



Community Solar for Low-Income and Disadvantaged Communities

Solar for All Greenhouse Gas Reduction Fund Program
Design Options for States – July 2023

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ABOUT THIS PROJECT

With the passage of the Inflation Reduction Act (**IRA**), federal funding is now available for states to launch programs that provide solar and solar+storage to disadvantaged communities and transform the low- and moderate-income (**LMI**) solar market. The Clean Energy States Alliance (**CESA**) has produced this document and other resources that can be used by states and other relevant stakeholders to design and launch programs utilizing the U.S. Environmental Protection Agency (**EPA**)’s [Greenhouse Gas Reduction Fund \(GGRF\) Solar for All competition \(Solar for All or the Competition\)](#) as well as relevant IRA tax credits. CESA’s documentation includes three types of LMI solar and/or solar+storage programs:

- **Single-Family Homes.** CESA produced documentation relevant to single-family homes programs, such as [a guidance note](#) on LMI solar leases or power purchase agreements programs for states and [a standard request for proposals](#) for public agencies to use in selecting private sector partners to implement such state programs. Additional documentation relevant to consumer protection is forthcoming and will be made available here: <https://www.cesa.org/projects/scaling-up-solar-for-under-resourced-communities/resources/>
- **Community Solar.** CESA produced this document presenting how three options for community solar designs could be used by states within their Solar for All applications.
- **Affordable Housing Multifamily Solar and Solar+Storage.** A document offering a simple multifamily affordable housing solar and solar+storage program design for states is forthcoming and will be made available on our website later this summer.

In addition to producing these resources, CESA offers technical assistance and organizes state convenings to accelerate learning about LMI solar across the country. We welcome all states to participate.

Please refer to our [website](#) for the most up-to date information on these topics. Government officials and green bank staff can sign up for CESA’s Solar for All updates by completing this form: <https://forms.office.com/r/FxusQA1sk5>

For questions about this project or this document, you may reach out to Vero Bourg-Meyer, CESA Project Director for Solar and Offshore Wind at Vero@cleanegroup.org.

ABOUT THIS DOCUMENT AND IRA PROGRAMS AND REGULATIONS

This note is part of several resources produced by CESA in the summer of 2023 to assist states and other relevant stakeholders in designing and launching LMI solar and

solar+storage programs (see above). This document presents information relevant to community solar design options.

To maximize the funding opportunities afforded to states and other relevant stakeholders through the IRA, this document aims to provide options that will comply with or take advantage of the following:

- (1) The [Notice Of Funding Opportunity \(NOFO\)](#) issued by EPA on June 28, 2023, pertaining to Solar for All;
- (2) The [Notice of Proposed Rulemaking \(NOPR\)](#) relevant to the tax credit bonus program under [26 U.S.C § 48\(e\)](#) (the **Low-Income ITC Adder**); and
- (3) The preliminary rules relevant to [26 U.S.C § 48\(a\)\(14\)](#) (the **Energy Community ITC Adder**).

As changes are made, program designs adapted to local circumstances, and clarifications offered by federal agencies, we **strongly encourage** the users of this document to thoroughly familiarize themselves with the NOFO, NOPR, and relevant guidance and to not rely solely on the information provided in this document. We have made our best efforts to be thorough.

HOW TO USE THIS DOCUMENT

This guide is available for use by all stakeholders interested in learning more about a few select options for community solar designs that can be proposed to EPA as part of a GGRF Solar for All application. It was designed with states as the primary audience, but it will likely be useful for other eligible applicants under GGRF as well.

This guide can be used in states that do not already have community solar policies and programs in place and in states that wish to expand their current program offerings with new strategies to reach more customers or provide additional benefits to disadvantaged communities. Information about how to use this document in the context of a Solar for All application is available below in Section 1.2 (*How to Use this Guide*).

ACKNOWLEDGMENTS

We thank our philanthropic funders for their generous support of this work and for making the production of this guidance possible.

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Section 1. Introduction

With the passage of the Inflation Reduction Act (**IRA**), federal funding is now available for states to launch programs that provide solar and solar+storage to disadvantaged communities and transform the low- and moderate-income (**LMI**) solar market. The Clean Energy States Alliance (**CESA**) has produced this document for states and other relevant stakeholders to design and launch programs utilizing the U.S. Environmental Protection Agency (**EPA**)’s Greenhouse Gas Reduction Fund (**GGRF**) Solar for All competition (**Solar for All** or **the Competition**) as well as relevant tax credits, as enhanced in the IRA.

In this guidance, the authors present three options for community solar designs for states to consider including in their applications to the Solar for All competition.

1.1 About the Solar for All Competition

You can find a summary of key features of the [Notice of Funding Opportunity for the Competition](#) (**NOFO**) below. Please refer to the NOFO for additional details.

1.1.1 Goals and Application Eligibility

The overall goal of the Competition is to expand the number of low-income and disadvantaged communities that are primed for investment in residential and community solar. The Competition will provide up to 60 awards ranging from \$25 million to \$400 million:

- (1) Up to 56 awards, one to serve each of the 56 states and eligible territories;
- (2) Up to 5 awards to serve American Indian and Alaska Native Communities; and
- (3) Up to 10 awards to serve similar communities across multiple states.

Eligible applicants are states, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands, Indian Tribes as defined in Section 302(r) of the Clean Air Act, municipalities as defined in Section 302(f) of the Clean Air Act, and eligible nonprofit recipients as defined in Section 134(c)(1) of the Clean Air Act.¹

¹ As per the NOFO, an eligible recipient is an organization that meets all of the following requirements: (a) is a non-profit organization; (b) is designed to provide capital, leverage private capital, and provide other forms of financial assistance for the rapid deployment of low- and zero-emission products, technologies, and services; (c) does not take deposits other than deposits from repayments and other revenue received from financial assistance provided using grant funds under this program; (d) is funded by public or charitable contributions; and (e) invests in or finances projects alone or in conjunction with other investors.

1.1.2 Deadlines

EPA will grant awards through a competitive process, with applications due September 26, 2023. Applicants are required to submit a Notice of Intent (**NOI**) to be eligible to participate in the Solar for All program.² Deadlines vary based on applicant type:

Applicant Type	NOI Deadline
States, the District of Columbia, and Puerto Rico	July 31, 2023, at 11:59 PM (Eastern Time)
Territories (specifically, The Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands), municipalities , and eligible nonprofit recipients	August 14, 2023, at 11:59 PM (Eastern Time)
Tribal governments and Intertribal Consortia	August 28, 2023, at 11:59 PM (Eastern Time)

An NOI is required for every application a state anticipates submitting, and applicants may submit as many applications to the Solar for All competition as they chose, as long as they submitted related NOIs.

1.1.3 Use of GGRF Funds and Deployment Timeline

All Solar for All GGRF funds must flow to “low-income and disadvantaged communities,” which are inclusive of the following four categories:³ **(a)** communities identified as disadvantaged by the [Climate and Energy Justice Screening Tool \(CEJST\)](#) map; **(b)** a limited number of additional communities identified as disadvantaged by the [EJScreen mapping tool](#); **(c)** geographically dispersed low-income households; and **(d)** properties providing affordable housing.⁴

Note that the Justice40 Initiative (**Justice40**) directs EPA to ensure that “at least 40% of the overall benefits from certain federal investments in climate, clean energy and other areas flow to disadvantaged communities,” as defined by CEJST. States will be required to justify compliance with this requirement.

² Refer to Section I.F: Required Notice of Intent and Section III. Eligibility Information of the [NOFO](#) for additional information about NOI requirements and applicant eligibility.

³ See pgs. 10-12 of the NOFO for additional information.

⁴ Additional details are available in Section 2 (*Eligibility*) below.

EPA anticipates it will announce its selection decisions in March 2024 and plans to issue awards by July 2024. All activities funded with the initial grant award must be completed within the negotiated program performance period of up to five years.⁵

1.2 How to Use this Guide

This guide offers insights into how states can design and launch Solar for All community solar programs that benefit disadvantaged communities and LMI households. There are many available models of community solar throughout the country, but not all will meet the goals of the Solar for All competition or score well under the NOFO criteria.

To streamline design choices and simplify the Solar for All application process, this guide presents three community solar models, with a few variations, that states and territories could use to shape their applications.

These are (a) the Subscription Model, (b) the Ownership Model, and (c) the Energy Assistance Model.⁶

They are further detailed below in this guide. These are proven models that we believe align with the goals of the Solar for All competition. Read on to understand how the guide is structured and how to use the information presented in your application to the Competition.

- **Resources.** Each model description below is accompanied by references to existing program examples and is immediately followed by a discussion of the model's strengths and weaknesses as they relate to the Solar for All competition's grading criteria, as published in the NOFO. The descriptions follow the narrative that EPA has outlined and that will be used for scoring the Program Strategy Narrative part of a Solar for All application.⁷ It has the following sub-sections:
 - Impact Assessment (20 points total)
 - Meaningful Benefits Plan (30 points total)
 - Distributed Solar Market Strategy (30 points total)
 - Financial Assistance Strategy (30 points total)
 - Project-Deployment Technical Assistance Strategy (20 points total)
 - Equitable Access and Meaningful Involvement Plan (30 points total)

An additional 15 points are available under the Program Planning Timeline and Workplan section of the Program Narrative. This section is not discussed here.

