

Minnesota Solar Equity

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Introduction

In the United States, the transition towards a cleaner energy sector has been rooted within renewable technologies such as wind, solar, and storage. Although traditional solar policies and financing models have allowed solar participation for homeowners and businesses with high credit scores, adoption rates in low- and -moderate-income (LMI) households remain low due to several barriers. To be classified as “LMI” an individual or family’s household income must be 80% of the median income for the county or area where they reside in.

As a result, multiple states including Minnesota, are working to develop and implement strategies for addressing barriers and create a just energy system that is clean and available to all. This research aims to answer what Minnesota is doing to address energy equity for LMI households, who are the main contributors and their responsibilities, how Minnesota’s pathway may differ from other states, and how Minnesota can either improve or offer assistance to surrounding states.



Left: Rural Renewable Energy Alliance’s (RREAL) first community solar project with Leech Lake Band of Ojibwe
Source: Brainerd Dispatch

Methodology

To analyze Minnesota solar equity, a collection of secondary sources were compiled to understand what constitutes as an LMI household, barriers associated with solar implementation, case studies of best practices happening throughout the United States, and a review of past and current Minnesota state legislative goals.

Additionally, interviews were then conducted with experts from various organizations involved with LMI solar to gain insight on how solar equity is beginning to be addressed in Minnesota. Interviewees include Jack Klumpke, a solar financing specialist working with the MN Department of Commerce; Lee Gabler, a customer program director working with Minnesota’s largest utility provider Xcel Energy; Vicki O’Day, a development director working with Rural Renewable Energy Alliance; and Alice Madden, an outreach employee working with Community Power Minnesota.

Current Barriers to LMI Solar Access

Financing: Power-Purchasing-Agreements (PPAs) and Solar Leasing

- These financing models enable third-party-ownership. With PPAs, a household agrees to purchase power generated by the system at a set electric prices. In contrast, leases enable households to rent a solar system at a monthly fixed cost until ownership.
 - Good credit scores required
 - Regional Restrictions

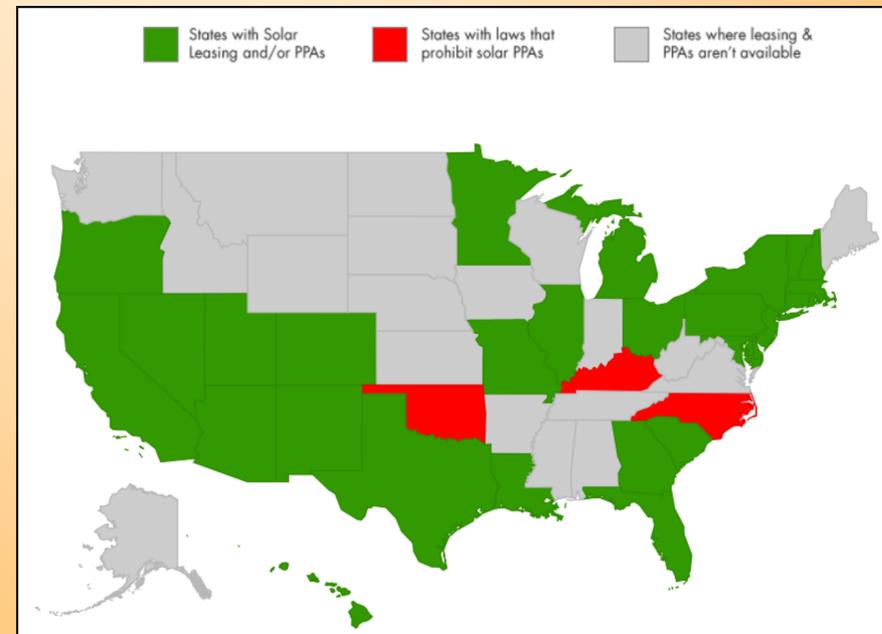


Figure 1: Where solar leasing and PPA’s are prohibited across the U.S. Source: Solar Power Rocks

Household Condition and Ownership

- 73-78% of homes cannot host solar due to tree shading, orientation, and homeownership complications

Education and Outreach

- Inconsistent solar programs and practices

Market Forces

- Potential investment risks

Guiding Principles to LMI Development

- Renewable Energy Standards (RES)
- Renewable Energy Credits (RECs)
- Strong Net Metering Policies
- Community Solar Gardens



Source: Energy News Network

Minnesota Analysis

Legislation Goals

- Carbon reduction of 80% by 2050

Renewable Standards

- Xcel—31.5%
- IOUs—26.5%
- Other Utilities—25
- Solar Carve-Out—10%

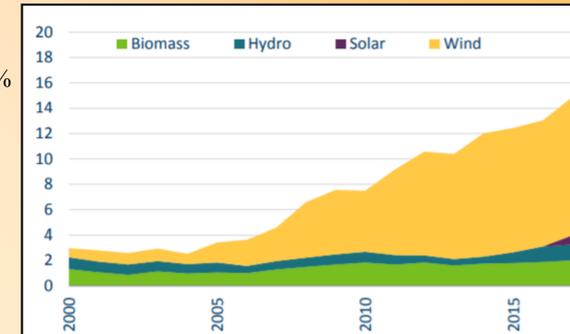


Figure 2: Minnesota’s Renewable Energy Mix in Terawatt hours from 2000-2017. Source: EIA

Interviews with Minnesota Solar Developers

Jack Klumpke—MN Dept. of Commerce



“We have 433,000 households in MN that qualify for Energy Assistance but only enough money to help 130,000 of them. Solar could go a long way to helping out those families who have to make the decision between heat and food.”

Lee Gabler—Xcel Energy



“This year we have a carve out for low income customers and organizations that give them a higher incentive both on a performance-based and upfront incentive to encourage developers & installers to start engaging in the low-income communities.”

“Utility scale solar is about 4\$/MW while community solar is 12-13\$/MW, almost 3x more expensive, and rooftop 16-17 MW.”

Alice Madden—Community Power MN



“We’re an organization that works on promoting energy democracy and the principles behind that. Essentially focusing on granting access to clean, localized, affordable and equitable energy options.”

“Every single person is paying for statewide programs that help offer support or rebates for energy efficiency. However, the only people who have the access to these are folks who already have the credit score or enough money.”

Conclusion

A few years ago, there was no classification such as “Low-and-Moderate Income” customers. As a result, bringing solar equity to these communities is a relatively new task especially for Minnesota. However, through the conglomeration of state departments, utilities, and non-profit participation there are several LMI solar project currently in the works. Therefore, Minnesota is poised to be a nationwide leader, especially in the Midwest, when it comes to providing equitable access to solar participation.