies for DER compensation will require states to carefully balance the need to (1) encourage deployment in

ways that leverage the range of benefits that DERs can provide to the grid and society, while (2) preserving a stable and financeable policy environment to support rapid market growth.

“Baby steps” are likely better than “giant leaps,” especially in Midwest states with low levels of distributed generation (DG) penetration.

The Environmental Law & Policy Center is engaged with colleagues and allies in several Midwest proceedings that will help shape the future direction of DER compensation:

In Illinois, the ICC is investigating proposals to transition from retail net metering to successor “value-based” tariffs for DERs that recognize the distinct locational and temporal values of DERs on the utility distribution grid. (ICC Docket 20-0389)

In Indiana, advocates are pushing back against a southern Indiana utility’s proposal to replace retail net metering with an “inflow-outflow” tariff that undervalues customer generation. (IURC Cause No. 45378)

In Iowa, advocates and utilities were able to come together to deliver a negotiated path from retail net metering to a future “value-of-solar” tariff that will be implemented by

the Iowa Utilities Board when DG penetration reaches 5% of utility peak load. (Iowa S.F. 583)

In Michigan, advocates have asked the Michigan Public Service Commission to establish a “DG tariff” for Consumers Energy that is based on a full and fair calculation of DER value to the grid and society. (MPSC Dockets U-20561; U-20697)

In Minnesota, the Commission is considering opportunities to refine its pathbreaking value-of-solar methodology to incorporate locational-value elements for future implementation and revisiting its DG Tariff (MPUC Dockets E002/M-13-867, E999/CI-16-251).

And finally, **in Wisconsin**, the PSCW has opened an investigation of utility DG compensation policies. (PSCW Docket 5-El-157) This comes on the heels of a lawsuit challenging WE Energies’ DG buyback rates that discriminate against customer generation.

These dockets, and others like them, will determine whether Midwest customers enjoy full, fair, and robust compensation for DERs to maximize deployment and value to the utility, its customers, and society. elpc.org



By: Brad Klein
Senior Attorney, Environmental Law & Policy Center (ELPC)

Midwest States are TAKING ACTION:

Supporting a Cost-Effective Transition to Renewables



Photo Courtesy: StraightUp Solar

Distributed energy and grid technologies have evolved rapidly in recent years. Costs for solar panels and energy storage continue to drop, facilitating deployment. At the same time, smart inverters and related technologies open the door to new grid-supportive functionality for distributed energy resources (DERs). Interconnection processes that facilitate the use of these advancements hasten the transition to cleaner, cheaper renewable energy.

grid. Storage can therefore dramatically lower the need for interconnection upgrades, which are often scaled to project export levels. But that can only happen with clear guidelines in interconnection rules about the technology and system configurations projects may use to control export.

Facilitating Grid Supportive Functionality—Interoperability

Smart inverters and related technology can modulate DER impacts and services, facilitating higher penetration and allowing DERs to provide new benefits to the grid. In 2018, the Institute of Electrical and Electronics Engineers (IEEE) published a major revision to its standard for DER interconnection to facilitate interoperability. Unlike previous versions of this standard, IEEE 1547-2018 does not offer a one-size-fits-all approach, but rather presents a roadmap of decisions state Commissions must make to adopt the standard. In particular, decisions are needed around whether to implement inverter settings that result in power curtailment and how to compensate DERs for the grid services they provide. Furthermore, including a wide range of stakeholders, including utilities, industry, and advocates, in the adoption process will be critical to success.

