U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

Summary: Solar Energy Technologies Office State Convenings

The National Community Solar Partnership's efforts to gather feedback on equitable community solar deployment in mature, emerging and new markets

March 2022

Disclaimer

Executive Summary

The U.S. Department of Energy (DOE) Solar Energy Technologies Office (SETO) hosted a series of virtual convenings that brought together state government representatives to share their perspectives on barriers to deploying community solar as well as opportunities and needs for increasing equitable access to community solar in each representative state. This document summarizes the stakeholder feedback that SETO received from participants representing 30 U.S. states, territories, and Washington, DC. The findings are summarized in Table 1 and expanded upon in the Discussion Questions section.

Convening participants identified four major barriers to community solar deployment:

1. State policy and regulatory environments, including program design;
2. Access to project capital, particularly for community-based projects and projects serving low- to moderate-income (LMI) households;
3. Subscriber outreach and acquisition; and
4. Project siting and interconnection.

Participants expanded on the challenges that these barriers present and potential solutions to enable equitable community solar deployment at the state level.

This feedback will used to inform the direction of the National Community Solar Partnership (NCSP) along with feedback from a recent Request for Information (RFI) and other stakeholder engagement activities.

Convening Sessions Structure

We held three convening with states to explore challenges and opportunities that states face at varying solar market maturity levels. The following states participated in the convenings:

Alaska	Maine	Puerto Rico
Alabama	Michigan	Rhode Island
California	Minnesota	South Carolina
Connecticut	North Carolina	Tennessee
Delaware	New Hampshire	Utah
Florida	New Jersey	Virginia
Georgia	New Mexico	Vermont
Hawai'i	Nevada	Washington
Massachusetts	Oregon	Washington, D.C.
Maryland	Pennsylvania	West Virginia

For the purposes of this convening series, SETO defined market maturity as:

> *Mature*: States with community solar-enabling legislation, active community solar programs, and possibly a low- to moderate-income (LMI) community solar program
>
> *Emerging*: States with community solar-enabling legislation, new programs under development or recently launched, or programs with minimal deployment, and possibly a LMI community solar program(s)
>
> *New*: States without community solar-enabling legislation that are exploring community solar program options, may or may not have an LMI community solar focus

Feedback Summary

Table 1. Summary of barriers and solutions to community solar deployment at the state level identified by convening participants

Identified Barriers	Possible Solutions

1. State Policy and Regulatory Environments
• Lack of enabling legislation for community solar
• Other state policies that stop or slow community solar deployment, such as limits to net metering and access to third party ownership
• Need for policies with strong consumer protection that do not create onerous reporting requirements, particularly for projects that serve low- to moderate- income (LMI) households
	• Adopt state policies that increase community solar market access for communities or municipalities
	• Streamline processes and requirements to verify income for subscribers from LMI households, such as through existing utility and bill assistance programs (e.g., Low-Income Home Energy Assistance Program (LIHEAP)), environmental justice community designations, or income-qualified census tracts.
	• Provide peer networking, data, case studies, tools, and pilot projects to help states develop programs that enable meaningful benefits of community solar, including:
	  ○ Community ownership
	  ○ Energy storage and grid resilience
	  ○ LMI household access and energy burden reduction
	  ○ Workforce development
	• Provide technical assistance to help states without enabling legislation develop alternative community solar models

2. Access to Project Capital • Higher marginal costs for smaller projects • Perceived risk for projects that serve LMI households, leading to costly debt for developers and impacting financial feasibility • Inability of state and/or local government and nonprofits to directly monetize the solar Investment Tax Credits • Lack of access to pre-development capital	• Include financial incentives in program design to include enrollment of LMI households and increase financial viability of projects serving LMI households • Include carveouts for LMI households in program design to further incentivize their inclusion among project subscribers • Guarantee funds to de-risk projects serving LMI households • Provide funding that helps community-based or small developers cover pre-development costs • Pair solar with storage to increase resiliency and allow for larger installations in certain markets