⁵ See Section II.B: Period of Performance of the NOFO for additional information.

⁶ Defined below in Section 3 (*Introduction to Three Models*)

⁷ See Section V: Application Review Information of the NOFO for additional information.

- **Moving across models in this guide.** The Subscription Model section has the most detailed discussion of the elements above, but these elements are mostly common to all three of the models in this guide. To avoid repetitions, the subsequent Ownership and Energy Assistance Models focus on aspects that differ from, or are additional to, the Subscription Model. States that include Ownership and Energy Assistance Models in their application should also consider the elements described in the Subscription Model section.
- **Choice of program.** Three program models are presented here. In their applications, states may consider adopting one or more of the model program elements described below, depending on policy and market conditions.
- **Choice of deployment model.** This guide is a companion to the [CESA guidance for single-family homes solar lease programs](#) referred to above. CESA is also developing an affordable housing multifamily solar and solar+storage guide. Which deployment model to focus on in a Solar for All application (or applications), and whether to focus on one or several programs should be dictated by your state's goals, your housing stock, the characteristics of your disadvantaged communities, and opportunities for partnerships in your state. See Section 1.2.2 (*Getting Started*). Our understanding based on the NOFO is that agencies may choose to combine several programs into a single application or submit them separately.
- **Choice of strategy.** The guide provides models options that can be used in states that do not already have community solar policies and programs in place and in states that wish to expand their current program offerings with new strategies to reach more customers or provide additional benefits to disadvantaged communities.

1.2.1 Aligning with Other Federal Funding Opportunities

This document is not a complete model application. Each state and territory has its own market environment, existing policies and programs, opportunities, and goals. Thus, the document aims instead to provide options that will comply with or take advantage of the following:

- (1) The [NOFO](#) issued by EPA on June 28, 2023, pertaining to Solar for All;
- (2) The [Notice of Proposed Rulemaking \(NOPR\)](#) relevant to the tax credit bonus program under [26 U.S.C § 48\(e\)](#) (the **Low-Income ITC Adder**); and
- (3) The preliminary rules relevant to [26 U.S.C § 48\(a\)\(14\)](#) (the **Energy Community ITC Adder**).

As changes are made, program designs adapted to local circumstances, and clarifications offered by federal agencies, we **strongly encourage** the users of this document to thoroughly familiarize themselves with the NOFO, NOPR, and relevant guidance and to

not rely solely on the information provided in this document. We have made our best efforts to be thorough.

1.2.2 Getting Started

To prepare an application for an impactful community solar program for LMI households and disadvantaged communities, states should at minimum take the following first steps:

- **Use available resources.** We recommend that you read this document and the [NOFO](#) in detail, as well as participate in meetings with other states to learn about their experiences, questions, challenges, and solutions. Regularly consult EPA's [FAQs page](#).
- **Evaluate your housing stock and your customer base.** Whether you decide to go ahead with a community solar program on its own, a community solar program together with other types of solar deployment –e.g., single-family or multifamily third-party ownership programs– or offer one or several program options to support multiple community solar business models in your state should flow from the characteristics of your housing stock and disadvantaged communities locations and preferences. You should ask questions such as:
 - Where are disadvantaged communities located in my state?
 - Are LMI households occupying manufactured homes, other single-family dwellings, multifamily housing properties, affordable housing (single or multifamily)?
 - What is the proportion of LMI renters vs. LMI homeowners?
 - Do answers to these questions vary depending on where these LMI households are located, so that supporting a wide variety of communities in your state would require a multi-pronged (multi-programs) strategy?
 - Are LMI households present in remote rural areas? In urban centers? In suburban areas?
 - Do answers to these questions change when narrowing focus to those households in extreme poverty?
- Several tools exist to investigate the questions above and coordination with your Department of Housing or equivalent is highly recommended. A good place to start is the U.S. Department of Energy (DOE)'s [LEAD tool available here](#) as well as the National Renewable Energy Laboratory (NREL) [SLOPE data viewer available here](#), which you can use to investigate the technical generation potential for LMI residential ground-mounted solar in your state by area median income segment and ownership status.
- **Assess your local policy context including community solar and third-party ownership.** A successful low-income solar program rests on sound solar policy. Investigate all policies and programs that support the development and financing of solar energy in your state. These might include general solar policy such as renewable portfolio standards, renewable energy standards, green banks, existing grants or incentive programs, sales, or tax credits or tax exemptions, but also

community solar-specific policies. Does your state already specifically encourage community solar projects? Does your state already have a state-run community solar program, including supportive policies such as LMI targets and/or compensation structures like virtual net metering? In addition, to account for the variety of business models that can be used to deploy community solar projects, consider whether third-party ownership is enabled.⁸ Lastly, one important and possibly costly part of the deployment process for mid-scale commercial renewables is interconnection, which the NOFO expressly asks states to address in the Distributed Solar Market Strategy part of your application.⁹ The more certainty your state can offer about the policy framework, the more attractive your program(s) will be to potential project owners and/or developers.

- **Map out your market stakeholders.** Whether your state’s electricity markets are regulated or deregulated, you should identify the utilities that will be interested in engaging with your agency on this program. These could include investor-owned utilities, but also municipal utilities and rural electric cooperatives. Map which utility territories overlap with the disadvantaged communities that you anticipate your program will seek to reach. Further, you should research and/or gather data regarding your state’s solar market and market actors, including historical market growth to use as a reference point in your Solar for All application. Which developers have been serving the LMI market segment in your state? Are they seeking to grow their business in your state? What kind of financing support do they need to deliver on your state’s deployment goals? Also identify any large potential customers, such as critical facilities or multi-family housing properties, and any public housing authorities and community action agencies that you may want to bring into the design phase of your program (and implementation later on).
- **Consider how this program will interact with others.** To the extent your state has existing programs for energy efficiency upgrades, solar+storage, home charging stations, and related programs, examine areas where programs could be leveraged, utilized, or aligned, including your local LIHEAP and WAP programs. Further, consider what procedural steps would be required to change existing programs. Can these changes be made in a timely manner?
- **Identify new and existing sources of funding beyond Solar for All.** If you have not already, consider all possible sources of state and federal funding. These could include cap-and-invest programs, public benefit charges, ratepayer funds, or

⁸ As per the 2023 edition of the *50 States of Solar Report* issued by the North Carolina Clean Energy Technology Center, at least 29 states plus Washington D.C. and Puerto Rico allow third-party ownership either fully or partly. Some states may allow leases but not power purchase agreements or vice versa. The status is unclear or unknown in 15 states. Confirm the status of your state with your local public utility commission or, as relevant, with your attorney general’s office.

⁹ For additional resources on interconnection, refer to IREC, “Connecting to the Grid,” <https://irecusa.org/our-work/connecting-to-the-grid/>. Also, *Model Interconnection Procedures 2019*, <https://irecusa.org/resources/irec-model-interconnection-procedures-2019/>. For an excellent resource on storage interconnection policy barriers and solutions, see [this 2023 Clean Energy Group report](#).

federal funding opportunities such as the other GGRF competitions. Financing, guarantees, equity investments should all be considered as companion tools to meet your state's goals. We recommend you make coordinating strategies with your state's green bank and Community Development Financial Institutions (CDFIs) a priority.

- **Self-evaluate any existing community solar programs against Solar for All goals and grading criteria.** Using **Appendix A (Points Structure for the GGRF Solar for All Competition Program Narrative and Self-Evaluation Form)** to this guide, review any existing community solar program in your state and determine its strengths and weaknesses. Using the information in this guide, assess whether to start a new program with renewed ambition and scale, or whether to consider adding program features that will deepen program impact, reach, and effectiveness.

1.3 Designing a Community Solar Program for Solar for All

The NOFO lays out all requirements relevant to Solar for All applications and discusses opportunities to create new programs as well as to expand and enhance existing programs. Community solar is explicitly authorized (see definition below).

EPA specifically allows a one-year planning period from the date of a Solar for All award.¹⁰ However, the level of detail requested in the NOFO implies that a program design should still be fairly developed. Our understanding is that both applicants for existing and new Solar for All programs can avail themselves of this one-year planning period.

Existing low-income solar programs are considered existing Solar for All programs, which can be expanded with funding from this Competition, but they must meet the requirements set forth in the NOFO and the IRA, including with respect to eligibility criteria and Justice40.

Applicants proposing to expand or enhance existing community solar programs could think about making them larger, increasing benefits to participants, or expanding the scope of programs to include new strategies and goals. The request for applications specifically mentions:

- Increasing any existing program caps and/or carveouts;
- Increasing the subsidy size;
- Expanding eligibility;
- Supporting greater household savings;
- Supporting community ownership and workforce training programs;

¹⁰ See page 58 of the NOFO.

- Introducing subsidies for storage of solar energy and eligible upgrades; and
- Supporting program administration and technical assistance needs.