Enabling Storage-Connected Solar—Export Controls

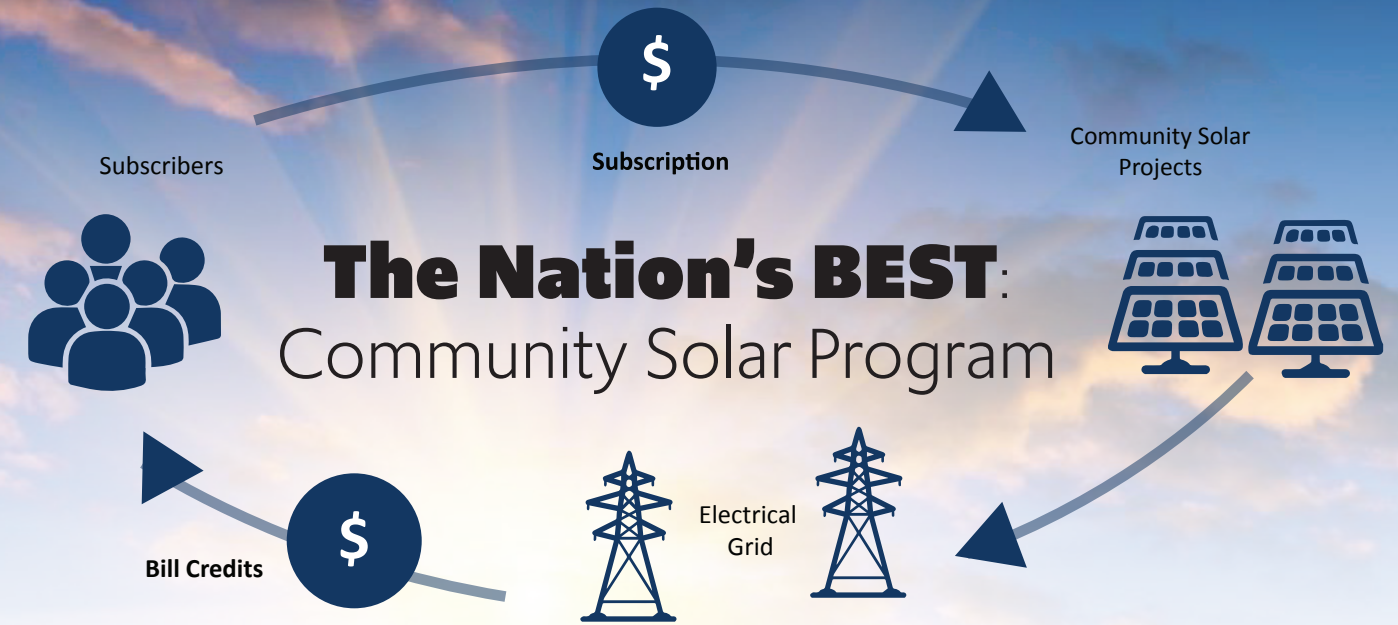
As battery costs decline, interconnecting storage-coupled solar based on the operating characteristics of the project as a whole, not the solar by itself, is critical. Combining storage with solar allows solar to charge batteries in addition to exporting to the

While the adoption of IEEE 1547 and the inclusion of export controls in rules are the two updates needed to integrate new technology, updates that create the grid transparency needed to interconnect high volumes of DERs are also important. Measures that would increase transparency include the addition of pre-application reports in states without them and the development of hosting capacity analyses and public interconnection queues.

Across the Midwest, Commissions have already begun this work. Minnesota recently completed an update to interconnection rules, the adoption of the IEEE 1547, and the development of a hosting capacity analysis. Both Illinois and Michigan are working to update their interconnection rules and the Michigan Commission recently ordered its two major utilities to carry out a hosting capacity analysis—ELPC is playing an active role in both these processes. And Wisconsin will begin an update to its interconnection rules soon. These and other Midwestern states' interconnection processes must be fully modernized to take advantage of advanced technologies and support our transition to a cost-effective, renewable future. elpc.org



By: Melena Hessel
Senior Policy Advocate,
Environmental Law & Policy
Center (ELPC)



The clean energy transition will lean heavily on solar energy. To ensure that the transition is equitable, solar must be available to everyone—not just sunny rooftop owners. Community solar, a policy letting subscribers share the output of a solar array, is the inclusive solution.

“Community solar is cost competitive, increases grid resilience, and saves on transmission losses. Leaders can use community solar to advance local goals, including workforce development.”

Nineteen states and the District of Columbia have passed community solar policy, but Minnesota’s program dwarfs all the others. The Minnesota community solar program, launched in December 2014, forces the state’s largest utility (Xcel Energy) to connect community solar gardens to the grid and buy their electricity through a Value of Solar Tariff. Value of Solar adds the often overlooked values of solar electricity, including avoided losses and avoided environmental costs, to the electricity’s value. The tariff also secures a 25-year fixed rate for community solar developers, whereas net metering rates can be unpredictable.

Thanks to Value of Solar, subscribers save money and community solar is profitable for investors. In fact, the Minnesota community solar program has saved all Xcel customers—not just community solar subscribers—millions of dollars.

Minnesota saw its first interconnected community solar garden in January 2017. Since, the program has grown to a mighty 724 MW (in August 2020) and has created thousands of jobs. The program has flourished because there is no size cap. If the growth of the last two years continues, the program will reach 1 GW by 2022. The Colorado, New York, and Massachusetts community solar programs all opened before Minnesota’s, but even with a head start, these programs have been handily outpaced.

