

State agencies in Colorado and Michigan have partnered with electric co-operatives (co-op) to bring community solar to low-income households. Co-ops are member-owned nonprofit entities that are formed to serve those without access to power through for-profit utilities. According to state agency partners in Michigan and Colorado, the community solar model offers a way to bring renewables to more low-income households and aligns with the mission and structure of participating co-ops. In both Michigan and Colorado, partners have focused on engaging participants that have also had their homes weatherized, offering increased energy savings.

Benefits

Community solar programs implemented in Colorado and Michigan have the potential to lower and create more stable electric costs for low-income subscribers. According to the Colorado Energy Office's 2017 report, "[Insights from the Colorado Energy Office Low-Income Community Solar Demonstration Project](#)," on eight low-income community solar projects with electric cooperatives in Colorado, subscribers saved 15 to 50% on their electric bills. Community solar opens access to renewables for households where rooftop solar is not a viable option (e.g., due to roof condition, limited solar exposure, maintenance cost concerns) or when the resident who wants solar PV is not the building owner, such as for renters and those living in multifamily properties. Leveraging the network of low-income weatherization and energy assistance agencies has facilitated enrollment of qualified households. Also, co-ops typically serve customers in rural areas where land for solar farms has been more readily available.

Key Elements

In Colorado and Michigan, state funds have been used to leverage utility investment in demonstration (pilot) community solar projects. Local weatherization and energy assistance agencies manage subscribers to reduce administrative burden and ensure that cost-effective energy efficiency measures happen in conjunction with solar options. Generation and transmission cooperatives have purchased solar panels on behalf of their distribution co-ops. They provide wholesale power to these distribution co-ops, which deliver electricity to their member-owners. Member subscribers in these programs sign up to lease a share of what the solar array produces or a set number of panels for a specified number of years. In Colorado, for example, each household subscribes to 2 to 5 kilowatts kW on average, for a period of one to five years. Most commonly, the utility issues a credit to the subscriber, which offsets the subscriber's utility costs, including costs for electricity consumption and flat recurring charges. Both states leverage the network of local weatherization and energy assistance agencies to facilitate recruitment of income-qualified households.

Examples

The State of Michigan energy office (SEO) partnered with Cherryland Electric Cooperative on a pilot low-income community solar project they launched in 2018. The SEO provided matching funds and the majority of the project was financed by the cooperative. The state's Weatherization Assistance Program (WAP) office worked with Northwest Michigan Community Action Agency (a WAP Subgrantee) to identify low-income participants for the pilot project. Participants received weatherization prior to a subscription with the community solar project. Additionally, each participating member has been provided a nine-panel photovoltaic (PV) share in the Spartan Solar community solar array in Cadillac, MI. Participants receive a monthly bill credit of 10 cents per kilowatt hour for the output of their PV share, or about \$350 in solar bill credits each year they are subscribed. Michigan plans to reevaluate eligibility annually to ensure those participating are still qualified. Michigan sees this as a way to provide additional energy bill savings to those

that need it most. For example, if all homes need weatherization equally from an energy usage standpoint, some need it more based on elderly or children living in the homes or health and safety factors.

The Colorado Energy Office (CEO) [low-income community solar demonstration project](#) provided matching (1:2) funding for seven electric cooperatives in Colorado rural areas to offer community solar for income-qualified members. The demonstration project was designed to help reduce energy burden for over 300 low-income households and to identify optimal project structures for low-income subscribers and utilities. CEO has committed to finding ways to reduce electricity costs through both energy efficiency and renewable energy. For one of the demonstration community solar projects, Empire Electric Association (EEA), a rural co-op, partnered with GRID Alternatives to develop a 26 kW community solar array for up to seven low-income members. Members subscribe to an average of 3.7 kW and have a five-year, renewable contract. The member pays EEA the retail rate for electricity plus fixed monthly charges and receives a solar credit for the electricity produced by their panels. EEA's project is expected to save subscribers \$485 each year on average.

Applicability

Where cost effective, states may partner with electric co-ops to demonstrate how community solar can promote energy affordability and expand access to additional savings from solar for low-income households, especially those that have also received energy efficiency services. Electric cooperatives provide service to 90% of the persistently impoverished zip codes in the U.S according to a 2018 [report](#) from the National Rural Electric Cooperative Association.

Implementation Considerations

States can leverage weatherization and energy assistance providers to manage subscribers. Specifically, they can recruit income-eligible participants and focus on those that have already received weatherization wherever possible to ensure participants are maximizing their savings opportunities. The connection between energy efficiency, conservation, and savings is central to the achievement of maximum savings. Subscribers may be encouraged to pursue energy efficiency programs and take part in educational opportunities so that they will continue to experience utility cost savings, once they are termed out of their community solar program. Program implementers may want to keep the subscription relatively small in size per household (e.g., in kW, number of panels, or share percentage) so that more households can benefit.

Links

- [Cherryland kicks off Michigan's first renewable energy/energy waste reduction pilot program for low-income customers \(2018\)](#) State of Michigan
- [Community Solar Works for Low-Income Communities](#) Vote Solar
- [Electric Cooperatives and Persistent Poverty Counties \(2018\)](#) National Rural Electric Cooperative Association
- [Electric cooperatives light the way toward more community solar \(2017\)](#) Solar Power World
- [For Many Electric Co-ops, Community Solar is the Answer \(2016\)](#) America's Electric Cooperatives
- [Insights from the Colorado Energy Office Low-Income Community Solar Demonstration Project \(2017\)](#)