3. Subscriber Outreach and Acquisition • Limited awareness and understanding of community solar among residents • No central repository for community solar projects with available subscriptions • Customer skepticism, especially in historically excluded and under-resourced communities • Limited consumer protections for community solar subscribers • Additional customer and developer burdens for verifying LMI eligibility	• Develop standardized language and educational material about community solar to improve awareness and understanding • Develop flexible community engagement toolkits, in multiple languages, to support states' outreach efforts • Develop a customer-facing database with project availability information to help households enroll in community solar • Use inter-agency collaboration to improve reach to consumers and leverage credibility and trust of agencies • Streamline LMI verification by defining eligibility by census tract or other state benefit programs • Create a centralized LMI verification tool to streamline enrollment • Use peer networking to share best practices in leveraging community organizations or other state agencies to deliver information about community solar • Bundle low-income energy assistance resources with other low-income assistance resources such as food, transportation, or childcare • Improve consumer protections and protect customer privacy through developer certifications or central repositories
4. Project Siting and Interconnection • Outsized interconnection costs for small projects • Bottlenecks in interconnection approval process • Difficulty siting projects to balance demand, ease of interconnection, incentives, and environmental justice concerns • Competing interest in land use between solar development and agriculture • Public resistance to development	• Build microgrids that include community solar and storage to provide opportunities for community ownership, access, and resilience • Support project siting and design with modeling tools • Provide technical assistance to help developers (especially community-based organizations or small developers) navigate complex siting, development, and interconnection requirements

Discussion Question 1: What are specific challenges states face to deploying equitable community solar?

- Are these barriers with internal or external stakeholders?
- Do you believe these barriers can be addressed?
- What specific barriers exist to increasing access for low- to moderate-income (LMI) households, reducing energy burden, improving resiliency, and providing workforce opportunities for local communities?

State Policy and Regulatory Environments

- State representatives articulated that prohibitive state policy or regulations were the most consistent barrier they faced to ramping up community solar in their state. A lack of enabling legislation for community solar persists in many states, representing a clear barrier to rapid deployment. Other elements of state policy landscapes specifically pose barriers for community-based and community-owned solar, such limits to net metering or access to third party ownership models. Some states are exploring policies such as community choice aggregation, a structure that allows local government entities to procure electricity on behalf of retail electricity customers within a certain geographic area, to increase market access for community- or municipality-led projects.[1]
- Some state policies only or primarily support utility-led community solar projects, which places a barrier on third-party development, community-owned projects, and/or diverse types of project development. State policy and regulations also have a large impact on the financial feasibility of projects. Policies that support access to financial incentives such as solar renewable energy credits (SRECs) and program adders for community solar projects and/or LMI serving community solar subscribers can increase project viability.
- State participants highlighted the need for policies that support LMI household access to community solar systems, such as requiring LMI carveouts for projects or programs or enabling on-bill credits/financing options that allow customers to finance their subscription through their utility bill. They also suggested removing unfair and burdensome qualification requirements for LMI households, such as income or tax history, social security information, or other sensitive information not required for market-rate subscribers. Several states also communicated a need to balance strong consumer protection requirements with introducing additional barriers (such as complex

[1] Community choice aggregations (CCAs) are local governmental entities that procure electricity on behalf of retail electricity customers within a certain geographic area, and can be run by governments, third-parties, or local communities. To learn more, see https://www.nrel.gov/docs/fy19osti/72195.pdf.

paperwork or contract language) to acquisition and verification for customers from LMI households. States also indicated the desire for state policy models that ensure energy bill savings and/or reduced energy burden (the percentage of household income spent on energy bills) for LMI households from community solar programs.

- State participants indicated that complex program design can hinder LMI household participation, but appropriate state regulation can help streamline and simplify program design. For example, some state programs place capacity limits on LMI community solar development, which limits state program administrators to only award a small fraction of LMI program applications and restricts the ability of developers to scale LMI projects within a state.

Access to Project Capital

- State participants also identified a major concern around the difficulty of financing community solar projects, especially for majority-LMI or community-owned models. Smaller community-owned projects have a higher marginal cost than utility-scale projects, which can be exacerbated in regions with higher land value or artificially low electricity rates. Projects that serve primarily LMI households have perceived financial risk (often due to concerns about higher nonpayment rates or subscriber turnover), which can make it difficult for developers of projects serving LMI customers to access low-interest financing. Many states shared that state or federal tax incentives such as the Solar Investment Tax Credit cannot be directly monetized by nonprofits and governments (including municipal utilities and local government entities), and it can be difficult for community-based projects to access tax equity because of their small size and inexperience in complex tax equity markets. Guarantee funds is one way to help de-risk projects that serve primarily LMI households. Pairing community solar projects with energy storage was suggested as another way to increase the financial viability of smaller projects.
- The structure of state incentive programs plays a large role in supporting project financing and providing tangible bill savings to LMI households. State participants suggested program structures with financial incentives, such as “adders”, or additional compensation per kilowatt-hour, to encourage higher levels of enrollment for LMI households.
- State partners highlighted a need for greater access to up-front capital to cover pre-development costs for small or community-owned projects such as time to scope and plan the project or comply with lender requirements such as third-party audits.

