

Scaling Solar Equitable Finance: Working Session Summaries

High-Level Takeaways

- Goals for scaling solar for low- and moderate-income (LMI) communities include not only climate-positive effects but also achieving energy affordability and cost certainty, wealth creation, quality jobs and economic development. These benefits are not a given that occurs with any solar project and must be pursued with intentionality.
- As complex and difficult as it is, the current solar development and finance system works for large, utility-scale projects; homeowners with good credit; and others, particularly those in high-cost electricity areas with progressive policies.
- Low-income, under-resourced, and communities of color struggle to access the many benefits of solar, because of high transaction costs, real or perceived credit risk, inadequate sites, lack of technical knowledge, and lack of affordable, responsible capital.
- In spite of these challenges, innovative, mission-driven developers and financiers are successfully deploying strategies to provide solar to disadvantaged communities, including manufactured housing communities and affordable multifamily housing.
- The policy environment plays a key role in enabling or frustrating capital, so it is important to “get the policy right.”
- The existing federal policies that support and shape the solar finance market strongly favor large solar projects and well-resourced developers and owners; changes are necessary for equitable federal support for all.
- State and local regulatory frameworks are instrumental in making solar for all feasible - or in keeping it out of reach.
- Because of its structure, community solar is a promising strategy for providing solar to particularly difficult to reach populations, particularly low-income renters.
- Ownership matters, both ownership of the solar assets and the building or land where they are installed. Some group participants cautioned that ownership does come with risks, however, that must be carefully weighed.
- Far from being an amenity, storage is essential for resiliency—particularly in vulnerable communities such as Puerto Rico.

Session 1: Solar for Manufactured Housing

April 15, 2021

Session Moderator: Kevin Porter, ROC-USA

Session Presenters: Warren Leon, Clean Energy States Alliance; and Jeannie Oliver, Vermont Law School Energy Clinic

Presentation Highlights:

- ROC-USA has been helping residents of manufactured housing parks to purchase them and form Resident Owned Communities (ROCs). There are 270 such communities to date across the country, with over 18,000 homes. Owning the real estate helps residents to exercise greater control over decisions and capture benefits of solar projects. ROC-USA believes that going forward, leasing land to a solar developer may be a likely avenue for ROCs to explore. For communities with limited land, energy storage projects may be attractive. However, advocacy and education for both state legislatures and public utility commissions is needed to ensure that energy funding programs consider these types of communities and projects.
- Clean Energy States Alliance (CESA) has prepared a report on [Solar for Manufactured Homes](#). Nationally, manufactured housing provides important unsubsidized affordable housing stock, making up over 6% of all homes nationally. Scaling solar for manufactured housing shares certain challenges with other low- and moderate-income markets, including the up-front cost of the PV system and the inability of low-income households to use federal tax credits. Additionally, many roofs on manufactured homes cannot support a rooftop PV system, and residents of many manufactured homes do not own their land. Resident-Owned Communities are one opportunity to provide solar to manufactured housing, but additional strategies to pursue also include developing community solar arrays to which manufactured housing owners can subscribe; exploring third-party ownership, on-bill financing, and other special financing options; and supporting efforts to incorporate solar into new manufactured homes.
- Vermont Energy Law Clinic has been helping Resident-Owned Communities go solar using two strategies: a Power Purchase Agreement (PPA) model, in which the community agrees to buy power from a developer who owns the solar array; and a Turnkey model, in which the community purchases the solar array outright from the developer upon completion. In both cases, the solar projects are interconnected with the utility such that the community benefits from net metering of the electricity, and the projects are structured to result in a reduction of the monthly lot rent. With the Turnkey model, the Law Clinic has also been able to sometimes secure a low- and moderate-income “adder” from the utility that provides an additional stream of benefits to residents. Lessons learned from their experiences include:
 - To successfully serve low- and moderate-income communities, regulatory support is key, including adequate net metering rates
 - The Investment Tax Credit “needs rethinking” as it has proved difficult for Resident-Owned Communities to truly benefit from this government subsidy. Transaction costs to access the credit are so high that direct ownership of the solar array can be cost-competitive, even foregoing the credit.
 - Even modest project savings on the order of \$20 per month have been meaningful for residents.

- No one-size-fits-all model has worked for all communities; flexibility in approach has been required.

Key Takeaways from Group Discussion:

- Providing a grant in lieu of the Investment Tax Credit would make it dramatically easier to serve this market, eliminating transaction costs that can kill a project. ITC reform was a top recommendation of the group.
- On the debt side, a guarantee program – such as USDA REAP – would make it much more likely for lenders to deploy capital. REAP grants also can help with the significant planning and community engagement costs to work with Resident-Owned Communities. Making the REAP program more broadly available (or starting a similar guarantee program at DOE that could be more broadly available) was another top recommendation of the group.
- Research on utility bill payment performance in different types of manufactured housing contexts could also help to convince investors of solar project investability in this space.
- State and local governments should look at strategies to streamline permitting processes and costs if they would like to encourage these kinds of projects.
- Contrary to popular belief, manufactured houses do tend to maintain or appreciate in value. Potential lenders or investors may mistakenly believe these houses are a depreciating asset and perceive higher risk. Data also shows that these borrowers are pretty reliable. Leveraging such data can demonstrate the worthiness of these projects and give a more realistic sense of risk.
- Pooling a series of projects together could be helpful to accessing financing, including tax equity.