Other Midwestern states can emulate and improve upon the nation-leading Minnesota community solar program. For instance, Minnesota’s program does not address low-income or marginalized community access. Doing so would shift savings to those facing a disproportionate energy burden; low-income households spend three times more on energy, as a percentage of their income, than other households. The Illinois community solar program, which has been slow to take off, requires 25% of approved solar gardens to serve environmental justice

communities. In Massachusetts, a unique compensation scheme incentivizes low-income subscriber inclusion. These components should be part of every community solar program. To complete the clean energy transition in a democratic, inclusive way, solar must scale out rather than up; we must establish community solar programs in more states. Advocates can take Minnesota’s success to their legislators and public regulators.

Though we are proud that Minnesota’s program is best, inspiring better programs in other states would be a higher honor. ilsr.org



By: Maria McCoy
Research Associate,
Institute for Local Self-Reliance
(ILSR)

ON-BILL Financing Programs: Increasing Solar Adoption and Energy Equity

Our economic dependence on fossil fuels is responsible for runaway carbon emissions, leading to wildfires, increased hurricane intensity and frequency, and flooding. Communities of color and low-income households, often located next to polluting factories and bisected by major highways, are disproportionately impacted by these climate change-induced disasters. A new economy needs to be based on clean energy, centered around the needs of people; creating jobs and helping families build wealth.

On-site solar energy has the potential to lower energy bills for low to moderate income families with high energy burdens. Yet, that has rarely been the case. While the cost of solar energy has dropped by more than 50 percent in the last decade, accessing clean energy is unequal due to upfront costs and strict financial requirements. Wealthy households, who can afford the advanced payments, have primarily driven solar adoption. However, installations are also divided on racial lines. While holding for income, on average, predominantly Black neighborhoods have installed 69% fewer solar panels. Meanwhile, white-majority neighborhoods have installed 21% more solar.

Through on-bill financing programs, families and businesses repay the cost of solar installations on their monthly utility bills over time, with no money down, using a portion of their energy savings. These programs expand access by not requiring credit checks, and instead ask for on-time utility bill payment history. Tying the repayment to the utility meter, not the person, allows for the charge to transfer to the next unit occupant.

The Hawaii Green Energy Money Saver (GEM\$) on-bill program unlocks financing for solar projects for low-and-medium-income residential (homeowners and renters) and commercial (non-profits, multi-family projects, and small business) properties. The Hawaii Green Infrastructure Authority designed the GEM\$ program with EESI's help and capitalizes it through the issuance of a Green Energy Market Securitization bond. To increase energy affordability, solar projects have to demonstrate a minimum estimated 10% net utility bill savings (including repayment charge). By offering financing not reliant on credit scores, GEM\$ democratizes clean energy by making it more accessible for families that face financial hurdles. Since April 2019, GEM\$ has financed more than \$7.5 million in solar panels,

helping low-and-medium-income, including Black and Native Hawaiian families, cut their energy bills, decrease reliance on fossil energy, and promote a healthier environment.

While on-bill programs are offered by utilities in 25 states, including around the Midwest in Michigan and Minnesota, the GEM\$ program is unique in unlocking solar potential. But other utilities could follow the GEM\$ example and offer on-bill financing programs to encourage solar adoption. Families across the Midwest—regardless of income, credit, or rental status—and their communities would benefit from reduced energy burdens, lower emissions, local investment, and good paying solar jobs. eesi.org



By: Miguel Yañez-Barnuevo
Project Associate,
Environmental and Energy
Study Institute (EESI)

“Innovative on-bill financing programs help promote equity and access by increasing adoption and ownership of solar energy, including in communities of color.”

Michigan Saves: The Nation's FIRST Non-Profit Green Bank



Michigan Saves is the nation's first non-profit green bank, committed to making capital for clean energy projects accessible to everyone. With programs covering both residential and commercial properties, the green bank facilitates projects that have a proven return on investment, strengthen small businesses, reinvest in Michigan's economy, support energy independence, and help reduce the state's carbon footprint.

For over a decade, we have leveraged public dollars from the Michigan Public Service Commission and the U.S. Department of Energy to finance nearly \$270 million in private capital for clean energy improvements.

“For every public dollar invested in Michigan Saves’ loan loss reserve fund, at least \$30 private dollars can be leveraged.”

In September, the green bank was awarded a \$1 million grant in the State of Michigan's fiscal year 2021 budget. These funds will go to our loan loss reserve and help continue to serve Michiganders with easy, affordable, and accessible financing that accelerates clean energy work. By leveraging the money as a credit enhancement to attract private capital, we enable lenders to offer better rates, provide longer terms, and increase access for those who would not otherwise qualify for traditional lending.

There has been a growing national spotlight on Michigan Saves in the last year, too. In December 2019, Michigan Saves received national recognition as a leader in clean energy as Michigan Congresswoman Debbie Dingell helped lead the effort to create a national climate bank that built upon Michigan's successful green bank model.