Subscriber Outreach and Acquisition

- Many state participants identified education and outreach to potential community solar subscribers as a challenge, especially for LMI households. Even in states with established community solar programs, many residents lack understanding and awareness of community solar and its benefits, including basic information on the availability of community solar and how to sign up. This challenge is compounded by the complexity of community solar models and providers, as programs can be run by states, private developers, non-profits, municipalities, utilities, and cooperatives.
- States indicated that DOE or others could provide value by creating standardized language and educational material to increase awareness and understanding of community solar programs and benefits. States also raised a need for flexible toolkits and outreach materials in multiple languages to support their community engagement efforts around community solar. A national, customer-facing database that includes information about community solar projects with available subscriptions could help build trust and increase enrollment in community solar projects.
- States identified skepticism about outreach from unfamiliar programs and entities as another barrier to subscriber acquisition, especially in disadvantaged communities which are historically marginalized and overburdened. This distrust can often be attributed to a history of predatory alternative energy suppliers in these communities, who may have provided more expensive and lower quality service than the default supplier. Some state energy offices are improving awareness and trust in community solar through increased inter-agency collaboration, such as working with state social service agencies to pair their community solar program with a state or utility-led energy assistance program such as the Low-Income Home Energy Assistance Program (LIHEAP) or a utility discount program. Pairing community solar services with other programs that are well established and trusted in LMI communities can build legitimacy and trust in community solar benefits and services.
- States identified that verifying LMI eligibility can add time and expense for subscriber organizations and place an onerous paperwork burden on subscribers. Collaborating with other state agencies that serve LMI households can help identify and verify LMI eligibility for community solar. Other suggestions to streamline acquisition and verification for LMI household enrollment include defining eligibility by geographic area (such as majority low-income census tract residents or environmental justice communities), allowing enrollment by households already enrolled in other income-qualified benefit programs (e.g., LIHEAP, Supplemental Nutritional Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), or offering automatic subscription by the utility for all LMI-verified households through utility assistance programs. States also suggested that DOE consider developing a centralized LMI

verification tool to coordinate enrollment across LIHEAP and community solar programs. States may also consider automatically bundling low-income assistance resources such as energy and food assistance with community solar subscriptions to increase access and lower costs of customer acquisition.

- State representatives indicated a need for improved consumer protections for community solar subscribers. There are no certifications or central repositories to distinguish credible developers and programs, which puts subscribers at risk of participating in predatory programs and could undermine trust in community solar. State government representatives also identified privacy concerns and protecting sensitive consumer information as a challenge and raised the need for regulation and enforcement for consumer protection.

Project Siting and Interconnection

- States identified interconnection and siting challenges as major barriers to equitable deployment across new, emerging, and mature market types. State representatives reported outsized interconnection costs for small projects. Bottlenecks in receiving approval from utilities for project interconnection also create long delays and further increase costs. To address these issues, some states are considering policies that waive interconnection fees for LMI-focused projects and pushing for transparency in timelines and upfront costs, such as transmission upgrade needs and sizing requirements.
- States shared that developers—especially those working on smaller or community-based projects—may find it difficult to identify the appropriate location for community solar sites that balance demand, cost of interconnection, available incentives, and environmental justice concerns. Aging infrastructure or lack of developable land are additional barriers to siting, especially in historically excluded and under-resourced communities.
- Many states also identified an emerging challenge for the development of larger-scale community solar of competing interest between solar developers and the agricultural industry on farmland. States shared concerns about community solar development interfering with farmland and agricultural infrastructure, as well as an interest in preserving green space and encouraging community solar development on brownfields and landfills. States also cited public resistance and concerns to siting community solar in certain neighborhoods, especially in environmental justice communities, and the need for robust community engagement processes. Some states are exploring community-owned microgrid models, which pair solar with storage, to provide more community decision making, access, and resilience.

Discussion Question 2: What opportunities do you see for community solar in your state? What do you need for successful deployment of community solar?

- What can DOE do to support community solar deployment in your state?
- What tools do you need? What resources are needed to increase access for LMI households, reduce energy burden, improve resiliency, and provide workforce opportunities for local communities?
- State participants shared multiple opportunities for increasing equitable community solar deployment, such as building microgrids to increase community and grid resilience, community-owned solar assets, and local workforce development programs that are tied to community solar and focus on long-term careers. State participants also suggested tying the benefits of community solar to energy bill and energy burden reduction for LMI households, while also bundling community solar and other assistance resources for LMI households through state and inter-agency collaboration.

