



New Ownership and Financing Options for Solar+Storage in Low-Income Communities

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Now that installations of solar photovoltaic (PV) coupled with battery storage (solar+storage) are more common in commercial markets, it is important that disadvantaged communities not be left behind.

One of the reasons for this lag in market uptake of clean energy in low- and moderate-income (LMI) communities is a persistent financing gap.

Current models of financing clean energy systems do not sufficiently serve low-income communities, if they serve them at all. Reasons for this include a lack of flexible capital and difficulty accessing tax equity markets. They also include nonprofit property owners being perceived by lenders as having limited borrowing capacity.

As a result, solar+storage projects are vastly underrepresented in affordable housing and in critical community facilities across the country. The sad irony is that this lack of financing prevents the types of solar+storage projects that could reduce utility bills and create more resilient power systems for people who need the benefits the most—and who

have been disproportionately impacted by heavily polluting energy sources.

What is needed to overcome this financing gap and to deliver the benefits of resilient power to LMI markets? A focus for many community leaders has been to advocate for direct ownership of clean energy systems by low-income residents and the organizations that serve them.

For good reason, ownership is a key equity issue for LMI advocates to pursue. The historical lack of ownership of energy assets by LMI communities leads to a compelling case for their future control and ownership of these resources so they can directly benefit from and participate in the clean energy economy.

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Direct ownership can provide the greatest control over a solar+storage system's various value streams. These streams range from utility bill savings to potential revenue from grid services to back up power during grid disruptions.

However, with these views and goals in mind, it is also wise to explore the full range of options available for communities to share in the equitable benefits of solar+storage systems. Toward that end, and with recognition of the potential risks and barriers facing the direct ownership approach, Clean Energy Group has written a new paper, "Owning the Benefits of Solar+Storage: New Ownership and Investment Models for Affordable Housing and Community Facilities" (available at www.cleangroup.org). It details additional ownership models that may represent good alternative approaches for some communities.

Much of this paper is based on a counterintuitive assumption—that many of the most effective "ownership benefits" of solar+storage may be achieved through non-ownership models. The report starts with an examination of the immediate direct ownership model as a baseline and then explores alternative models.

The five models explored in this paper are:

1. **Immediate direct ownership:** The solar+storage system is purchased and owned outright by the property owner and the owner retains the greatest flexibility and control over the economic and use benefits of the solar+storage system. All of the net metering, SRECs and utility bill savings from the solar and energy storage system are retained by the owner. By owning the solar+storage system, the property owner can retain the maximum flexibility in adjusting how

the system is configured to access different cost savings and revenue streams as policies and market rules evolve in the years ahead. Though direct ownership of solar+storage systems allows owners to retain all of the utility bill and revenue generated from these systems, purchasing solar+storage systems outright with cash and loans is not always feasible.

2. **Third-party ownership flip:** A third party initially owns the solar+storage assets until the tax equity investor's tax incentives have been fully used and the tax equity investor's required return on investment has been achieved. At that point, ownership of the project assets is flipped to the property owner.

This model allows a nonprofit property owner to ultimately own the solar+storage system and enables the project to raise tax equity investment and to take advantage of the investment tax credits (ITCs) and modified accelerated cost recovery system (MACRS) benefits. This model is valuable to for-profit property owners as well.

3. **Third-party ownership flip using an affiliated entity:** As with Model No. 2, this ownership structure has tax equity investors owning the solar+storage assets until the tax benefits have been fully used and then ownership of the assets flips. But instead of the assets being transferred to the housing developer/nonprofit property owner, they are transferred to an affiliated public purpose entity created by a nonprofit entity or other intermediary. The affordable housing owner/developer and the affiliated entity could serve as co-developers for the solar+storage project, for which they share in the development fee. Construction and permanent financing to leverage the tax equity investment for the project can be obtained by either the owner/developer or the affiliated entity. The affiliated entity could provide



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the same project development and management services to multiple affordable housing owners. It could create standardized deal and financing structures and develop pro forma documents that can be used repeatedly for subsequent rounds of financing.

4. **C-PACE financing with third-party ownership:** Property Assessed Clean Energy (PACE) financing secures the loan payments through a priority lien assessment on real estate property, providing third-party owners and/or tax equity investors with long-term financing for solar+storage projects. For third-party owned solar+storage projects, it can provide additional security to long-term debt sources and tax equity investors. State and local incentives and favorable financing—including 20-year tax credit bond financing such as qualified energy conservation bonds (QECBs)—can be used to reduce the cost of financing and increase the project's economic benefits. These economic benefits are then passed on to the property owner through improved power purchase agreement (PPA) pricing and terms.
5. **Utility ownership or third-party ownership under a utility-contracted payment-for-services agreement:** The utility is indifferent to whether the project is located adjacent to an LMI community property as long as energy demand congestion is relieved in key grid circuits. When the grid is down, the solar+storage system is available to provide resilient backup power for adjacent critical energy loads and public services. In this model, a third-party provider would own the solar+storage system and sell energy, capacity or ancillary services from solar PV, other distributed generation and battery storage into wholesale markets or under payment-for-services utility contracts. This may involve aggregating multiple battery storage systems to create larger energy services offerings, something a single property

owner or business may not otherwise be able to do. This ownership model has been deployed in commercial markets and could be extended to multifamily affordable housing and community facilities.

In many low-income communities, property owners of housing and community facilities may decide that they want to directly own solar+storage systems. That remains an option for those entities that have the resources and financial capacity to undertake this ownership option.

But even for this group of property owners, there are many early market challenges that affect investors and conventional lenders' willingness to provide financing for solar+storage projects. Among these are the lack of standardized deal and financing structures, the need for more performance data, and the lack of robust and predictable pipelines of conforming projects.

For these and other reasons, it is important to expand the range of ownership and financing options for low-income communities beyond direct ownership and standard PPA and leasing models for solar+storage technologies. The ownership and financing strategies outlined above may be able to provide many of the economic and other benefits of direct ownership while overcoming some of the risks and barriers that direct ownership may entail for many project developers.

These options might or might not be preferable to immediate direct ownership, given the many circumstances that affect energy technology ownership and financing. These new avenues have not been fully tested in LMI markets with solar+storage projects. They are possibilities worth considering.

Much more work is needed to put some of the new models into practice, including a review and reaction

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from the environmental justice community and others to ensure that these models expand rather than narrow the options for achieving the equitable benefits of solar+storage.

National Housing Trust and Urban Ingenuity. Slides and a recording of this webinar are available at www.cleanegroup.org/webinar/new-financing-options-solarstorage-low-income-communities. ❖

To continue this conversation, Clean Energy Group hosted a webinar March 29 with speakers from the

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