Section 2. Eligibility

2.1 Defining Community Solar

Community solar has developed through a wide variety of experimentation and has taken on many forms. As per DOE's description, community solar is "any solar project or purchasing program, within a geographic area, in which the benefits of a solar project flow to multiple customers such as individuals, businesses, nonprofits, and other groups."¹¹

In the NOFO, EPA defines community solar as (a) a solar PV power-producing facility or solar energy purchasing program from a power-producing facility, (b) with up to 5 megawatts (**MW**) nameplate capacity, (c) that delivers at least 50% of the power generated from the system (d) to multiple residential customers (e) within the same utility territory as the facility.

2.2 Solar for All Eligible Customers and Projects

In addition, as stated above, the NOFO requires that 100% of the funds be spent to benefit disadvantaged communities and low-income households. The exact definitions relevant to these communities are briefly summarized below. Low-income and disadvantaged communities are defined in the NOFO by:

(1) Location

- a. as communities identified as disadvantaged by the [Climate and Energy Justice Screening Tool \(CEJST\)](#) map;
- b. as a limited number of additional communities identified as disadvantaged by the [EJScreen mapping tool \(EJScreen\)](#);

(2) Residential customer income

- c. as geographically dispersed low-income households that meet income thresholds (80% Area Median Income (**AMI**), 200% Federal Poverty Level, or participating in income-based or income-verified federal assistance programs);¹²

(3) Property type

- d. as properties providing affordable housing Multifamily housing with rents not exceeding 30% of 80% AMI for at least half of residential units and with an

¹¹ DOE, National Community Solar Partnership, <https://www.energy.gov/communitysolar/community-solar>.

¹² See Appendix B (*NOFO Eligibility, Tax Credits, and Maps*) below for an exact definition.

active affordability covenant from one of the following federal or state housing assistance programs; and

- e. as naturally-occurring (unsubsidized) affordable housing with rents not exceeding 30% of 80% AMI for at least half of residential units.

Precise and lengthy definitions are available in Appendix B (*NOFO Eligibility, Tax Credits, and Maps*) below. A Solar for All community solar program offered by a state may focus on either one or all of these areas, customers, and properties; an in-depth discussion on design decisions pertaining to setting income vs. geographic eligibility criteria in a state program is available in CESA's single-family homes LMI solar guidance and model RFP on CESA's website.¹³

As a reminder, and as indicated above, at minimum 40% of the funds will have to be deployed in service of residents located in areas designated as disadvantaged by CEJST (1(a) in the list above).

Thus, as a starting point, a Solar for All-compliant community solar program design could allow projects that serve residential customers located in areas identified by CEJST or EJSscreen above, dispersed customers that meet income requirements, and residents of affordable housing under certain conditions.

2.3 Briefly Considering Tax Credits in the Context of Project Eligibility

However, in order to maximize opportunities for Solar for All programs to leverage available tax credits, including tax credit adders to the Investment Tax Credit (ITC) or the Production Tax Credit (PTC) introduced by the IRA (see Section 4.4.4 below for additional details), states should consider any restriction about community solar project type, size, ownership, or location stemming either directly from the IRA or from the program administration processes being established by the U.S. Treasury (**Treasury**) in the NOPR relevant to the Low-Income ITC Adder under [26 U.S.C § 48\(e\)](#) and preliminary rules relevant to the Energy Community ITC Adder under [26 U.S.C § 48\(a\)\(14\)](#).

This is important because complying with all layers of the "ITC layer cake" below could potentially result in up to 70% of the eligible project costs to be covered by federal tax credits.

¹³ See page 14 of the CESA guidance available here: <https://www.cesa.org/resource-library/resource/single-family-home-lmi-solar-program-design-guidance/>

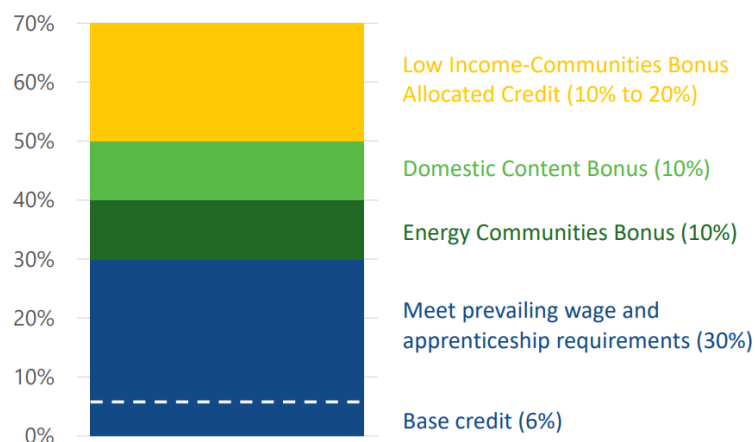


Figure 1 - A Visual Representation of Tax Credits Available to Community Solar Project Owners - Source: DOE

Consider the following:

- **Low-Income ITC Adder generally.**¹⁴ Regarding the Low-Income ITC Adder, the IRA, codified under [Section 48\(e\)\(2\)\(C\)](#) of the Internal Revenue Code, provides that a facility will be treated as part of a “qualified low-income economic benefit project,” i.e., eligible to receive the adder according to an allocation process, “if at least 50 percent of the financial benefits of the electricity produced by such facility are provided to households with income of less than 200 percent of the poverty line (...) [as defined in Section 2110(c)(5) of the Social Security Act ([42 U.S.C. 1397j\(c\)\(5\)](#))] applicable to a family of the size involved, or less than 80 percent of area median gross income as determined under [Section 142\(d\)\(2\)\(B\)](#) of the Internal Revenue Code.” As per the NOPR, Treasury proposes to consider electricity acquired at a below-market rate a financial benefit. To ensure that a community solar project under a Solar for All program can receive this adder would require weaving this income-based requirement relating to the final eligible customers into the program design. **As a result, states should not design programs where eligibility is solely driven by location in a disadvantaged community as defined in the NOFO (See Section 2.2 (Solar for All Eligible Customers and Projects) above) but also include income-based qualification criteria.**
- **Multifamily affordable housing.** Additional care should be taken when customers reside in multifamily affordable housing as different rules apply. Because a forthcoming CESA guide will cover multifamily affordable housing models, we will not cover additional requirements for that type of property in this guide and

¹⁴ Note that the rules pertaining to the Low-Income ITC Adder that are applicable to community solar are not the same as the rules applicable to single-family homes. Where a project meets both the location-based definitions that cover projects located on Indian land or in low-income communities (category 1 and 2 projects), and the categorical definitions of community solar or solar on multifamily affordable housing (category 3 and 4), the rules applicable to category 3 and 4 override the rules applicable to categories 1 and 2.

recommend you consult the NOPR and this [CESA Low-Income ITC Adder FAQs](#) in the meantime.

- **Low-Income ITC Adder NOPR maximum size and location requirements.** The IRA limits the size of solar projects eligible for the Low-Income ITC Adder to 5 MW_{AC}. States should be aware of the ways that this capacity cap may be impacted by Treasury’s future regulations. At the time of writing, Treasury is proposing to aggregate into a single facility the facilities of the same type (solar) that are “operated as part of a single project consistent with the single-project factors provided in Section 7.01(2)(a) of [Notice 2018–59](#), 2018–28 I.R.B. 196 or Section 4.04(2) of [Notice 2013–29](#), 2013–20 I.R.B. 1085, as applicable.” Refer to [page 20 of this CESA FAQs](#) for details about Treasury’s proposed factors of single project determination.
- **Low-Income ITC Adder NOPR proposed prioritization process.** The IRA caps the Low-Income ITC Adder, and Treasury is proposing a process to prioritize applications for the tax credit adders’ allocation. Such prioritization process includes geographic components that states should be aware of and weave into their program designs to help the market promote areas in which projects will trigger prioritized allocations of the Low-Income ITC Adder by Treasury. Additional information about such process and geographic components is available in Section 4.4.4 below.
- **Energy Community Adder.** Consider the extent and location of Energy Communities (as defined by the IRA) in your state. Do they largely overlap with areas considered disadvantaged under the NOFO? A precise definition of Energy Communities is available in Appendix B (*NOFO Eligibility and Maps*).

Section 3. Introduction to Three Models

We examine three business models that are based on examples in operation now and have a track record of success, and propose elements of program designs and variations a state could consider to support such business models. An applicant to the Solar for All Competition may wish to propose all or parts of one or more of the three models.

The three models are briefly introduced below and further detailed individually in the following sections.

- **Subscription model.** This is the most common model in use today, where residential and business customers can subscribe to electricity generated at a central location, either onsite or offsite (the **Subscription Model**). It can be adapted to LMI residential households, as the Solar for All competition requires, by providing greater subsidies for or serving a larger number of LMI households. The Subscription Model can be the basis for adding other features.

- **Ownership model.** Ownership of community solar by individuals and community organizations is a way to build community wealth. We present two variations of this model that seek to extend ownership specifically to LMI households and disadvantaged communities, as specified in the NOFO (the **Ownership Model**).
- **Energy assistance model.** Delivering benefits to LMI households with community solar can be viewed as a new form of energy assistance, along with weatherization and bill and rate discount programs. We propose a model that ties in community solar to the energy assistance programs delivery infrastructure (the **Energy Assistance Model**).