Data, Best Practices, and Case Studies

- The most frequently expressed need from state representatives was for more data, case studies, and tools. States also expressed the need for pilot projects that help states understand how to develop programs that incorporate all meaningful community solar benefits, such as community ownership, energy storage and grid resilience, access and energy burden reduction for LMI households, and workforce development. States requested case studies on:
    - Community-owned community solar
    - Financing for LMI-focused projects
    - Incentive amount and bill savings for meaningful participation of LMI households
    - Streamlined processes to verify subscribers from LMI households
    - Workforce opportunities with community solar
    - Programs that spur economic development and create local jobs
    - Amount of battery storage required for community resiliency
    - Operational and administrative costs of community solar for developers
    - Value of siting community solar in environmental justice communities

- Several states requested modeling tools for project siting and design, and were especially interested in understanding how community solar and energy storage could reduce costs and increase resilience. States also requested tools for streamlining LMI household verification.

Peer Networking and Collaboration

- State participants requested that DOE continue to host convenings for program administrators and other stakeholders to provide a network for peer learning, exchange of best practices, awareness of new opportunities in community solar, and a venue to troubleshoot their programs. State representatives discussed staffing limitations in their respective jurisdictions and the difficulty of keeping up with the fast-evolving community solar landscape. States highlighted the benefits of peer-to-peer learning to address common barriers, especially in similar geographic or regulatory environments.
- Another opportunity for states is to partner with agencies already servicing LMI households to simplify outreach, enrollment, and verification processes. States shared that, because state agencies are often siloed, a directory of state and federal agencies that engage LMI households or interact with community solar would improve coordination, as well as case studies or best practices for LMI program streamlining and inter-agency coordination.

Technical Assistance

- States, especially those with new and emerging community solar markets, requested technical assistance with legal challenges to developing community solar programs, as well as support for developing alternative models in the absence of enabling community solar legislation. States also highlighted that many community solar stakeholders—especially small developers and community-based organizations—need significant, personalized assistance with designing, siting, and funding their projects, as they often do not have the necessary time or expertise on staff. Smaller developers often need support understanding the process and requirements for securing private capital for projects, which can be complex and costly. Some states suggested an on-demand resource for answering community solar questions, such as a help line or a repository of trusted experts or developers.

Resources, Training, and Toolkits

- States shared that one of their most prominent needs is educational resources for legislators, community leaders, and the public. These resources explain how community solar systems work and their benefits for states, communities, and subscribers. States highlighted that any resources developed should be created for multiple audiences using terminology that can be easily understood.

- States requested customizable toolkits, available in multiple languages, to help them design education and outreach, determine ideal market structures, educate state legislators on best practices in community solar, and monitor the impact of programs.
- Additional state needs include a consumer-facing database that lists community solar projects with available subscriptions, a repository of legitimate and verified developers, a template for an effective community solar outreach campaign, educational resources that explain the benefits of community solar, subscription management tools, and project siting tools. States, especially those in the early stages of development, also indicated that they would benefit from standardized definitions for community solar, LMI households, disadvantaged communities, minimum bill savings required for LMI households, and other equity-focused metrics, in order to track community solar progress and impacts. States making their own determinations on how to define equity metrics can have implications for how many people are eligible for a particular program or incentive.

Funding

- States also expressed a strong need to increase LMI household access to community solar through funding mechanisms like credit backstops, solar guarantee funds to cover acquisition costs and de-risk LMI-focused projects, and bundling of low-income assistance resources (food, transportation, childcare, etc.). States need access to federal grants and other funding opportunities that prioritize subscribers from LMI households, workforce development, apprenticeship opportunities, and increased community resilience. Small developers and community-based organizations—especially those without the tax appetite to take advantage of tax credits—need access to upfront capital to demonstrate equity and cover pre-development costs.

Thank You

- The U.S. Department of Energy Solar Energy Technologies Office thanks all state government representatives who participated in the NCSP convenings and welcomes future collaboration. The information and suggestions shared will be used to inform NCSP's programming, including the new States Collaborative, which launched in February 2022 to support state community solar deployment and help the NCSP reach its goal of expanding equitable access to community solar.

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For more information, visit:
energy.gov/communitysolar

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