Michigan Saves is continually adding more features and programs, as well as growing its contractor base, so that even more Michiganders can benefit from safer, more comfortable spaces and smaller utility bills.

Some of our latest programs and features include:

- Launching a revolving loan and rebate program for customers with low to moderate income, in partnership with DTE, an investor owned utility. The program's combination of a small loan and grant enables eligible residents in DTE's gas and electric service territory to make energy efficiency improvements that will be repaid from their residual utility savings, with no cash outlay.
- Piloting and launching the National Green Energy Network—a system that helps clean energy financing entities reduce costs and create efficiencies in program automation and design.

- Partnering with the City of Ann Arbor to implement a pilot program to help seniors with low incomes age in place with more-efficient homes.

When it comes to greater energy independence and carbon reduction; major environmental and economic benefits; smaller bills; and improved health, safety, and comfort, no one should be excluded.

We exist to power a prosperous and clean energy future for all. To learn more about Michigan Saves, visit michigansaves.org.



By: Mary Templeton
President and CEO,
Michigan Saves

Focus On Energy: A Uniquely Wisconsin SUCCESS STORY

Now entering its 20th year of operation, Wisconsin's Focus on Energy program is widely recognized as a model public benefits program delivering energy savings to utility customers. This statewide program, funded entirely through utility bills, provides incentives and other services to help households, businesses, and non-profits invest in energy efficiency measures and supply themselves with clean energy.

Take Capital Brewery as an example. With financial support from Focus on Energy in 2014, the Middleton brewery and beer garden installed a high efficiency heat recovery system with controls and a 13 kW solar electric system on its roof. Thanks to these investments, Capital Brewery saves more than \$4,500 each year on its heating and electricity bills.

Capital Brewing's Wisconsin peers are also capturing the energy value of sunshine. Breweries such as Central Waters, Ale Asylum, New Glarus, Bare Bones, and Lakefront have parlayed incentives from Focus on Energy into investments in on-site solar power. In so doing, they demonstrate that incorporating sustainability and carbon reduction into their operations is good business and can often be a competitive advantage.

According to its website, Focus on Energy has enabled millions of ratepayers to save \$730 million in avoided energy costs since the program's inception. Moreover, it has been a consistently powerful economic engine for the state of Wisconsin, yielding between \$4 and \$5 in economic and avoided pollution benefits for every \$1 spent by the program.

But to fully appreciate Focus on Energy's reach and impact, it's worth

reading through the dozens of energy efficiency and clean energy success stories made possible by program incentives: [focusonenergy.com/success-stories](https://www.focusonenergy.com/success-stories). As these testimonials and case studies make clear, Focus on Energy offerings have something of value for every electric customer in Wisconsin, no matter how large or small they may be.

On the renewable energy side, virtually every solar PV system powering Wisconsin residences and small businesses today received a rebate from this unique, ratepayer-funded program. Nowadays, with solar installation prices down to about a quarter of where they were 10 years ago, Focus on Energy can award rebates to many more customers than in the past. Notwithstanding the ongoing pandemic, 2020 is shaping up to be a record-breaking year in the residential solar market, fueled by \$2.3 million in incentives from Focus on Energy.

The popularity of its solar incentives is putting a strain on Focus on Energy's budget going into 2021. Under its current four-year plan, the program reserves \$5.5 million each year for all qualifying renewable energy investments, out of an annual overall budget of about \$95 million. Increasing its overall budget would require approval from state legislators. Absent such action, Focus on Energy has little choice but to pare residential rebate levels down to \$500 per installation going forward.

Electric providers throughout Wisconsin contribute 1.2% of their gross revenues into Focus on Energy. Though they are not required to participate, all of the municipal utilities and nearly half of the electric cooperatives in Wisconsin also fund the program, to the tune of \$8/year per meter.

As the overseer of Focus on Energy, the PSCW is very mindful of the demands placed on the program, and its crucial contribution to reducing fossil energy consumption and greenhouse gas emissions. To that end, PSC Chair Rebecca Valcq has asked Governor Evers to put an additional \$100 million into the program, starting in July 2021. According to the PSC, the increase would cost residential households less than a \$1/month.

"These programs reduce emissions," Valcq said. "They reduce the need to go out and look at building generation and transmission projects. These programs create jobs."

Signed into law by Governor Tommy Thompson back in 1999, Focus on Energy has enjoyed strong bipartisan support throughout its history. Considering how broadly its benefits have been spread throughout the state, increasing the program's budget should be something both Republicans and Democrats can agree on. renewwisconsin.org



By: Michael Vickerman
Policy Director,
RENEW Wisconsin

Net Metering that Works for EVERYONE

In the summer of 2019, the Iowa Environmental Council and many partners had just fended off a bill proposing significant new fees for customer-owned solar. We needed a different approach and a solution that would work for everyone, including electric utilities. We worked with our partners to identify what alternative might be viable.