The best way to pick a strategy to pursue in your region is to discuss the options with your collaborators and stakeholders. The Solar for All guidance strongly encourages collaboration, not just among state agencies, but with utilities, the local solar industry, community-based organizations, and other stakeholders.

The appropriateness of the models in a given state or territory will depend on the specific legislative or regulatory policies in that region, the presence and strength of a solar industry, the willingness and ability of electricity retailers and utilities to participate, the number and role of stakeholders and collaborators, and the goals and preferences of the applying state or territory government.

Before diving into the models discussion, please review Section 1.2 (*How to Use this Guide*).

Section 4. Subscription Model

4.1 Model Description

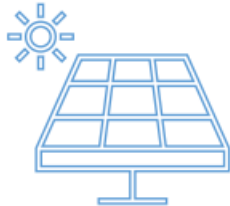
The first model for community solar is the one most commonly in use and is arguably the one most commonly understood to be “community solar.” In this model a utility or third-party owns and operates a centrally-sited solar plant and conveys the value to customers through a monthly subscription.

The value of the solar generation is conveyed to the subscriber either (a) as a credit on utility bills, or (b) as a credit on a separate bill. A single bill, where the credit is subtracted from monthly generation to determine a net value, is more easily understood by consumers than separate bills, but requires the involvement of utilities or electricity retailers.

In the Subscription Model, subscribers typically do not make a down-payment to enroll, and can cancel their subscriptions without fees, with a 30-day notice. Subscription managers manage marketing, enrollment, and customer turnover.

Subscription Model

Generation value



System owned by community solar company (utility or third party)

Solar for All funds, among other things, can be used to increase the savings for or expand the number of LMI subscribers.

Examples: Minnesota CSG, New York, and others

... is conveyed

- Either on utility bill (requires participation of utility)
- Or on separate bill (can be done without utility)

... to subscriber.



The value of the subscription is often determined by state policies, with values at or near retail rate being the most popular with customers. Valuations at wholesale or energy-only rates have been less popular, resulting in programs with few subscribers. Valuations can be adjusted to provide greater benefits to some customer types (such as LMI households) or to incentivize market behavior.

Ownership by utilities or experienced independent power producers can result in least-cost projects, with developers being able to take full advantage of government incentives and financing measures. However, it does not necessarily result in community ownership or wealth-building, a goal of some government policies. Note that an indirect form of ownership under this model occurs when projects are owned by publicly-owned utilities, which are controlled by local governments or electric cooperative members.

4.2 Examples

The Subscription Model operates in both traditional and retail choice states, and can be offered by both regulated utilities and competitive market participants.

- **Minnesota.** The longest running example is the Minnesota Community Solar Garden (CSG) program, where third-party developers sell subscriptions to commercial and residential customers, the value of the generation is determined by a PUC-approved value of solar tariff (VOST), and delivered via a second (non-

utility) bill.¹⁵ The program was recently revamped to provide more incentives for residential and LMI participation.¹⁶

- **Florida.** In some places, regulated utilities themselves own and operate community solar programs, and manage subscriptions among their customers. One example is Florida Power & Light's FPL SolarTogether program, which has enrolled over 59,000 customers.¹⁷

4.3 Program Design Options to Deliver Benefits to Low-Income Households and Disadvantaged Communities

Subscription-based community solar programs can be the basic platform to which certain meaningful benefits can be attached. Programs can be designed to benefit LMI subscribers in a few common ways.

- **Subscription incentives.** Programs can use public funds to subsidize the value of subscriptions by eligible LMI households, increasing bill savings. The Illinois Solar for All program is one example, where vendors get a larger incentive to pass along to LMI households and community-based organizations.
- **LMI carveouts.** Programs can require or incentivize community solar vendors to have a minimum percentage of LMI residential customers in their subscriber base. New Jersey gave a preference in a competitive solicitation to vendors that are directing more than half of their capacity to income-eligible households.
- **Energy assistance coordination.** Programs can encourage customers participating in energy assistance programs like LIHEAP to subscribe to community solar. Alternatively, states could give grants to energy assistance program managers to set up and pay for "opt out" community solar subscriptions on behalf of their clients. Utilities could own and operate a community solar plant, or contract with an independent developer, and direct the benefits to customers participating in bill/rate discount programs or that have arrearages. Community solar as energy assistance is discussed below in Section 7 (Energy Assistance Model).
- **Ownership subsidy.** Programs can help eligible customers to own offsite solar systems or get an ownership share of a cooperatively-owned solar project. These two options are discussed more in Section 5 (*Offsite Ownership Model*) and Section 6 (*Cooperative Ownership Model*).

¹⁵ Minnesota Public Utility Commission, Community Solar Garden (CSG), <https://mn.gov/puc/activities/economic-analysis/community-solar-gardens/>

¹⁶ Frank Jossi, Energy News Network, "Minnesota community solar projects are about to get bigger and more far-flung," July 11, 2023, <https://energynews.us/2023/07/11/minnesota-community-solar-projects-are-about-to-get-bigger-and-more-far-flung>

¹⁷ Florida Power & Light, FPL Solar Together, <https://www.fpl.com/energy-my-way/solar/solartogether-res.html>

In addition to the policy and program options above, there are two standard administration designs for a state subscription-based community solar program that delivers benefits to LMI customers.

- **Standing offer.** In the first option, a program can give cash incentives to registered vendors providing discounted subscriptions to LMI households.
 - Incentives could be based on a payment per household or per subscription capacity, and could be performance-based with greater incentives for delivering higher savings or serving more households. The program could make an upfront payment to a marketer followed by a periodic true-up or could provide a payment after a certain time period (such as quarterly), based on actual performance. Note however that there are some restrictions to payments that would extend beyond the five-year performance period. States that wish to consider a performance-based incentive should investigate how to monetize other sources of funding.
 - Community solar vendors who want to serve LMI households would register with the agency and agree to follow program rules. Vendors will submit proof of enrollment and proof of sales every quarter to receive incentive payments.
- **Competition.** In the second option, the program can select providers through a competitive solicitation (**RFP**) to serve LMI households. Winning bidders would be selected based on promised performance, with performance bonuses offered for going beyond benchmarks.

In both options payments would be determined based on the cost of service, including construction, O&M, and customer management services, plus a reasonable return, relative to the retail rate of the served household (i.e., a residential rate class), based on the bill savings delivered, but could also be based on other meaningful benefits (see below).

Depending on the type of model chosen, government agencies may want to consider hiring a program administrator experienced in managing utility or marketing programs.

4.4 Guidance for Solar for All Application

4.4.1 Impact Assessment (20 points total)

NOFO Section V.A.1.1: *This section of the application must set reasonable and ambitious targets for program output and outcome metrics (10 points) and justifies how the proposed outcome metrics are reasonably achievable (10).*

While ambitious targets may be easy to set, reasonable targets are less so. With a community solar Subscription Model, one strategy to set both “ambitious and reasonable” targets could be to start with the number of households served in the Low-

Income Home Energy Assistance Program (**LIHEAP**) for each state or territory. The State Snapshots page of the LIHEAP Clearinghouse gives recent statistics for program delivery.¹⁸

LIHEAP rarely if ever has sufficient funding to reach all enrolled households, so the pool of customers that could benefit from LMI community solar is larger than participants in LIHEAP in a given year. However, LIHEAP participation could be considered a reasonable approximation of the universe of eligible customers that are likely to respond to and participate in a community solar offering *in the short term*.

In one example, New Jersey served 206,958 households for heating needs in FY20; 46,565 for cooling; 25,981 for Winter/Year-round Crisis; and 829 for Weatherization services. New Jersey's two-year community solar pilot program has selected 240 MW of new projects, with a majority of their capacity dedicated to LMI customers. If 150 MW of that capacity is allocated at 5 kW per household, that could provide bill savings to 30,000 LMI customers, which is only 15 percent of households that get heating assistance, but is in line with the number who got Winter/Year-Round Crisis assistance. Additional growth could come from households served for heating and other needs.

A program serving over 30,000 households is considered by the EPA Solar for All competition to be in the "large" category and could have a grant award of between \$250 and \$400 million (the maximum amount).

Note that this section must include greenhouse gas reduction metrics as well.

When justifying the number of households served and establishing a rationale for the reach of the program, we recommend that you be explicit in your approach to customer acquisition early on. Since customer acquisition can be a costly and difficult process, especially for LMI households, we recommend building on the existing energy assistance program infrastructure, such as LIHEAP and the Weatherization Assistance Program (**WAP**), or any state-level or utility assistance programs. Customers in those programs are already verified as income-eligible and can be reached through the same communication channels. Indeed, participation in other government assistance programs, such as Medicaid, SNAP, and TANF is commonly used as a way to verify program eligibility, but those programs could also be an effective pathway for marketing and recruitment.

