SOLAR ENERGY: BUILDING A BRIGHTER FUTURE FOR REGION 5
EQUITABLE ECONOMIC ECOSYSTEMS

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Solar Energy: Building a Brighter Future for Region 5

Locally produced solar energy, one of three value chain (VC) focal points in Region Five Development Commission's (R5DC) Equitable Economic Ecosystem (EEE) initiative for regional prosperity, has the power to stabilize energy costs at this uncertain time. This report provides updates on the Solar Energy VC and Welcoming Communities Advocacy Group (WCAG) initiatives of the EEE project. The other two VC and WCAG efforts, updated in separate reports, include Local Foods and Placemaking-Arts & Culture.

“The specific challenge for R5DC is finding support that helps us expand programming (for which we are trained and have the capacity to deliver) that benefits marginalized and low-income communities. Much of our traditionally allocated funding supports economic ecosystems that do not consider or incent fair and just systems where all people can prosper. Systems change that builds wealth and multiple forms of wealth - done in ways that authentically and equitably include diverse cultures - is an intentional practice and takes steadfast commitment.”

Cheryal Hills, Executive Director
Region Five Development Commission

Acknowledgements:

Rachel Juritsch and Erica Bjelland (formerly with Rural Renewable Energy Alliance -- RREAL); Cheryal Hills, Executive Director, Dawn Espe Senior Regional Development Planner, Angela Anderson, Marketing Director, Region Five Development Commission (R5DC), Jane Leonard, President, Monica Segura-Schwartz, Policy and Outreach Consultant, Growth & Justice; Stacey J. Stockdill, CEO/Founder, EnSearch, Inc. R5DC EEE project reports can be downloaded at www.regionfive.org/resources.
Project Background

In 2019, R5DC received funding from the Northwest Area Foundation to begin advancing a sequenced strategy to construct equitable economic ecosystems (EEE) for regional prosperity in their five-county region of Cass, Crow Wing, Morrison, Todd, and Wadena counties in Central Minnesota, from the community-level origins and spread across the region. The initiative features Welcoming Communities Advocacy Groups (WCAG) and Value Chain (VC) development to help support workforce attraction and strengthen cultural agility in R5DC. This report focuses on the Solar Energy VC and Solar Energy WCAG pilot communities.

These current efforts build on a base of R5DC’s long-term work in rural and regional resilience across sectors and municipalities, including those aimed to recover from the Great Recession (2008-2010), which left the region’s communities facing the worst economic crash since the Great Depression of the 1930s. Ten years ago, hundreds of citizens from the region met many times to envision and lay groundwork for a brighter future for their children and grandchildren. The initiative was one of the first to meaningfully engage marginalized and disadvantaged populations in the region.

Out of that work, Renewable Energy (and specifically solar energy) was identified as a key economic engine. It’s one of three core engines propelling the current EEE project, from both a welcoming (diverse, equitable, inclusive) community perspective, and a value chain economic development perspective.

A year in, the EEE is now buffeted by the health and economic collapse wreaked upon the area (and the world) by the Covid-19 pandemic, topping the Great Recession and Great Depression in its destructive fury. The 2020 pandemic has uncovered fully the social and economic inequities and disparities that pre-dated Covid-19 in the region; EEE initiative efforts are more relevant than ever as all sectors in R5DC attempt to recover and rebuild towards a new normal, this time for more equitable community and economic development going forward.

As noted above, the EEE project focuses on investments in three community and economic value chain community-based pilots -- in local food systems, placemaking (arts & culture), and sustainable renewable energy --and the eight forms of wealth (capital) in the central MN rural region based on the WealthWorks model: financial, cultural, intellectual, social, individual, natural, built, and political (see endnotes for more details).