Session 2: Solar for Affordable Multifamily Housing

April 15, 2021

Session Moderator: Melanie Santiago-Mosier, Vote Solar

Session Presenters: Esther Toporovsky, New York City Housing Partnership; and Ryan Sheehy, Fleet Development

Presentation Highlights:

- Esther Toporovsky highlighted key challenges for affordable housing to invest in renewables. These challenges are greatest for existing assets. They include that energy investments are small and can't compete with real estate development deals for owner attention; energy grant opportunities are hard to access; owners lack experience performing energy upgrades; and complicated capital waterfalls make it difficult for housing owners to capture savings from energy investments.

- To these challenges, Ryan Sheehy added that tenant-paid utilities can create multiple challenges: there is no physical way to connect and offset tenant usage; savings go to operating subsidy providers (like USDA and HUD) instead of paying for the system; and buildings cannot participate in Energy Star or Better Buildings. Low-Income Housing tax credit (LIHTC) investors can be concerned with possible changes to the basis on which those credits are calculated, and projects including solar may also struggle to compete for LIHTCs due to higher upfront construction costs. These disincentives must be eliminated to avoid creating an “all risk, no reward” scenario for the developer.
- Toporovsky reported that the NYC Housing Partnership has had success with a portfolio approach to financing multiple multifamily solar projects that are structured to look and feel like a development deal with meaningful returns. For deals to work, grants and incentives need to act as a source up front as part of the capital stack, and long-term, flexible debt is needed that does not have to be collateralized by real estate.

Key Takeaways from Group Discussion:

- Broadly, group members noted that subsidized affordable housing is both a complex field and only a part of the overall multifamily landscape; clear policies are needed that recognize this complexity including both cross-cutting and tailored solutions as appropriate (e.g. for regulated, unregulated, and naturally occurring affordable housing)
- The importance of driving actual benefit to both tenants and building owners (and not just solar developers) was also emphasized. Policies should enable buildings to truly reduce energy costs and adopt systems that will integrate not just solar but efficiency, heating system electrification, and storage. The rapid pace of technological change – and resulting possibility of a lower overall rate environment in the future – needs to be accounted for to de-risk projects that seek to create lasting benefits.
- Community solar structures with virtual net metering should be considered as an option for delivering solar to multifamily properties
- Small group discussions supported a series of **policy solutions** proposed by Sheehy, including:
- **Provide a grant in lieu of the solar tax credit**, in order to reduce the enormous transaction costs that have killed the economics of many deals
 - A tiered system could be used to increase support for certain types of projects - up to a 100% grant for solar on housing with USDA Rental Assistance or HUD Housing Assistance Program contracts, given that the federal government could realize immediate savings by doing so
- **Provide a guarantee program** for solar on multifamily housing to avoid the need to place liens on the real estate. This is particularly important for multifamily housing that receives federal funding, as it is very challenging to place a lien on these buildings.
- Allow USDA **Rural Energy for American Program (REAP) grants** to be used by multifamily LLCs.
- **Provide additional gap financing programs at the national level**, creating a more consistent, predictable and usable playing field. Such programs should be simple to

design, implement, and use, which suggests that resources beyond a national Renewable Energy Credits program should be explored.

- **Modify the LIHTC process to create incentives for projects incorporating solar energy**
- **Issue federal level guidance** to facilitate the process of federally-supported projects to go solar
- **Update the utility allowance system to incentivize clean energy projects** in federally-supported projects

Session 3: Equitable Community Solar

April 22, 2021

Session Moderator: Lynn Benander, People's Solar Energy Fund

Session Presenters: Ajulo Othow, EnerWealth Solutions; Emily Robichaux, Groundswell; Nicole Steele, US. Department of Energy

Presentation Highlights:

- Lynn Benander discussed the work of the People's Solar Energy Fund, which seeks to finance community-led and community-owned solar projects in LMI and BIPOC communities. The Fund is working on a \$75 million pipeline of solar projects.
- Ajulo Othow discussed the work of EnerWealth Solutions, which has so far developed four solar + storage installations that combine community solar with battery storage to reduce peak load costs. EnerWealth seeks to help Black farm owners to retain family land through lease payments, as well as to create workforce opportunities.
- Emily Robichaux provided background on Groundswell, which has so far built four community solar projects that include LMI customers by created a class of "Empowered" LMI subscribers who receive solar at no cost, alongside standard paying subscribers.
- Groundswell's [LIFT Solar Everywhere research](#) has identified barriers to LMI-inclusive solar financing and deployment:
 - Capital stacks are varied, highly place-based, and time sensitive
 - Pre-development expenses, scale, and transaction costs are barriers for LMI-inclusive developers
 - Relationships, innovative financing, and persistence are needed for LMI inclusion