Energy agencies may consider collaborating with the managing agencies of those programs, such as by sharing communications and creating formal relationships with community solar subscription organizations. While each program has their own eligibility levels (such as a percentage of federal poverty limits) most of their limits are less than

¹⁸ US Department of Health and Human Services, LIHEAP Clearinghouse, "State Snapshots," <https://liheapch.acf.hhs.gov/snapshots.htm>

the most typical LMI solar eligibility limit of 80 percent of area median income (AMI). This means that typically all households enrolled in those programs are eligible for LMI solar subscriptions, and are already income-verified, which reduces administrative costs.

When working with other government assistance programs, it will be important to ensure that consumer protection and privacy rules are strictly followed. The US Department of Energy is working with the Department of Health and Human Services on a Community Solar Subscription Tool to facilitate linking LIHEAP and community solar programs. This tool will be made available to LIHEAP program administrators.¹⁹

Other options for building on energy assistance programs are discussed in Section 7 (*Energy Assistance Model*) below.

4.4.2 Meaningful Benefits Plan (30 points total)

NOFO Section V.A.1.2: *This section of the application will be judged based on five meaningful benefits: Bill Savings (10 points), Access (5), Resiliency (5), Ownership (5) and Jobs (5). The optional Attachment I includes letters of support from potential partners.*

Community solar programs will deliver “meaningful benefits” to LMI households and communities by lowering bills, ensuring access for all, encouraging the addition of battery storage to increase resiliency, including local ownership options, and coordinating with job training and placement programs.

These five meaningful benefits were developed for the DOE’s National Community Solar Partnership (NCSP) and are a prominent part of the EPA Solar for All competition.²⁰ How to address each of the meaningful benefits is discussed below.

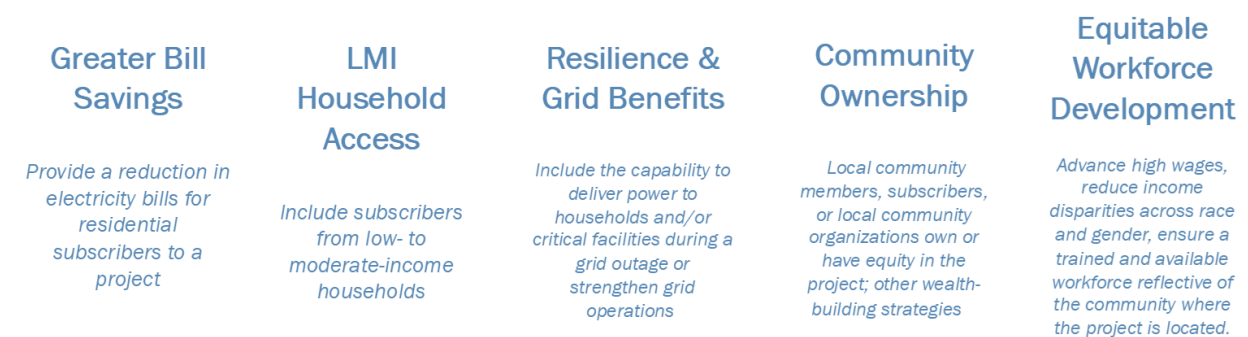


Figure 2 - Five Meaningful Benefits - Source: NCSP

If the program runs with a standing offer, an agency can reward registered community solar vendors with incentive payments that are based on metrics that include meaningful

¹⁹ DOE, Low-Income Clean Energy Connector, <https://www.energy.gov/communitysolar/low-income-clean-energy-connector>

²⁰ DOE, National Community Solar Partnership, <https://www.energy.gov/communitysolar/community-solar>

benefits. If the program functions with an RFP, vendors would be selected based on a commitment to use all or most of their solar capacity or energy to serve LMI households and community-based organizations that provide services to low-income communities. Proposals could be scored based on vendor commitments, with higher points for those that promise bigger savings or other meaningful benefits.

A risk of this strategy is that vendors will have an incentive to make aggressive promises to win the competition, and then may not be able to deliver. In addition to strong benefits, competitors should also be judged based on whether their targets are “reasonable and ambitious” and based on their track record. Some strategies to mitigate this risk include doing a mid-year review to make adjustments between budgets; collecting ongoing performance data from vendors; and adjusting program rules on a regular schedule.

Bonus payments can also be given to vendors that exceed targets for participation and savings, or provide other meaningful benefits. Vendors will be subject to ongoing review and audits, plus periodic payment true-ups if necessary, to ensure performance.

4.4.2.1 Bill Savings and Reducing Energy Burdens

In this model, vendors will need to deliver a minimum of 20% savings on monthly bills based on the average utility bill on the service territory,²¹ with extra incentives for delivering bigger savings per household. Vendors will further be rewarded for reducing household energy burdens, or the percentage of income spent on utility bills, for LMI households. Vendors should document bill savings relative to household incomes, where known, to document burden reductions.

Note that in addition to the minimum savings requirement set by the Solar for All program, a community solar owner that wishes to take advantage of the Low-Income ITC Adder may need to comply with additional requirements. For example, in the NOPR, Treasury proposed to reserve tax credit adder allocations for project owners that will provide at least a 20-percent “bill credit discount rate” to qualifying households, i.e., households with income below specific thresholds.²² The bill credit discount rate focuses on the costs and benefits to the low-income households.²³ States should keep an eye out

²¹ See Appendix C of the NOFO, p. 78.

²² See Section 2.3 (*Briefly Considering Tax Credits in the Context of Project Eligibility*) above for a detailed description of these income eligibility requirements.

²³ As per the [NOPR](#), “The Treasury Department and the IRS propose defining a “bill credit discount rate” as the difference between the financial benefit distributed to the low-income household (including utility bill credits, reductions in the low-income household’s electricity rate, or other monetary benefits accrued by the household) and the cost of participating in the program (including subscription payments for renewable energy and any other fees or charges), expressed as a percentage of the financial benefit distributed to the low-income household. The bill credit discount rate can be calculated by starting with the financial benefit distributed to the low-income household, subtracting all

for changes and discuss how this definition may differ from the definition offered by EPA with developers in their states as they prepare their applications (and further, as they use the one-year planning period to refine concepts).

Solar for All funds can be used in a variety of ways to reduce program costs. The most direct way is to directly subsidize the cost of subscriptions by eligible LMI households. The agency can balance between offering deeper savings for a smaller number of eligible customers, or smaller savings for a larger customer base. This could be determined by allocating a set capacity per household. Solar subscriptions could range from 2 to 5 kW per household, for example. Thus, each megawatt of community solar capacity could deliver benefits to between 100 and 500 households. A 5 kW allotment would produce about 60-80% of annual demand for the average US residential customer.

4.4.2.2 Access

To ensure high participation rates for LMI households, vendors will need to actively engage local communities to overcome barriers. In the NOFO, EPA defines access in terms of “financial assistance and project-deployment technical assistance.” Some common barriers to access can be the lack of funds to overcome first costs; the lack of financing due to low or no credit scores; the language used for marketing; the lack of individual utility bills in master-metered housing; and distrust of energy marketers.

Further, in line with the Justice40 directive, the NOFO encourages a focus on disadvantaged communities. See Section 2.2 (*Solar for All Eligible Customers and Projects*) for additional information and recommendations on how to manage the income-based and geographic components of access for customers and projects.

Another way to increase access by eligible customers is to work with community-based organizations, as discussed further in Section 4.4.6 (*Equitable Access and Meaningful Involvement Plan* (30 points total) below, or to tie in to energy assistance programs, as in Section 7 (*Energy Assistance Model*).

4.4.2.3 Resiliency

Under the Solar for All competition, energy resiliency is defined as the ability to “deliver power to low-income and disadvantaged households and/or to critical facilities serving low-income and disadvantaged households during a grid outage.” This implies the use of solar and storage systems that are located behind the meter on a customer’s premises, or are part of a microgrid serving one or more customers in an area, both of which are

payments made by the low-income customer to the facility owner and any related third parties as a condition of receiving that financial benefit, then dividing that difference by the financial benefit distributed to the low-income household.”

capable of operation independently from the grid. Projects that can deliver this extra benefit will be preferred in the Competition.

Because the Solar for All Competition focuses on providing benefits to residential subscribers, a community solar+storage development that provides resiliency benefits may be one that is sited on a building or in a microgrid system, but that provides solar subscriptions to offsite residential customers. Likely project hosts could be buildings that provide public services during emergencies, such as schools, critical facilities like police and fire stations, shelters and cooling centers, hospitals and clinics, and public works facilities.

To maximize the value of a solar + storage system, the host customer could be on a time-of-use rate plan to enable daily load shifting, and the battery system may be part of a demand response program or “virtual power plant,” where it earns revenues to provide grid services.

4.4.2.4 Ownership

The NOFO specifically encourages community solar models that “support low-income households and disadvantaged communities building equity in projects.”²⁴ If agency programs do not facilitate community ownership, their application will have to “justify why the program will be unable to.”²⁵

A number of models of community ownership are being tried in the US, but they are rarely aimed at ownership by low-income and disadvantaged households. Two Solar for All-oriented Ownership Models are discussed in detail below. The first involves ownership of an offsite solar installation, with the value delivered through virtual net metering, not through a subscription, so that its features could not be paired with this Subscription Model. However, the second option, a community solar cooperative model, can include both ownership and subscriptions. Please refer to Section 6 below.