After several months, we had draft legislation that combined the best ideas from other states and found support among solar businesses, environmental groups, farm groups, and a large utility. After unanimous passage by the legislature, Governor Kim Reynolds signed the bill on March 12, 2020.

"The law allows our investor-owned utilities, MidAmerican Energy and Alliant Energy, to choose either a net billing (similar to the current net metering) or an inflow-outflow billing method to all customers installing new generation. Current net metering customers were grandfathered."

MidAmerican and Alliant Energy have made initial tariff filings at the Iowa Utilities Board to implement the law. The utilities chose to go with the new inflow-outflow billing method. Under

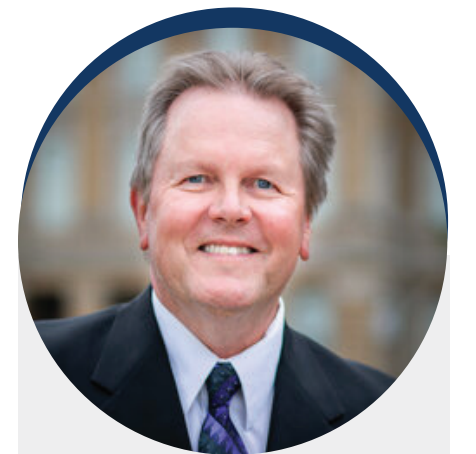
the new method, any kWh from the utility to the customer (inflow) will be paid for by the customer at the retail rate. Any kWh exported to the grid (outflow) will be credited monthly as dollar amounts to offset the customer's monthly bill at the outflow rate, but cannot offset fixed charges like the monthly meter charge.

The utility can recover the amount it credits to customers through a rider on all customer bills, as it does for other types of energy purchases. The outflow rate will initially be set at the applicable retail rate so inflow-outflow will be the same as net metering from a payback/economic perspective for the customer.

When the customer-owned distributed generation penetration in the Alliant and MidAmerican service territories combined reaches 5% of total peak demand or after 7 years, whichever is sooner, a Value of Solar (VOS) study is triggered. The study requires a stakeholder process overseen by the Iowa Utilities Board and utilizing an independent third-party consultant. The primary inputs for the study are based on those in the Minnesota VOS. The VOS rate will be unique to each utility, will be paid to new solar installs for that year, and cannot fluctuate by more than 5% annually. A customer installing a system receives a locked-in outflow rate for 20 years.

The Iowa net metering law provides a foundation upon which customer-owned distributed generation can expand and may serve as an example for other states to follow.

Building on this foundation, the Iowa Environmental Council looks forward to working with Iowans interested in renewable generation to encourage the continued development of distributed generation. iaenvironment.org



By: Steve Guyer
Energy and Climate
Policy Specialist,
Iowa Environmental Council

Midwest Grid Planning:

Transparency and Inclusion to Maximize the Benefits of Distributed Energy Resources

Electric utilities have planned, built, and operated distribution grids for over a century. Generally, utilities build grids with one primary objective: meeting peak demand, that is utilities must ensure that distribution infrastructure can handle, without failure, the days (and hours) when customers demand the greatest electricity. When distribution infrastructure ages or nears its capacity, the utility upgrades the transformer, line, or substation. Utilities routinely assess the risk of failure on each distribution system component and plan investment accordingly. However, utilities—even regulated ones—generally do so with little regulatory oversight or public input.

This traditional paradigm of distribution system planning is changing. Growing customer demand for solar, electric vehicles, energy storage, and other forms of “distributed energy resources” (DERs) has added new considerations to the utility planning model.

“DERs allow customers to not only be passive consumers of electrons, but also smarter “prosumers”—who produce, store, and shift energy use in ways that benefit the grid.”

DERs can play many of the roles that traditional utility infrastructure plays, including providing capacity and regulating voltage. In order to not only accommodate increasing levels of DERs, but also leverage them in ways that avoid wasted spending on “traditional” grid infrastructure (for example, voltage

regulators, capacitor banks, feeders, and substations), utility distribution system planning must evolve beyond planning for peak demand. The urgent need for more DERs to help decarbonize the grid means that evolution must proceed rapidly.