The foundations underpinning such comprehensive systems change are collaboration and intentionality: in welcoming diverse people and ideas, in building social and financial equity by all for all, in inclusion of all those affected by and effecting change, and, in aligning resources and talent across sectors and disciplines to accomplish such systems change. Learning from these community-based EEE pilots, R5DC seeks to modernize rural community and economic development approaches to fit the changing needs and opportunities of 21st Century small towns and rural regions.
The quest for sustainable and shared regional prosperity emerged out of documented and persistent regional needs to address demographics shifts and economic challenges in Greater Minnesota, from workforce development and recruitment to business succession and more, as acknowledged in the 2019 (and ongoing) DevelopMN strategic plan, created by the MN Association of Development Organizations (MADO) to guide regional competitiveness across Greater Minnesota.

The DevelopMN plan echoes the ideas and emerging practices to overcome regional, racial, and environmental inequities and disparities identified across the urban-rural spectrum in Minnesota by the companion (and also living document) 2020 Minnesota Equity Blueprint. R5DC and other MADO members helped create the Blueprint alongside hundreds of Minnesotans and other organizations in the Thriving by Design Network – Rural & Urban Together, via a community engagement, research, analysis, and writing process co-hosted by Growth & Justice and OneMN.org.

The specific factors inspiring the current EEE project, and noted in both the DevelopMN and Blueprint documents, and at play in the region (and across much of Minnesota) pre-COVID 19, and now further exacerbated by the pandemic, are the following:

- Dwindling existing economic drivers are inadequate to support existing and emerging economic challenges and opportunities such as workforce and entrepreneurial development for current and potential residents. The region five service territory’s economic development origins were historically rooted in agriculture. Today, tourism, manufacturing and some agribusiness are its primary—and insufficient—economic engines.

- Lack of opportunity and cultural amenities further discourage young workers, families, newcomers, and potential home-comers from coming to raise their families and/or retire/refire to hometowns and seasonal cabins as permanent residents.

- The declining general population – heavily weighted by an aging, mostly white, population-- is shrinking local economies and the tax base while increasing burdens upon current workers for the funding of entitlement programs and local public services and education.

- Systemic barriers to education and workforce credentialing prevent immigrant newcomers and disadvantaged communities of color to help fill the need for skilled workers.

Also a troubling concern: the rise of hate groups in central MN. They have always been present in the shadows, but emerged in recent years more publicly to protest and express hostility towards anyone or anything perceived to be threatening their way of life: immigrants, people of color, LGBTQ persons, inclusive community planning, and yes, even local foods initiatives. Community and business leaders in the region welcome talent, ideas, and resources from all corners of the state and the globe. The hate groups increase fear and anxiety about people and cultures seen as unacceptably “different”. This rise in hate is both a moral challenge and a massive barrier to the already difficult efforts to improve community and economic conditions for ALL members of the community.

The Equitable Economic Systems initiative seeks to dislodge the cultural inertia and increase the public courage to be welcoming. It further seeks to increase welcoming community advocacy groups to help build welcoming communities. These actions lay the necessary social groundwork for a modernized approach to rural community and economic development – an approach based on welcoming diversity and building value chains/interconnections of all kinds to foster economic innovation and equitably grow vibrant, inclusive communities.
Why is this important?

The first quarter of the 21st century presents a number of challenges and opportunities to rural Minnesota as it charts its economic future. An economy driven by innovation demands that we create an environment that nurtures talent and workforce, supports entrepreneurship, and creates community conditions that welcome and support the innovation powers of diversity, equity, and inclusion. For rural Minnesota to succeed, strong, collective and credible voices need to create and move forward an equitable economic ecosystems agenda at the local, state, and federal level.

The Region Five Development Commission’s EEE initiative is developing and propelling those voices – and actions -- for positive and productive change, not only for central MN but as a model for small towns and rural areas state and nationwide to follow. Indeed, as we struggle now through the Covid-19 crisis, made worse by pre-existing conditions of regional, racial, and environmental inequities and disparities, can we emerge a more just, equitable, and inclusive society going forward? We say YES! We must do so to save and strengthen our communities.