Another approach is to aim at ownership by organizations that serve low-income and disadvantaged communities, rather than by LMI individuals. The Energy Assistance Model below in Section 7 contemplates community solar owned by the organizations that deliver bill assistance programs, due to their close connection to household energy issues. However, other community organizations could act as a project owner, such as local governments, churches, or social welfare organizations. This approach is more viable now

²⁴ Page 43 of the NOFO

²⁵ Page 53 of the NOFO

as the ITC can be paid out as cash to non-taxable organizations via “direct pay” (also known as “elective pay”).²⁶

To encourage wealth-building in disadvantaged communities, agencies can give preference to projects that feature ownership by local community-based organizations, cooperatives with local LMI member-owners, and other viable business models. The preference can take the form of higher scoring in a competitive solicitation and/or higher subsidy payments to vendors.

4.4.2.5 Jobs

The NOFO encourages contestants to create job opportunities for low-income and disadvantaged communities and states that agencies should require applicants to their programs to adhere to Good Jobs principles for their employment practices, as defined by the U.S. Departments of Labor and Commerce.²⁷ Applicants will need to describe how they will execute on the principles in the areas of recruitment and hiring; benefits; diversity, equity, inclusion, and accessibility (**DEIA**); empowerment and representation; job security and working conditions; organizational culture; pay; and skills and career advancement.

Applicants will be further evaluated based on their plans to provide opportunities in low-income and disadvantaged communities and to minority- and women-owned businesses as well as historically underutilized business zones (as defined by the U.S. Small Business Administration’s “HUBZone” program).²⁸ The Competition encourages, but does not require, applicants to include letters of support (Attachment I) from potential workforce development partnerships.

Further, an agency should coordinate with job training and placement programs in the region to facilitate job programs within the community solar initiative:

- DOE’s Solar Instructor Training Network worked with 400 community colleges to train around 1,000 instructors on solar technologies, before closing down in 2016. That work is being continued by the Interstate Renewable Energy Council (**IREC**) which has accredited over 200 clean energy training programs and has certified more than 100 clean energy instructors.²⁹ They maintain a Credential Holder Registry of 115 trainers in 25 states.³⁰ There are also over 800 federally

²⁶ For additional information about how public organizations can utilize direct pay, refer to [this guide for governments, schools, and nonprofits](#).

²⁷ U.S. Departments of Labor and Commerce, “Good Jobs Principles,” <https://www.dol.gov/general/good-jobs/principles>

²⁸ U.S. Small Business Administration, HUBZone program, <https://www.sba.gov/federal-contracting/contracting-assistance-programs/hubzone-program>

²⁹ Interstate Renewable Energy Council (IREC), Workforce Development Strategies, <https://irecusa.org/our-work/workforce-development-strategies/>

³⁰ IREC, Credential Holder Registry, <https://irecusa.org/clean-energy-training/credentials/credential-holder-registry/>

funded programs supporting energy and manufacturing related workforce training programs. This includes 550 that cover solar job training.³¹

- A number of other programs – not specific to solar power – are funded by the National Science Foundation, the Department of Labor and the Department of Energy.³²
- The agency should also make formal arrangements with general job training programs to facilitate training and placement of workers in community solar. If no such program exists, the agency should consider utilizing Solar for All grant funds to support creating one, such as with local unions or community colleges.

Lastly, to ensure that community solar projects are able to receive the full value of tax credits, states should conform with labor requirements set by the Tax Code, at minimum for projects of nameplate capacity of 1 MW_{AC} and up. Projects less than 1 MW_{AC} do not need to comply with these requirements to receive the base 30% ITC rate. Projects that do not comply will receive a 6% base ITC instead. The penalty also applies to two of the three available adders (regarding energy communities and domestic content) and reduces them from 10% to 2%, so that a maximum ITC, assuming all adders are available and allocated to a project, would decrease from 70% to 30% of eligible costs.

These tax-related labor requirements mean that solar developers must ensure that all laborers and mechanics are paid the applicable prevailing wage for all hours performing construction, alteration or repair. Prevailing wages in the area where work is performed are determined by the Department of Labor and are posted online.³³ Projects must also employ a minimum number of apprentices for a minimum number of hours.³⁴ States should consider the impact of extending these requirement to smaller projects, both in terms of policy priorities (good jobs) and in terms of costs. We recommend agencies consult with local stakeholders on these (and other) topics, and include these costs in savings calculations. Note that EPA has signaled that compliance with the Davis Bacon Act would be required for funds awarded in the Solar for All competition and that the compliance requirements would be included in the grant agreement with EPA.³⁵ For now, and pending new guidance and/or regulation from Treasury, the tax credit labor requirements closely mirror the Davis Bacon Act requirements.

³¹ Id.

³² U.S. DOE, Federal Energy and Manufacturing Workforce Training Programs, <https://www.energy.gov/eere/education/federal-energy-and-manufacturing-workforce-training-programs>

³³ US Dept. of Labor, "Obtaining Davis-Bacon Wage Determinations," <https://www.dol.gov/sites/dolgov/files/WHD/Obtaining-WDs.pdf>

³⁴ ApprenticeshipUSA, Inflation Reduction Act Apprenticeship Resources, <https://www.apprenticeship.gov/inflation-reduction-act-apprenticeship-resources>

³⁵ See page 62 of the NOFO.

4.4.3 Distributed Solar Market Strategy (30 points total)

NOFO Section V.A.1.3: *This part of the application focuses on strategies to overcome barriers, especially through the use of supportive policies. It will be scored on whether certain supportive policies are present, are a barrier or an asset, and if barriers exist, how they will be addressed. The policies include: net metering (6 points); third-party ownership (5 points); interconnection processes (5 points); renewable portfolio standards (RPS) (5 points); community solar policies (4 points); and major regulatory differences across jurisdictions (5 points).*

If the policies need to be improved or if a jurisdiction lacks them, the application “will be evaluated on (...) statements of support from governors’ offices, public utility commissions, and other energy market stakeholders.”

This part of the Solar for All application has less to do with how vendors will apply to an agency for support, and more with what the agency itself will do to reduce barriers and create a conducive policy environment for community solar development. The application should thus describe the policy environment in the state or territory, identify areas that will require improvement, and identify actions to make those improvements, with letters of support from governors’ offices, public utility commissions, and other energy market stakeholders.

The most important enabling policy for the Subscription Model is a mechanism to transfer the value of energy from an offsite solar project to a subscriber. The most common approach, in states with active community solar programs, is to provide a bill credit to subscribers that reflects the monthly power output of the system (sometimes called “virtual net metering”).

In some cases, the bill credit is managed on the customer’s utility bill and is thus subtracted from the charge for electricity. In other cases, the bill credit is delivered separately from the utility bill. In this case, a customer will pay for both a utility bill and a community solar subscription, with the benefits resulting in net savings. This two-billing approach has the potential to cause confusion to subscribers and result in arrearages in both bills, despite net overall savings. As a result, consolidated billing with netting on a single bill is strongly recommended.³⁶

Other policies have varying levels of importance for subscription-based community solar, depending on the business model.

³⁶ Sandy Fazeli, NASEO, *Community Solar Consolidated Billing Review of State Requirements, Policies, and Key Considerations*, undated, [https://naseo.org/data/sites/1/documents/publications/Community%20Solar%20Consolidated%20Billing%20Final\[85\].pdf](https://naseo.org/data/sites/1/documents/publications/Community%20Solar%20Consolidated%20Billing%20Final[85].pdf)

- **Net metering** is only relevant for behind-the-meter projects with generation that exceeds simultaneous demand.
- **Third-party ownership** of generation is necessary for programs that allow competitive suppliers, although community solar can also be offered by regulated utilities, often contracting with third-party solar developers.
- Easy **interconnection standards** for distributed generation projects of all kinds are vital in lowering costs and enabling timely development. The Interstate Renewable Energy Council has extensive assistance available for setting good interconnection, including Model Interconnection Procedures.³⁷
- **RPS** can create an additional revenue stream for solar projects in the form of renewable energy credits (**RECs** or **SRECs**), helping reduce the cost to subscribers. In some cases, revenues from alternative compliance payments made by covered retailers can be directed toward supporting LMI solar, as in the Washington, DC, Solar for All program.³⁸

4.4.4 Financial Assistance Strategy (30 points total)

NOFO Section V.A.1.4: This part of the application will be judged on whether the applicant has an effective financial assistance strategy (10); whether it complements and does not duplicate existing sources of capital and financial assistance, will be durable, leverages other funding sources, and engages capital providers (10); and whether it considers long-term impacts (5). A further five points will be given if it includes a plan for storage and enabling upgrades (5), which are less relevant for offsite community solar than for rooftop installations.