In some Midwestern states, regulators have directed utilities to make distribution planning more transparent and more inclusive of DERs. In 2018, Minnesota established a formal “Integrated Distribution Planning” process. The Minnesota Public Utilities Commission requires utilities (including Xcel Energy) to make detailed distribution system data available to stakeholders, evaluate DER “non-wires alternatives” to traditional distribution system infrastructure, and analyze the “hosting capacity” of its distribution circuits to determine where upgrades are necessary in order to add distributed generation. The Michigan Public Service Commission also requires its utilities to file detailed long-term distribution plans. The three major investor-owned utilities (Consumers Energy, DTE, and Indiana Michigan Power) have started exploring the integration of both non-wires alternatives and hosting capacity analysis into its distribution planning process.

Recognizing the importance of changing the traditional distribution planning paradigm, other Midwestern states including Illinois and Ohio have previously initiated ambitious stakeholder processes to develop statewide “grid modernization” strategies. Legislators and regulators

in those states, however, are yet to institute robust requirements for transparent and inclusive distribution planning. This creates the risk that utilities in those states will make significant grid modernization investments that either could have been avoided with DERs, or that do not actually enable greater DER penetration. As more Midwestern states establish critical and ambitious decarbonization targets, distribution grid planning will become an increasingly important strategy for utilities and stakeholders to ensure those targets are met. The Environmental Law & Policy Center is litigating cases before utility Commissions in several of those states—including in key upcoming cases involving Xcel Energy in Minnesota and the major investor-owned utilities in Michigan—to advance transparent, thoughtful distribution planning regionally. elpc.org



By: Nikhil Vijaykar
Staff Attorney,
Environmental Law & Policy
Center (ELPC)

The Transition to Renewable Energy: Real Opportunity for Rural America

The U.S. electric grid was created to reliably deliver electricity to homes and businesses across the country. For the most part, generating this electricity depended upon centrally-located fossil fuel plants that could be connected to larger population centers.

But over the last decade we’ve witnessed a substantial shift away from this traditional model. A combination of technological improvements, declining costs, and changing demand have led to a boom in the clean energy industry across the country. The development of wind and solar resources in particular have provided consumers with reliable sources of low-cost and renewable electricity, in addition to economic benefits for areas where this generation is developed.

Years of significant growth have led to the U.S. having nearly 110 GW of installed capacity, with an additional 43 GW in advanced stages of development. Likewise, solar has seen a substantial increase, with 85 GW of installed capacity across the country and about 62 GW of solar slated for development.

“Beyond producing clean energy, renewable energy systems have created new jobs and career fields, especially in rural areas where most projects tend to be located.”

Larger utility-scale systems also pay land lease payments to landowners, providing additional income for farm and ranch families dealing with volatile agricultural markets. Rural communities hosting projects have also found a new source of tax revenue, allowing them to fund essential local services. For example, in 2019 the wind energy industry employed 120,000 people across the country, and paid more than \$1.6 billion in the form of tax payments and leases: \$912 million in tax payments to local and state entities, and \$706 million in payments to landowners.

Although development has provided numerous benefits, expansion of renewable energy has presented challenges, especially for our aging electric grid. Because the transmission system was designed to connect centralized generation like fossil fuel plants, one of the hurdles for continued clean energy development has been the ability to link wind and solar projects to the electric grid. These geographically dispersed renewable resources require an updated electric transmission system that will allow consumers to access new clean energy.

As counties and cities across the nation take action on climate change and actively commit to clean energy goals, demand for renewable electricity will continue to grow. In addition, increased reliance on electricity to power not only homes and businesses,

but also transportation, will present new challenges for meeting demand for electricity. To fully capture the benefits of this energy transition, we must upgrade and expand our electric transmission system to keep pace with our shift to new sources of generation, and prepare for the future of energy in the U.S.

Renewable energy has the potential to provide significant economic opportunity for rural America.

But key to this clean energy transition is the infrastructure necessary to deliver clean energy to meet our needs. cfa.org



By: Lucas Nelsen
Policy Program Associate,
Center for Rural Affairs

The Value of Energy Storage: Demonstrated in the Midwest



Energy storage has been likened to a Swiss Army Knife for its ability to provide multiple different services to the electric grid. Energy storage can smooth out the intermittency of renewable generation, it can provide peaking resources at the highest energy demand periods and voltage and frequency regulation, stand in for costly distribution and transmission infrastructure, and make the overall system more resilient.

“As the costs of energy storage have rapidly declined in the past decade, the places that are finding ways to “stack” multiple value streams together are quickly finding that energy storage can be a net economic win.”

While energy storage is beginning to pencil out in niche cases, the Midwest is lagging behind other regions of the country when it comes to energy storage. But signs throughout the region suggest that we are poised for an energy storage boom in the near future. Already, there are signs of how energy storage can be deployed in the Midwest, that if scaled, will demonstrate a path to a clean and prosperous energy future.