Equitable Economic Ecosystems - Solar Projects Update in Region 5

March 2020 in Minnesota. The COVID-19 virus begins to alter history and is destroying lives and livelihoods. Region 5, with its own history in catalyzing community and economic resilience, kicks the Equitable Economic Ecosystems initiative into high gear and pursues the development of locally produced solar energy as one of three value chain focal points in the project to help generate sustainable regional prosperity.

Solar has the power to stabilize energy costs and secure energy access. The COVID-19 outbreak has illuminated the volatility of our energy sources. Coal and natural gas provide Minnesotans with a significant portion of energy generation that comes from different states and countries. Solar energy can produce local, dependable electricity for years to come and create and sustain local jobs in the energy sector.

In fact, the 1.8 megawatts of solar arrays installed in projects involving Region 5 – for Pine River-Backus and Pequot Lakes school districts, Central Lakes College, Tri-County Community Action, and Habitat for Humanity -- thus far is expected to save $160,324,425 over 25 years.1 The cost of traditionally-produced electricity is expected to continue to increase, so savings from solar power will likely be even higher than estimated as time goes on. In the current project, solar savings from the arrays will stabilize energy costs for local Habitat for Humanity homeowners, veterans served by Tri-County Community Action, and our local schools.

1 Utility costs vary based on the utility provider. The current average utility rate in Minnesota is 11.5 cents/kWh.
The R5DC Solar Schools Project

The R5DC Solar Schools project, for example, demonstrated that focusing on solar can lead to employment and economic development. It’s the first major step toward a regional economic development goal to expand renewable energy capacity in the five-county region in central Minnesota. It is also leading to the expansion of local job training programs in the solar industry, building the region’s solar capacity, and helping the region’s remote rural K-12 and college students – so that they see how the sun can give them a career path to a much brighter future.

The University of Minnesota Extension’s Economic Impact Analysis report for the project shows that local businesses were the primary providers of services under the solar schools project, which maximizes the economic benefit to the region. Extension’s model and survey results indicate modest gains in business expansion and employment. Extension estimates 25 jobs were supported at the companies with direct solar products.

The UMN Extension analysis also concluded that, in total, the Solar Schools project generated $7.8 million in economic activity in the region. This includes $3.2 million in labor income. The project supported 88 jobs. Top industries affected by the project included power structures construction, banking, and housing.

The R5DC Solar Schools portfolio included 1,494.72 Kw DC - 1,236 Kw AC, with scattered site development consisting of one roof and five ground mounts. The solar systems are installed at six educational sites: two K-12 sites, Pine River Backus and Pequot Lake, and four sites at Central Lakes College (CLC) – Brainerd and Staples campuses.

Rural Renewable Energy Alliance (RREAL), a solar developer based in Backus, Minnesota (Cass County) -- acted as the project construction manager for the project.

Power of MN Video
https://vimeo.com/403841591

Lakeland Public Television
https://youtu.be/6bkK5SvYiz4

MPR News

Clean Energy Resource Teams
https://www.cleanenergyresourceteams.org/solarschools
RREAL, R5DC, Pequot Lakes School District, Pine River-Backus School District, and Central Lakes College all want to integrate solar schools curriculum into their education systems. There has been some beginning work. However, because of a lack of funding the work has been very much on a pilot basis. The initial work was described, in part, in the Solar Schools Evaluation Report:

Integration of solar production and system deployment to K-12 STEAM curriculum. Students and the general public at Pequot Lakes are able to see in real time what is being produced by the solar arrays. In addition, proposals have been written to a number of Science, Technology, Engineering, Arts, and Math (STEAM) funders to continue to support future educational opportunities. These proposals include Kiosks, Solar Curriculum toolkits, in-service day for teacher workshops, and summer interns to assist with project outreach and Kiosk programming needs. Project staff at RREAL are already working with teachers to help them understand how integration of solar education into their curricula can help them achieve Minnesota Department of Education Learning Standards.

The education benefits are an important reason for participating in the solar schools project. These solar demonstration sites help build awareness, too, of the workforce pipeline possibilities.