The Solar for All program will result in a new source of funding for LMI community solar, potentially worth tens of millions of dollars per state or territory. A plan to use that money will be most likely to succeed if its financial strategy is efficient, i.e., complements existing programs, leverages other funding sources, is attractive to developers, is durable and fiscally sustainable, includes energy storage when feasible, and results in long term impacts.

Many states and territories already have clean energy incentives that can be applied to community solar, along with energy efficiency and energy assistance programs. State tax credits or tax exemptions, for example, should be checked or modified to make sure they provide incentives to community solar, especially for solar that benefits LMI customers and communities. In addition, applicants should consider how they will utilize and

³⁷ IREC, “Connecting to the Grid,” <https://irecusa.org/our-work/connecting-to-the-grid/>. Also, *Model Interconnection Procedures 2019*, <https://irecusa.org/resources/irec-model-interconnection-procedures-2019/>

³⁸ Database of State Incentives for Renewable Energy (DSIRE), “Washington, DC, Solar Renewable Energy Credits,” Last Updated June 2, 2022, <https://programs.dsireusa.org/system/program/detail/5686>

leverage other sources of federal funding such as the ones detailed below in Sections 4.4.4.1 (*Tax Credits*), 4.4.4.2 (*REAP*), and 4.4.4.3 (*Other*).

For the Solar for All application, agencies should describe their role, and the role of developers. For their own role, applicants should catalog how state or territorial incentives can be used to encourage LMI community solar. This could include plans to adapt existing incentives for community solar, or to adopt new incentives. This should also include clear linkages with state plans or partners' plans with respect to the other two GGRF competitions, taking into account any other tools such as equity investments, guarantees, debt, and any other financial strategy to support lenders, developers, and project owners for the benefit of communities.

The analysis should describe how federal incentives can be applied in the state. See below in Section 4.4.4.1 (*Tax Credits*) for more on this topic.

The agency should share financial analyses and broad strategic plans with community solar developers to encourage them to take advantage of all available incentives and financing programs. The agency could host informational seminars with experts discussing the various programs. When appropriate, the state or territorial agency should coordinate joint applications for federal programs.

If an agency is using a competitive solicitation to select LMI community solar providers, then applicants will be judged based on how they plan to take advantage of state and federal incentives, and how they will reduce the cost of projects and deliver maximum benefits to subscribers.

[4.4.4.1 Tax Credits](#)

Applications should explore how Solar for All funds will be leveraged with additional federal funds, including those offered by EPA's other two GGRF competitions. Most prominently, the IRA extended the Production Tax Credit (**PTC**) and the ITC, increased ITC and PTC rates, created a set of bonus tax credits (or adders) for projects that meet certain criteria, and allowed solar projects to utilize the PTC instead of the ITC.

Starting in 2024, the ITC and PTC will give way to the technology-neutral tax credits. Relevant credits and adders are summarized in the table below.

Summary of Investment Tax Credit (ITC) and Production Tax Credit (PTC) Values Over Time

			Start of Construction						
			2006 to 2019	2020 to 2021	2022	2023 to 2033	The later of 2034 (or two years after applicable year ^a)	The later of 2035 (or three years after applicable year ^a)	The later of 2036 (or four years after applicable year ^a)
ITC	Full rate (if project meets labor requirements ^b)	Base Credit	30%	26%	30%	30%	22.5%	15%	0%
		Domestic Content Bonus				10%	7.5%	5%	0%
		Energy Community Bonus				10%	7.5%	5%	0%
	Base rate (if project does not meet labor requirements ^b)	Base Credit	30%	26%	6%	6%	4.5%	3%	0%
		Domestic Content Bonus				2%	1.5%	1%	0%
		Energy Community Bonus				2%	1.5%	1%	0%
	Low-income bonus (1.8 GW/yr cap)	<5 MW projects in LMI communities or Indian land				10%	10%	10%	10%
		Qualified low-income residential building project / Qualified low-income economic benefit project				20%	20%	20%	20%
	PTC for 10 years (\$2022)	Full rate (if project meets labor requirements ^b)	Base Credit			2.75 ¢	2.75 ¢	2.0 ¢	1.3 ¢
Domestic Content Bonus						0.3 ¢	0.2 ¢	0.1 ¢	0.0 ¢
Energy Community Bonus						0.3 ¢	0.2 ¢	0.1 ¢	0.0 ¢
Base rate (if project does not meet labor requirements ^b)		Base Credit			0.55 ¢	0.55 ¢	0.4 ¢	0.3 ¢	0.0 ¢
		Domestic Content Bonus				0.1 ¢	0.0 ¢	0.0 ¢	0.0 ¢
		Energy Community Bonus				0.1 ¢	0.0 ¢	0.1 ¢	0.0 ¢

a "Applicable year" is defined as the later of (i) 2032 or (ii) the year the Treasury Secretary determines that there has been a 75% or more reduction in annual greenhouse gas emissions from the production of electricity in the United States as compared to the calendar year 2022.
 b "Labor requirements" entail certain prevailing wage and apprenticeship conditions being met.

Figure 3 - Summary of ITC and PTC Values over Time - Source: DOE Solar Energy Technologies Office

The main characteristics of the adders above are summarized below, along with a few caveats for states as they consider how to fold these credits into program designs.

- **Full rates for base tax credit.** As explained above in Section 4.4.2.5 (*Jobs*) labor requirements, which vary based on project capacity, will dictate the base rate available for a project, as well as the availability of the domestic content adder and the energy communities adder. See Section 4.4.2.5 for details.
- **Domestic content.** The domestic content bonus is applicable for projects that source materials from American suppliers. Treasury’s guidelines to qualify are available in [Notice 2023-38](#). (a) All iron and steel and (b) at least 40% initially

(increasing over time to 55% after 2026) of the cost of all manufactured products used to build the project must be produced in the United States.³⁹

- **Complying with this requirement has significant cost consequences**, which states should consider when modeling the savings that would result from a Solar for All program for residents. Also note that construction materials, iron and steel that are structural in nature, and manufactured products, items produced in a factory, are treated differently. See [this excellent explainer](#) from law firm Norton Rose Fulbright for additional details and a copy of their table showing which components of solar and storage projects will be considered steel and iron and thus necessarily made in the U.S. in Appendix C below.
- **Further, complying with domestic content requirements is necessary for tax-exempt entities to be allowed to utilize direct pay fully.** As stated above, certain tax credits can now be paid out as cash to certain tax-exempt organizations via “direct pay” (also known as “elective pay”).⁴⁰ The rate of the tax credits available for direct pay will *decrease* over time until 2025, at which point direct pay will not be available for entities that do not meet domestic content requirements. As direct pay is likely to be a significant source of funding for nonprofit organizations, local governments, and cooperatives offering services to low-income and disadvantaged communities, it is critical that states include this information in their program design and in their communications with tax-exempt entities that may not be aware.
- Waivers are available where complying would increase the project cost by more than 25% or US-made components are not available in sufficient quantity or quality.⁴¹ However, as per Norton Rose Fulbright tax attorneys in May 2023, **“a project cannot waive into a bonus credit, according to the Congressional tax committee staffs.** Their view is the waivers are relevant only for avoiding a domestic content penalty, meaning inability for tax-exempt and state and local government entities, the Tennessee Valley Authority, Indian tribes and rural electric cooperatives to receive full direct cash payments.”⁴²
- As a side note, EPA has indicated that Build America Buy America (**BABA**) would be applicable to certain projects under Solar for All.⁴³ To understand

³⁹ [Norton Rose Fulbright Domestic Content Explainer](#)

⁴⁰ For additional information about how public organizations can utilize direct pay, refer to [this guide for governments, schools, and nonprofits](#).

⁴¹ See [DOE FAQs here](#).

⁴² [Norton Rose Fulbright Domestic Content Explainer](#)

⁴³ See page 63 of the NOFO.

how BABA and the IRA’s tax credit domestic content requirements relate to one another other, see [the Congressional Research Service paper here](#).

- **Energy communities.** The formal definition of energy communities and links to maps are available below in Appendix B of this guide.
- **Low-Income ITC Adder.** This adder is relevant for projects in four categories, with caps applicable by calendar year as follows.⁴⁴ Category 4 is most relevant to community solar projects, but category 3 could also apply.

Category	Allocation Cap
Category 1: Located in a Low-Income Community as defined in Section 48(e)(1)(A)(i) of the Internal Revenue Code	700 MW
Category 2: Located on Indian Land, as defined in Section 2601(2) of the Energy Policy Act of 1992 (25 U.S.C. 3501(2))	200 MW
Category 3: Qualified Low-Income Residential Building Project as defined in Section 48(e)(1)(A)(ii) of the Internal Revenue Code	200 MW
Category 4: Qualified Low-Income Economic Benefit Project as defined in Section 48(e)(1)(A)(ii) of the Internal Revenue Code	700 MW

Note that if a project is located in an area that qualifies for category 1 and/or 2 but also qualifies as a category 3 or category 4 project such as community solar projects, then the category 3 or 4 classification overrides the category 1 or 2 classification, so that projects are able to receive 20% adders and location need not be considered outside of Justice40 compliance and allocation prioritization processes.