One example is a pilot project that’s the product of four Midwestern cooperative utilities working together. Led by MiEnergy Cooperative in Minnesota and Iowa, the utilities worked together to purchase a set of six batteries installed in customer homes. This project builds on decades of experience running load management programs, another dispatchable distributed resource prevalent in the Midwest. Locating the batteries behind-the-meter of customers allowed the cooperatives to engage their members in a new way, while also placing storage in one of the most valuable locations on the grid.

Another example of the Midwest leading the way is Minnesota’s Great River Energy (GRE), which recently announced that they would be deploying a first-of-its-kind long-duration battery project. Most energy storage deployed today relies on the same battery technology in cell phones and laptops, optimized to charge and discharge over the course of several hours. However, energy storage that holds charge for several days could be highly valuable. For example, the 2019 polar vortex caused energy demand to surge for three days while heaters throughout the Midwest went full tilt. The long-duration battery GRE is piloting could store energy for six days and is seen as a key technology

to enable GRE to eliminate coal from its power supply within the next three years.

The Midwest’s plentiful renewable resources can provide a path forward for economic vitality and job growth across the region, particularly rural areas.

But as wind and solar continue their rapid upward trajectory, identifying multiple pathways for energy storage will be necessary to ensure that clean energy opportunities can continue to grow for years to come.



By: Gabriel Chan
Assistant Professor,
University of Minnesota



Midwest Work Ethic: Reimagining Our Future Electricity Grid, TODAY

Midwesterners help out a neighbor in need, no questions asked. We show up for family, friends, or strangers in crisis. We get our work done and then support others who need a little extra help. Our clean energy future should reflect these values: an electricity grid that enables and supports customer-focused and neighborhood-building solutions. Let’s remain rooted in who we are and demand strong policies that create clean power by the people, for the people.

Imagine this future: one night, the electric grid goes down. You have back up power, but you can also share that resource with your neighbors. Or, consider this: instead of building another power plant or new transmission lines through wild spaces, we rely on thousands of homes and businesses generating their own power with rooftop solar and batteries, exporting electricity to the grid when that power is needed most.

This is our chance to reimagine the electric grid and live our shared values. If we don’t change and diversify, we will require massively expensive ratepayer investments in traditional utility upgrades, costing an estimated \$2 trillion through 2030.

“Instead, let’s create a customer-centered, decentralized future that is more cost effective and provides the flexibility our families and communities need. The best part is that future is already possible.”

We have the technology and know-how ready to go. We simply need policies and programs to help the market unlock the benefits of rooftop solar and home batteries: better resilience, wholesale market cost reductions, distribution system deferrals, more clean generation, and fewer carbon emissions.

We must keep policies like net energy metering and encourage third-party financing for home energy to ensure this future is available to all income levels and community members. This can happen by working across the board with utilities and government officials to cut the red tape. We should also support programs that encourage people to invest in their own solar and batteries. For example, a Bring-Your-Own-Device (BYOD) program increases resilience and reduces costs. BYOD programs have proven successful in other states, letting households get more value out of their systems and contribute to an open and transparent energy market.

Together, we can build a stronger, cleaner, and more resilient energy system. We know, in our Midwestern hearts, that home solar and batteries offer efficient, community-driven market solutions. Modern technology paired with policies rooted in our values can help expand clean energy, increase resiliency, and lower electricity costs for all ratepayers. Let’s better our communities by building a strong market and clean energy future for all.

To build on Wisconsin’s motto, Power Forward. sunrun.com



By: Amy Heart
Senior Director, Public Policy,
Sunrun



'Solar Now' BUT BETTER: Wisconsin's Investor-Owned Utilities Could Lead the State's Clean Energy Transition

I'll be the first to say that WE Energies' Solar Now pilot program was tragically flawed by design. The program wasn't a result of some hard-nosed negotiation with regulators or a response to forward-thinking clean energy legislation; neither of these conditions were present in late 2018 when the pilot program was proposed by WE Energies and quickly approved by the Public Service Commission of Wisconsin (PSCW). The program, which let WE Energies use ratepayer dollars to install solar PV systems on rooftops in its service territory, was designed to give the utility a new infrastructure investment and leverage its privileged monopoly status to eliminate competition.

If you needed proof of their intent, WE Energies provided it in October 2018 when they sent a letter to the City of Milwaukee denying their interconnection application for solar on multiple city buildings. Though the state statute that governs utility interconnection solely outlines

technical requirements that the City fully met, WE Energies denied the application based on how the project was financed. This rejection has stopped the project (the modules had already been shipped to the City) and it has been stuck in regulatory and judicial proceedings ever since, with no resolution in sight. The most galling thing, however, was that in the very same denial letter, WE Energies pitched their Solar Now program, which hadn't even been approved by the PSCW yet. This is a clear reminder that without regulation, Wisconsin's electric utility companies can serve as judge, jury, and executioner for private energy projects, even dictating how we are allowed to pay for them.

