EXPANDING ACCESS TO COMMUNITY SOLAR FOR LOW-TO-MODERATE INCOME UTILITY CUSTOMERS IN THE SOUTHEASTERN UNITED STATES

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Introduction

The NC Clean Energy Technology Center (NCCETC) at NC State University has been conducting several projects addressing the challenge of providing access to and benefits from community solar programs to lower-income citizens in the southeastern United States. This region generally has limited policy support for community solar, but some programs have been developed nonetheless. NCCETC's work has examined approaches to improve the economics of community solar projects and policy supports for lower-income participation in community solar programs.

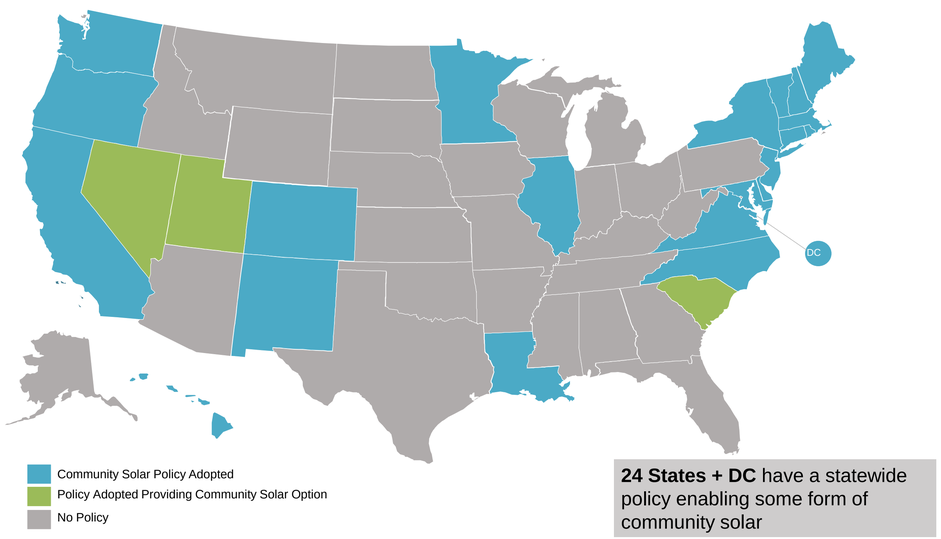

Image 1: State Community Solar Policies in the United States

Solar-Plus for Electric Cooperatives

NCCETC partnered with Cliburn & Associates on the Solar-Plus for Electric Cooperatives (SPECs) project, part of the National Renewable Energy Laboratory's Solar Energy Innovation Network program. As part of this project, the team developed the Solar-Plus for Electric Cooperatives Early-Stage Decision Model, which allows for analysis of multiple value streams that can be garnered from solar-plus-storage projects. These include peak-shaving, ancillary services, distribution deferral, and resiliency value. NCCETC and Cliburn & Associates are currently adapting this model for use with community solar projects as part of work funded by the North Carolina Department of Environmental Quality (NCDEQ) using funds from the American Rescue Plan Act (ARPA), and is using the model to analyze possible community solar and energy storage projects for utilities in North Carolina.

Subscription Support for Lower-Income Utility Customers

In 2021, NCCETC distributed $166,400 in funding from NCDEQ, supplied through the Coronavirus Aid, Relief, and Economic Recovery (CARES) Act, to provide pre-paid subscriptions to utility community solar programs for NC residents with income at or below 200% of the federal poverty level. 94 households received 10-year subscriptions through the program across participating utilities, supplying utility bill savings of at least $15 per month. NCCETC is distributing an additional $80,000 in 2022 for subscription support using funding from ARPA.

Image 2: Ribbon-cutting Event for the Fayetteville PWC Community Solar project on October 23, 2019

Community Solar for the Southeast

From 2017-2020, NCCETC led the Community Solar for the Southeast Project, part of the U.S. Department of Energy's Solar Energy Evolution and Diffusion Studies – State Energy Strategies (SEEDSII-SES) funding program. The project team conducted technical assistance for nine cooperative and municipal utilities in the Southeastern U.S., evaluating the feasibility of community solar and energy storage facilities.

Chart 1: Sample Output from Solar-Plus for Electric Cooperatives Model

Approaches to Increase Community Solar Benefits for Lower-Income Participants

NCCETC is examining technical and program design approaches to increase the benefits and accessibility of community solar programs to lower-income participants. These approaches include:

- Incorporation of Energy Storage
- Recognition of Additional Value Streams (e.g. resilience)
- Repowering of Older PV Arrays
- Larger-Scale Community Solar Facilities
- Philanthropic and Government Support
- Opt-Out Program Designs

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