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Bringing the Benefits of Solar Energy to Low-Income Consumers

A Guide for States & Municipalities

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SUSTAINABLE SOLAR EDUCATION PROJECT





ABOUT THIS GUIDE AND THE SUSTAINABLE SOLAR EDUCATION PROJECT

Bringing the Benefits of Solar Energy to Low-Income Consumers: A Guide for States & Municipalities is one of six program guides produced by the Clean Energy States Alliance (CESA) as part of its Sustainable Solar Education Project. The project aims to provide information and educational resources to help states and municipalities ensure that distributed solar electricity remains consumer friendly and its benefits are accessible to low- and moderate-income households. In addition to publishing program guides, the Sustainable Solar Education Project is producing webinars, an online course, a monthly newsletter, and in-person training on topics related to strengthening solar accessibility and affordability, improving consumer information, and implementing consumer protection measures regarding solar photovoltaic (PV) systems. More information about the project, including a link to sign up to receive notices about the project's activities, can be found at www.cesa.org/projects/sustainable-solar.

ABOUT THE U.S. DEPARTMENT OF ENERGY SUNSHOT INITIATIVE

The U.S. Department of Energy SunShot Initiative is a collaborative national effort that aggressively drives innovation to make solar energy fully cost-competitive with traditional energy sources before the end of the decade. Through SunShot, the Energy Department supports efforts by private companies, universities, and national laboratories to drive down the cost of solar electricity to \$0.06 per kilowatt-hour. Learn more at www.energy.gov/sunshot.



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Contents

SECTION 1

Executive Summary 5

6 Summary of Solutions, by Category

7 Summary of Recommendations

SECTION 2

Situation 9

9 Problems

9 Opportunity

11 Customer Barriers

12 *Box 1: The Correlation between Low Income and Low Credit Scores*

14 Policy Barriers

SECTION 3

Recommendations17

17 Design Principles

18 State Options

20 *Box 2: Solar Workforce Development Programs*

22 Market Segmentation

23 Sample Scenarios

SECTION 4

Discussion of Solutions 24

24 Other Research

SECTION 5

An Overview of Policy and Program Options 30

30 Compensation Mechanisms

Net Metering

Community Solar

Hosting Solar

- 33 Direct Incentives**
 - Tax Credits and Rebates
 - Renewable Energy Certificates (RECs)
 - EPA’s Clean Energy Incentive Program
 - Prizes and Other Incentives
- 38 Financing policies**
 - On-Bill Repayment
 - Property-Assessed Clean Energy (PACE)
 - Pay As You Save
 - Compensating for Low or No Credit Scores
 - Third-Party Ownership Models
 - Group Purchase Programs (Solarize)
 - Crowdfunding
 - Federal Economic Development Programs
 - Green Banks
 - Place-Based Investments
 - Reduced-Cost Solar Development
- 57 Adapting Current Low-Income Energy Policies to Solar**
- 60 Using Solar for Low-income Support Services**
 - Public Housing
 - Section 8 (Housing Choice Vouchers)
 - Solar Infrastructure in Low-Income Communities

SECTION 6

- Conclusion 63**
- Endnotes 64**

SECTION 1

Executive Summary

The declining cost of solar energy is creating opportunities for all Americans to save money on their energy bills. And no one benefits from energy savings more than low-income consumers, who pay a much higher portion of their income for energy than middle- and high-income consumers.

But being poor creates barriers to accessing solar power and its economic benefits. Low-income consumers lack sufficient savings that can be used to buy solar systems, and they may have low credit scores or a lack of credit history that may impede their ability to finance a system. They are often renters, or live in multifamily housing, without ownership of their roof.

Many programs and policies that encourage solar deployment rely on leveraging public dollars with private investment, where a small contribution of public funding can trigger



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a larger contribution from the market. A 30 percent tax credit on a solar investment, for example, is matched by a 70 percent investment by a homeowner. But low-income consumers are less able or likely to respond to this kind of offer, so some policy incentives fail to reach low-income populations. One alternative is to provide a greater portion of public funding directed toward low-income consumers, but that means limited public budgets don't yield as much private investment or as many solar projects.

Policymakers have been trying a range of approaches to bring solar to low-income consumers. This guide surveys the field and recent studies to give a sense of what is being tried, and what could be tried. It examines what has and hasn't been working, and what factors determine whether a given policy or program might work in a given circumstance.

There are many existing government programs and policies aimed at reducing poverty, providing housing, and promoting clean energy. These provide a strong starting point for how to bring the benefits of solar power to low-income households. But there are also many new and emerging ideas, including government policies and programs, new business approaches, and philanthropic and volunteer initiatives.