Creating and maintaining jobs will be essential to moving forward through the COVID-19 pandemic. Solar energy is considered essential work in the state of Minnesota and has the opportunity to provide local jobs. As more jobs in renewable energy are being created, there is an opportunity to prepare today’s youth to be part of the renewable energy economy. RREAL is working on K-12 solar energy curriculum that makes the student the solar expert and explores different jobs in the solar industry.
Welcoming Community Advocacy Group Updates

The Little Falls WCAG is focusing on Solar Energy.

Some of the ideas that emerged from group conversations were working with the FFA students who maintain the summer community garden, The Sisters of St. Frances, and working with Sprout MN (a host of the Local Foods Value Chain) to use solar in some applications in the community garden.

Climate Change Conversations

BJ Allen and Cheryal Hills submitted an application to the Minnesota Pollution Control Agency to create opportunities for climate dialogues within the region. Hills described in an interview that there are two primary forces pushing the region toward hosting climate dialogues: youth interest and RS5DC commission members’ desire to present all sides of the climate change story.

“We have been talking about wanting to do some climate dialogues in the region for two reasons: 1) There have been recent articles in the Brainerd Daily Dispatch that have been submitted by students who attended an event that spurred a lot of interest by the youth population. The students were asking our legislators, what are you doing? What is happening? Somewhat challenging and a call for action for them [the legislators] to pay attention because it was important to the students.

“... that met at my [Region 5] commission table with a lot of mixed emotions. Some people felt like students were being only given one side of the story – somewhat brainwashed, vulnerable, etc. They were not confident that all sides of the issue were really being fairly represented in the education of our youth. That spurred some conversation among the commission to say – well we have played the role in the past --- in the space of energy for many years as the third party entity that would come in and do workshops or whatever to give all the information and let people make their own decisions. So the commission called upon the staff to see what we could do in that space.”
Community Solar for Community Action (CS4CA)

The Energy Assistance program continues to serve more families with help on savings on their energy bills, especially as financial distress increases during the Covid-19 pandemic. CS4CA uses savings from community-owned solar arrays to put more dollars into the Energy Assistance program, to help serve more families. As more families qualify for Energy Assistance in this difficult time, more dollars for these programs can come back in savings gained from using local, renewable energy.

This CS4CA model was first implemented by RREAL with the Leech Lake Nation in 2017. RREAL expanded it to Vermont and Duluth. This initiative was part of a nation-wide challenge by the U.S. Department of Energy’s Solar in Your Community Challenge, which focused on low- and moderate-income community solar, with the goal to help serve more people. RREAL was a winner of that challenge.

In 2019/2020 RREAL worked with Tri-County Community Action Agency in Little Falls to build a community solar array at the Tri-County headquarters. All savings from that solar array will go to help more families with their energy bill, including low-income disabled veterans in the community who have Minnesota Power as their provider. Minnesota Power is a project partner, funding part of the array and give credit for the energy produced to decrease the utility bills of the low-income disabled veterans.

This is a systems change example; Tri-County Community Action has never done a program like this where they are able to use the solar credits to help lower electric costs for the low-income people served. The 22kW array went online in 2019. It’s serving 10 veterans as a pilot to test the feasibility of the project, with the possibility of expanding the array in the future. The project was featured in a story in the Brainerd Dispatch in February 14, 2020: Rural Renewable Energy Alliance partners to bring solar energy to disabled vets.
Solar for Humanity

The Solar Energy Value Chain also builds on a partnership established between RREAL and the Lakes Area Habitat for Humanity 11 years ago to help make solar energy more accessible and housing more affordable. Through this program, it is estimated that the Habitat homeowners save about $600 or more in solar savings each year. In 2018, RREAL furthered the Solar for Humanity partnership with Central Minnesota Habitat for Humanity, another affiliate in Minnesota, and installed a system for a family in Foley, MN.