Expanding the monopoly that WE Energies has over general electricity service, they could use 'Solar Now' to monopolize solar options, as well. They control the interconnection process that all ratepayers and private companies must use to build solar projects in their territory, and, judging

by their treatment of Wisconsin's largest jurisdiction, they don't seem to be shy about using it to deny projects that they won't own and their investors won't financially benefit from. In addition, WE Energies is not required to get competitive bids for the contractors that build the projects as part of Solar Now. Doing so would save ratepayers money, but maybe that is exactly the problem, since the more expensive the projects are, the more financial return for WE Energies' investors.

As you can probably tell, I find this situation infuriating. However, that doesn't mean that I think that Wisconsin would be better served if WE Energies built coal-fired power plants instead of solar on the rooftops of local schools. And, I understand the need for utilities to look for new investment pathways as big generation and transmission projects are increasingly difficult to justify and ratepayers have more options for on-site efficiency and solar. So, where does this leave us?

"With a few important changes, a new and improved Solar Now could not only help Wisconsin transition to a cleaner and more advanced energy economy but could also catalyze investment and employment in jurisdictions that need it most."

First, we need to acknowledge two important principles:

1. The people of Wisconsin benefit from a competitive market for solar, efficiency, electric vehicles, storage, and other on-site energy investments.
2. Wisconsin's investor-owned utilities have a critical role to play in managing a reliable, safe, and accessible energy grid.

Building off these principles, Wisconsin's regulated utilities should advance new and better Solar Now proposals that include the following improvements:

1. Focus Investments in Economic Opportunity Zones: Opportunity Zones are low-income census tracts certified by the U.S. Department of the Treasury into which investors can now put capital to work financing new projects and enterprises in exchange for certain federal capital gains tax advantages. Wisconsin has 120 zones in 44 counties including 60

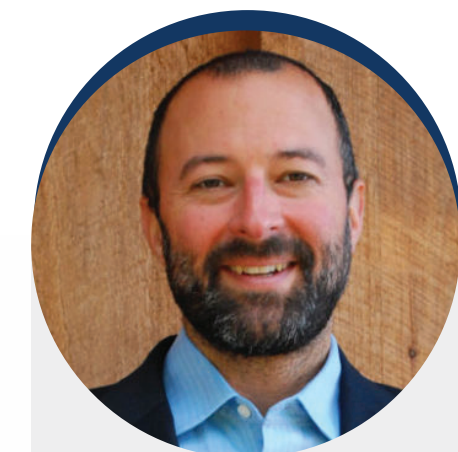
municipalities and these have the highest unemployment rates, the strongest need for investment, and the least investment in advanced energy. Energy infrastructure investments in these areas could catalyze local economic development, create jobs, and provide long-term energy savings for communities that need it most.

2. Establish Independent Oversight of the Interconnection Process: When utilities make investments on the customer side of the meter, they are stretching their monopoly into a competitive marketplace. And in the case of solar energy, they are also the marketplace gatekeeper, managing the interconnection process. Why then should we trust a for-profit monopoly from abusing the interconnection process to prioritize their own investment and their own profits? We shouldn't. An independent body would ensure that engineering, not profiteering, guided the interconnection process.

3. Require Competitive Bidding of Contractors to Get the Best Price for Ratepayers: Everything the utilities build will be paid back in future electric rates. Competition for projects would keep down costs and ensure that the best contractors are designing, building, and operating the new energy assets on behalf of the incumbent utility and ratepayers.

4. Incentivize Hiring and Retention of Individuals from Communities of Need: Wisconsin's electric utilities could quickly update aging electric infrastructure, increase local energy resilience, catalyze further investment, and create jobs where they are needed most.

Because of their privileged position as a regulated monopoly, investor-owned utilities are one of the few corporate giants that can be compelled to make investments that have benefits beyond shareholder profits. It seems to me that if there ever were a time to compel corporate behavior to benefit an even economic recovery, it is now.



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Authors are listed in alphabetical order by first name.

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KEYNOTE SPEAKERS



Sandra Henry
Senior Director of Energy and Sustainability
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"I think it would be crazy [to go back to mono-facial panels]. Utility projects...everything that's ground mount is going to be bifacial. I don't think it's even a thought that it wouldn't be. That's where I think it's going. It would be crazy not to."
Keith Kahlow - Owner, All Sky Energy
All Sky Energy Case Study



"The cost of bifacial modules is so competitive, if you have the space it doesn't make sense to NOT put in bifacials."
Cris Folk - Master Training Specialist
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