SUMMARY OF SOLUTIONS, BY CATEGORY

Much of the activity around low-income solar access has been aimed at *financing* to solve the first-cost barrier that low-income households face. Financing ideas either adapt existing techniques or develop new approaches. Property Assessed Clean Energy (PACE), Pay As You Save (PAYS), and third-party ownership arrangements are just a few of the many financing ideas discussed in this paper.

There are also many government policies and programs that are being adapted or created for low-income solar to make it more affordable. Some of these are *compensation mechanisms*, which allow customers to capture the full value of their solar investment. The most common examples are net metering for solar generators located on the customer's side of the meter, and virtual net metering, which enables community solar by tracking output from off-site generation. Compensation mechanisms are distinct from *direct incentives*, whereby government policies provide explicit financial or other inducements.

Energy assistance programs are also starting to see the value of low-cost solar as a way to reduce energy burdens, often in combination with energy efficiency measures. The Low-Income Home Energy Assistance Program (LIHEAP) and Weatherization Assistance Program (WAP) are starting to include solar as cost-saving measures. Many states have existing utility rate discount or bill payment programs that could harness solar to generate savings for consumers.

While much attention focuses on solar's direct benefits to low-income customers by reducing energy bills, solar can also provide indirect help by cutting costs for *low-income support services*. The U.S. Department of Housing and Urban Development (HUD), especially, is starting to use solar to improve energy security for the millions of low-income Americans it serves, while saving taxpayers some of the \$5 billion HUD spends annually on utility bills. By installing solar technologies, shelters, food kitchens, churches, and service organizations of all kinds could redirect energy savings toward their primary mission.

SUMMARY OF RECOMMENDATIONS

This guide is primarily for policymakers interested in bringing the benefits of solar to low-income consumers and communities. While this guide makes some policy and program recommendations, it recognizes that not all policymakers face the same constraints, policy environments, stakeholders, economics, and opportunities.

To be helpful to all readers, regardless of their specific situation, the guide suggests some design principles for developing a successful low-income solar program. It highlights some options that seem especially relevant, universal, or promising; and it describes a simple segmentation of audiences—homeowner, tenant, and support service—and the implications of reaching each of them. Finally, the guide presents several scenarios that may apply to states in certain situations.

Of course, the recommendations presented in this guide may not be best in any given circumstance. The lengthy discussion of other solutions is intended to help guide possible alternative actions.

In short, successful low-income policies and programs share some design principles: they are tailored to low-income consumers; they are cost-effective and financially sustainable; they have measurable results; and they are flexible enough to adapt to changing conditions and new learning.

The guide offers several suggestions for policies and programs that seek to expand solar to low-income consumers:

- Leverage existing state energy policy to support low-income solar deployment, such as by adapting net metering, portfolio standards, and financial incentives for renewables.



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- Incorporate solar into low-income energy efficiency programs to reduce implementation costs and provide deeper savings for households with very high energy burdens.
- Adapt existing housing and anti-poverty programs to include solar, such as LIHEAP and WAP, public housing, and economic development incentives.
- Set up a financial vehicle that can develop, test, and deploy innovative financial strategies and provide leadership and technical expertise to other agencies.
- Promote volunteerism to provide low-cost solar to low-income communities, such as new solar homes built by Habitat for Humanity—and reinforce it through supportive incentives and policies.
- Partner with trusted allies in reaching out to low-income communities to ensure greater buy-in and program enrollment.
- Ensure any low-income solar policies and programs will actually provide tangible benefits to low-income households and communities.

In choosing which policy approaches to take, it may first be useful to consider the specific solar consumer you are trying to assist, and the current policy and market environment.

Not all low-income solar customers are the same. They face different challenges and may need different solutions or different combinations of solutions to overcome them. For example, low-income homeowners can see clear benefits from owning solar systems, but may face first-cost hurdles. Tenants of apartment buildings may not be able to own a rooftop system, but they may be able to benefit from a flexible community solar program. Low-income housing landlords may be able to benefit from tax credits, energy savings, and increase in property value from going solar but may be unwilling to share those savings with tenants. Groups that provide support to low-income communities face their own hurdles and opportunities. As nonprofit or governmental agencies, they may enjoy low-cost financing, but may not be able to access tax credits and other incentives.

The very definition of “low-income” varies widely, from one government agency or jurisdiction or program to another. Some programs, for example, include all households earning less than 60–80 percent of the area median income as low income, while others use income relative to the federal poverty level. Definitions can have a significant impact on program design and implementation. Being consistent with other programs may be important, or it may be helpful to target particular customer segments within the low-income customer class. “Moderate-income” households may best be served by different programs and policies tailored to fit their needs. This guide largely avoids these definitional complications to provide general guidance that can be adapted to specific situations.

Lastly, to help inform programmatic options, the guide presents a few sample scenarios that state and local agencies may face when thinking about low-income solar program development. These scenarios vary by the state policy environment for renewables, the type of audience to be reached, energy costs, and other low-income energy policies.