In September 2019, RREAL installed two systems: one with the Central Minnesota Habitat for Humanity and one for Lakes Area Habitat for Humanity. These two projects not only save families money on their energy bills, but they bring people together in the community. These projects are largely funded by local community donors, funders, and businesses. Research conducted by the Humphrey School of Public Affairs found that few Habitat affiliates in the United States have a strong solar partnership such as that pioneered by the Lakes Area Habitat and RREAL. These projects demonstrate how local community support and strong partnerships can build economic, environmental, and social wealth.
Brainerd Lakes Regional Airport Solar

According to a Brainerd Dispatch article by Theresa Bourke (Jan. 9, 2020) Brainerd Solar LLC, a subsidiary of American Electric Power, plans to build and own a 16,000-18,000 panel solar array:

“From our perspective we feel like just having this site available, it does help generate some renewable energy within our region....We can contribute to that as far as the space goes. So it’s achieving the sustainable goals of airports, as well as our community.” – Brainerd Solar LLC

Brainerd Solar LLC, a subsidiary of American Electric Power, will build and own the 16,000-18,000 panel solar array but sell the energy generated to Brainerd Public Utilities for its use. BPU customers will then have the option to buy in, though the cost has yet to be determined.

Concluding Thoughts

Many of the activities and goals set forth in the original rural resilience initiatives of a decade ago continue with the current Solar Energy Value Chain development and Welcoming Communities Advocacy Groups in Region 5, such as the Little Falls Solar Energy WCAG. The diversity of its group members makes them a strong advocate for using solar energy as one of several pragmatic value chains in the build out towards equitable economic ecosystems in Region 5. As Stay-At-Home social distancing practices increase power use in homes for work and school, residents want and need reliable, affordable LOCAL sources of power. Solar energy fits those criteria while building businesses and jobs at home, too.

In the past year, solar arrays, totaling nearly 1.8 Megawatts, for Pine River-Backs and Pequot Lakes school districts, Central Lakes College, Tri-County Community Action and Habitat for Humanity homes, have been installed. They are the start of a systems change producing clean, renewable energy for our future and for our community’s most vulnerable populations. We have a long way to go and the pathway forward is difficult as we work towards a new normal during and through the Covid-19 pandemic and amidst social and economic fear and anxiety. The R5DC project team and community members call upon their rural resilience to persevere now and thrive in the years ahead.


Attachment on Interrelated Initiatives & Operating Frameworks

Two major community and economic development strategy plans – DevelopMN for Greater Minnesota, and the Minnesota Equity Blueprint for the state as a whole, across the rural urban spectrum – form the contextual and operational guidance system for the R5DC EEE initiative. Here is a brief description of each and links for more information:


This plan represents a collaborative effort of the members of the Minnesota Association of Development Organizations (MADO) to align strategic economic development efforts throughout Greater Minnesota, and leverage resources at all levels for a greater overall development impact.

Two decades into the 21st century, communities in rural Minnesota continue to face unique challenges and opportunities as they chart their economic future.

Minnesotans live in an economy driven by innovation demands. Responsive regions nurture their workforce, support a culture of entrepreneurship and encourage strong and diverse communities.

Minnesota Regional Development Organizations are working collectively to accomplish the following:

- Create a common framework for regional economic plans, including a template for data collection, assessment, strategies, and measures of success
- Develop regional strategies that address the special challenges and opportunities of each part of the state
- Create a framework for state action that will enhance and support economic development efforts at the local and regional level
- Develop and implement an approach that effectively engages state partners
- Raise the bar on what constitutes effective rural economic development in Minnesota

For rural Minnesota to succeed there is a need for a credible collective voice that can create and propel an economic agenda at the local, state and federal levels. Develop MN advances a common framework for regional economic development. It identifies **four cornerstone strategies for strong regions and communities: Human Capital, Economic Competitiveness, Community Resources, and Foundational Assets.**

These strategies address the special challenges and opportunities of Greater Minnesota and enhance and support economic development efforts on all levels and engage local, regional, state and federal partners. Collectively, MADO and its partners will set a higher standard for what constitutes effective rural economic development in Minnesota. [http://www.mnado.org](http://www.mnado.org)
The Minnesota Equity Blueprint: Thriving by Design Rural & Urban Together (Feb. 2020)
https://growthandjustice.org/facts.fixes

Widening inequalities and climate change pose the most important and immediate challenges to Minnesota’s long-term economic prosperity and quality-of-life. The Minnesota Equity Blueprint serves as a comprehensive policy guidebook for the next decade, to address these demographic and geographic disparities, to build a more inclusive economy, to find more common cause between rural and urban Minnesotans and to restore our natural environment.