Key Takeaways from Group Discussion:

- A key challenge is that most tax equity investors are still wary of Community Solar structures, especially when offtakers are low-income. Additionally, third party costs associated with tax credit monetization are burdensome, especially for small projects. A grant program instead of the solar tax credit would enable more projects focused on community benefit to move forward. In the absence of a grant-in-lieu program, an

alternative could be to try to entice large tax equity providers to pledge a portion of their investing flow into a shared facility that would be dedicated to LMI projects.

- Credit enhancements or “any kind of back-stop to ensure a reliable subscriber base” have an important role to play, on both the debt and tax equity side.
- Other key needs include funding for sponsor equity for community organizations; predevelopment support; and training available for communities to work with developers.
- There were a variety of perspectives shared on community ownership. It will be important to ensure that community groups benefit from ownership over time and that they have support to manage any risks that arise.
- The policy environment plays a key role in enabling or frustrating capital, so it is important to “get the policy right.” Issues around interconnection and more generally working with utilities have become a critical challenge in a range of states. There is a need to put together best practices across states to put together a policy guidebook. Consistent policy from state to state would also make it easier for investors.
- Aggregation of smaller projects into portfolios could help attract interest from investors – who may be attracted in particular to projects serving low-income communities and communities of color due to growing interest in racial equity and economic justice.

Session 4: Distributed Solar and Storage for Low-Income Communities

April 22, 2021

Session Moderator: Olivia Nedd, Vote Solar

Session Presenters: Javier Rua, Puerto Rico Solar and Energy Storage Association; Seth Mullendore, Clean Energy Group

Presentation Highlights:

- Clean Energy Group’s [Resilient Power Project](#) has conducted a variety of research and pilot efforts to increase investment in solar plus storage. Some of the key financing obstacles observed in their work with providing solar and storage for critical community facilities (such as affordable housing and health care centers) include:
 - Market limitations for battery storage, which does not have the developed market and rich array of incentives that solar has
 - Battery storage is newer technology with more complicated economic benefits than solar alone
 - Battery storage remains expensive, with economics that are very dependent on state regulatory environments and incentive offerings
 - For nonprofit community organizations, there can be challenges qualifying for affordable loan terms,
 - Technical assistance needs can be substantial, and time is required to identify the right ownership option from multiple alternatives.

Some impactful strategies have included the provision of loan guarantees, such as the Kresge Foundation’s “Financing Resilient Power” initiative, and strategies to aggregate projects into portfolios where developers can realize economies of scale. Additionally, utility-run battery storage programs in some states have improved project economics by helping customers to monetize the grid services that battery storage can provide.

- Javier Rua highlighted the importance of solar plus storage for resiliency, as was laid bare by Puerto Rico’s experience in the wake of Hurricane Maria. Challenges to expanding solar plus storage on Puerto Rico include an inability to access the US federal solar tax credit, which mirrors the situation both low-income households and nonprofit entities face on the mainland US. Implementation of the pro solar + storage legal framework on the island has been haphazard, perhaps due to utility bureaucracy and ineffective governance, and underscores the importance of a stable, predictable and forward-looking policy environment to achieve scale.

Key Takeaways from Group Discussion:

- As batteries are newer technology, their cost makes it harder to make deals pencil out. Incentives for energy storage are needed to make it more accessible.
- Permitting and interconnection issues are key drivers of both costs and delays; decreasing them through smoother processes will be key to lower reliance on subsidies. Initiatives such as [SolarAPP](#) are starting to have a positive impact here.
- Low-income communities cannot afford to take on regulatory risks, of which there are many – for example, around Renewable Energy Credit Pricing, Alternative Compliance Payments, net metering pricing, and other potential changes to utility revenue models. Certainty and consistency (over time and across states) is needed in the regulatory environment, making advocacy in this area a key priority. To the extent regulatory certainty can’t be achieved, financial backstops may be needed to protect both investors and consumers.
- Technical assistance and predevelopment capacity needs to be vastly scaled up.
- Communities may not know about energy storage – there is a need to build trust and credibility with communities and help people see how they could benefit.
- Replacing the tax credit with a grant-in-lieu program would eliminate the cost, complexity, time and risk of attracting tax equity investors. It is important for such a program to be directly available to nonprofits and municipal entities.
- Electric Vehicles have the potential to change the game by making it easier to acquire large amounts of storage.
- Solar ownership is not for everybody – it is important not to put people in situations where they might bear undue financial risk.