The Blueprint is a comprehensive, non-partisan, long-term plan for shared prosperity in a healthier environment. It’s designed to reflect the interconnectedness of our state’s people and regions, as well as interconnectedness between the disparities, challenges, and solutions that shape our future.

The “open source” document was co-facilitated by Growth & Justice and OneMN.org and created with the members of the Thriving by Design Network — Rural & Urban Together (TBDN).

Four chapters and multiple sections encompass challenges and emerging and recommended solutions across four key interconnected areas of community and economic development: Human Capital, Economic Development, Infrastructure, and Environmental Resilience.

The Blueprint has been designed not just for the Legislature or governmental decision-makers, but as a resource for individual and local community action. Story boxes throughout chronicle regional best practices and inspiring efforts to build a more equitable and inclusive economy.

Wealthworks Value Chain & the Eight Forms of Wealth
https://www.wealthworks.org/basics/construct-wealthworks-value-chain
https://www.wealthworks.org/basics/explore-regional-wealth-building

A WealthWorks value chain is a network of people, businesses, organizations and agencies addressing a market opportunity to meet demand for specific products or services—advancing self-interest while building rooted local and regional wealth.

The Wealthworks Eight Forms of Wealth are:

- **Built Capital** is the stock of fully functioning constructed infrastructure.
- **Financial capital** is the stock of unencumbered monetary assets invested in other forms of capital or financial instruments.
- **Individual capital** is the stock of skills and physical and mental healthiness of people in region
- **Intellectual capital** is the stock of knowledge, innovation, and creativity or imagination in a region
- **Natural capital** is the stock of unimpaired environmental assets (e.g. air, water, land, flora, fauna, etc.) in a region.
- **Political capital** is the stock of power and goodwill held by individuals, groups, and/or organizations that can be held, spent or shared to achieve desired ends.
- **Social capital** is the stock of trust, relationships, and networks that support civil society.
- **Cultural capital** is the stock of practices that reflect values and identity rooted in place, class, and/or ethnicity.
Why do we use the WealthWorks model?

Equitable Economic Ecosystems can be advanced through this proven model of rural economic development planning and plan implementation. Wealth Works or rural wealth creation, also known as the Community Capitals Framework, is practiced by a national network of diverse development organizations. All eight forms of wealth can be found in the solar energy projects and initiatives shared in this report.

The WealthWorks approach to economic development is anchored by these values:

• Creating wealth (defined as intellectual, individual, social, natural, built, political, cultural and financial wealth) in a local community.
• Ensuring wealth is rooted through local ownership and control.
• Improving livelihoods for people and firms struggling economically.

WealthWorks offers a systematic approach that identifies enterprising opportunities in a region and engages a wide range of partners in turning those opportunities into results that both build and capture wealth. It can complement or incorporate traditional economic development methods, but intentionally focuses on creating more value that becomes rooted in local people, places and firms.

The WealthWorks approach is designed to produce and sustain these results:

• Build a more self-reliant and robust area economy.
• Bring underutilized community assets - people, place, property and know-how - into fuller participation and production.
• Create wealth that sticks - because it is locally owned, controlled and reinvested.
• Increase upward mobility overall and advance the livelihoods of lower-income people, firms and places.
• Strengthen industry sectors that fuel the economy.
• Forge valued partnerships that can ably and flexibly connect again and again to power increasingly resilient regions.

WealthWorks allows local leaders to focus on what they have—instead of what they lack—to generate multiple forms of wealth that benefit residents today and for generations to come while rooting value in local people, places, and businesses.

Scan the QR code using your smartphone camera to learn more about Wealthworks.