As detailed above in Section 2.3 (*Briefly Considering Tax Credits in the Context of Project Eligibility*), states should consider restrictions applicable to project size and ultimate customers that may be set by Treasury. See Section 2.3 for details.

Further, Treasury will allocate capacity based on rules that prioritize projects so that within each category, Treasury will reserve at least 50 percent of the capacity for projects that meet at least one of two additional selection criteria that Treasury is creating, based

⁴⁴ See 88 FR 35791, available here: <https://www.federalregister.gov/documents/2023/06/01/2023-11718/additional-guidance-on-low-income-communities-bonus-credit-program>

on ownership and on location.⁴⁵ As part of the location criterion, Treasury will prioritize projects located in a [Persistent Poverty County](#) or in a census tract that is designated in CEJST as disadvantaged based on energy burden and particulate matter (PM) 2.5 indicators. A Persistent Poverty County is generally defined as any county where 20 percent or more of residents have experienced high rates of poverty over the past 30 years. [A Persistent Poverty County map is available here](#). Note that the NOFO mentions that EPA expects the program to maximize the breadth and diversity of households in the program, including Persistent Poverty Counties.⁴⁶ States should examine where these areas are located and decide how to incorporate and/or prioritize them in their Solar for All applications.

In addition, Treasury will prioritize projects owned by “a Tribal Enterprise, an Alaska Native Corporation, a renewable energy cooperative, a qualified renewable energy company meeting certain characteristics, or a qualified tax-exempt entity.” See Appendix D to this guidance for additional information on these owner categories. We recommend that state programs specifically include these types of entities to ensure maximum allocation of this tax credit adder.

4.4.4.2 REAP

Other federal funding sources can be applied to LMI community solar programs.

The IRA also boosted the budget of the Rural Energy for America Program (**REAP**), a long-running grant and loan program of the U.S. Department of Agriculture (**USDA**). REAP’s budget was given \$2 billion to fund renewable energy systems and energy efficiency improvement grants for agricultural producers and rural small business owners through 2031.

“Rural small businesses” include for-profit companies, cooperatives, utilities, and Tribal business entities that meet the definition of “small business.”⁴⁷ A “small” solar electric power generation utility (NAICS code 221114) must have less than 500 employees.⁴⁸

The program provides guaranteed loans of up to 75% of the cost of eligible projects, grants covering up to 25% of project costs, and combined grant and loan guarantee funding for up to 75% of project costs.

⁴⁵ See [Treasury’s most recent guidance](#) dated June 2023 and this [unofficial FAQs answering questions relating to the NOPR prepared by CESA](#) and dated June 7, 2023.

⁴⁶ Page 6 of the NOFO

⁴⁷ USDA, Rural Development, “Rural Energy for America Program Renewable Energy Systems & Energy Efficiency Improvement Guaranteed Loans & Grants,” <https://www.rd.usda.gov/programs-services/energy-programs/rural-energy-america-program-renewable-energy-systems-energy-efficiency-improvement-guaranteed-loans>

⁴⁸ US Code of Federal Regulations, 13 CFR 121, <https://www.ecfr.gov/current/title-13/part-121>

Solar has become the most popular technology for REAP funding in recent years, accounting for 75% of the total.⁴⁹ More than 900 of about 1,200 grants awarded in fiscal 2022 went toward solar projects, accounting for \$31 million of the total grant funding of \$43 million. The agency also guaranteed 50 loans totaling \$296 million for solar projects, out of a total of \$376 million.

Under the IRA, USDA was provided with \$820 million immediately and an additional \$180 million a year from FY23 through FY27. USDA will host six quarterly competitions to obligate \$1 billion of REAP funding over the next year and a half. The maximum grant size was increased from \$500,000 to \$1 million for renewable energy systems and the maximum federal share of project costs was raised to 50%. Like other agencies, USDA will seek to direct at least 40% of funds to disadvantaged communities under the Justice40 directive.⁵⁰

4.4.4.3 Other

Federal economic development programs aimed at low-income communities and distressed areas may be another source, such as New Market Tax Credits, the Community Development Financial Institutions (CDFI) Fund, and Qualified Opportunity Zones.⁵¹ States and territories may have similar incentive programs.

States and territories may also offer tax breaks for community solar. There are 36 states that offer property tax exemptions and 25 states that offer sales tax exemptions for solar energy.⁵²

4.4.5 Project-Deployment Technical Assistance Strategy (20 points total)

NOFO Section V.A.1.5: *This section will be judged on whether the application has a workforce training and job placement plan (10); provides technical assistance to address interconnection challenges (5); and provides technical assistance on project siting, land-use, permitting, building codes, inspection, and quality control (5).*

Job training and placement strategies were discussed above in Section 4.4.2.5 (Jobs) as a meaningful benefit.

⁴⁹ Noah Wicks, "Solar projects dominate funding from key USDA energy program," Agripulse, November 9, 2022, <https://www.agri-pulse.com/articles/18443-solar-projects-dominate-reap-program-funding>

⁵⁰ USDA, Rural Energy For America Program (REAP), "Investing in America's Agenda," <https://www.rd.usda.gov/inflation-reduction-act/rural-energy-america-program-reap>

⁵¹ US Treasury, "New Market Tax Credit Program," <https://www.cdfifund.gov/programs-training/programs/new-markets-tax-credit>. Treasury, "Community Development Financial Institutions Fund," <https://www.cdfifund.gov/programs-training/programs/cdfi-program>. Internal Revenue Service, "Opportunity Zones," <https://www.irs.gov/credits-deductions/businesses/opportunity-zones>

⁵² SEIA, "Solar Tax Exemptions," <https://www.seia.org/initiatives/solar-tax-exemptions>

Technical assistance is a critical part of projects pipeline building as providing incentives and financing alone will not necessarily yield results. This topic will be covered in depth in CESA’s forthcoming guidance on affordable housing solar and solar+storage.

Note that the Solar for All application can include letters of support with entities that would aid in workforce, interconnection, and development issues (Attachment K).

4.4.6 Equitable Access and Meaningful Involvement Plan (30 points total)

NOFO Section V.A.1.6: *This part of the application will be scored on the following:*

- *Commitment to maximize breadth and diversity of communities and households served, while prioritizing serving the most disadvantaged and low-income households (10)*
- *Formalized structures participatory governance structures for communities to be involved in the design and decision-making (10)*
- *Plans for education, outreach, and community engagement (5)*
- *Strategy for customer acquisition and management through partnerships with community-based organizations and income verification (5)*

In this section, states should present a cogent plan to engage with the communities the Solar for All program is intended to reach. CESA’s DOE-funded Solar with Justice project includes a library of resources and case studies detailing strategies to engage and collaborate with LMI households and disadvantaged communities. [See Solar with Justice’s project page on CESA’s website.](#)

Among the many resources on that page, a good place to start may be the [2021 Community Outreach and Solar Equity Guide for States on Collaborating with Community-Based Organizations](#). This guide was designed as a resource for state energy agencies that are looking to strengthen their relationships with local under-resourced communities or are beginning to engage in energy justice work. It is a collection of best practices, ideas, and principles that provide states a foundation for building equitable relationships with community-based organizations (CBOs) and for working with them on solar development.

Participatory governance is uncommon in current community solar programs, especially subscription-based programs owned by a competitive company, which is the most common model. Such programs have an arms-length relationship with customers, where the customer plays no role in corporate decisions. Participatory governance is more common under the Ownership Models, discussed below, such as cooperatives.

Nonetheless, the NOFO will score applicants on how they create “meaningful partnerships with community-based organizations that reflect the communities the program intends to

benefit and are designed to reach the most disadvantaged or historically marginalized communities.”⁵³

The best strategy for subscription-based programs may be to encourage vendors to have formal relationships with community organizations to help recruit LMI customers, to do education and outreach, and to direct benefits to disadvantaged communities. Consider recruiting public housing authorities to assist in this effort, possibly utilizing technical assistance funding to incentivize them.

The program could also directly fund CBOs. The Illinois Solar for All program, for example, directly funds “grassroots educators” to do outreach in specific communities.⁵⁴ The educators do not directly enroll customers.

Further, the NOFO specifically requires that applications supply a robust strategy for customer acquisition and management for the program, including plans for income verification.⁵⁵ Most LMI subscription programs either subsidize the cost of participation for LMI households, offer additional incentives to vendors to serve LMI households, or require vendors to serve a minimum level of LMI customers. The most vivid example of the latter is **New Jersey**, as mentioned earlier.

New Jersey selected respondents to an RFP that agreed to provide more than half their energy to LMI customers, making it potentially one of the biggest LMI solar projects in the country. Now the winning bidders need to recruit and verify tens of thousands of LMI households, putting a premium on income verification methods.

Income verification is much discussed in LMI solar circles; it should be quick and efficient, low-cost, *unobtrusive*, and yet accurate and verifiable. Community solar programs handle income verification in a common set of ways, each with pros and cons. Note that due to the definition of community solar under the LMI Tax Credit Adder regulations, it is likely that income verification will be required for all projects, including for those that could in theory qualify based on their location in a disadvantaged community only so that eligibility verification based on location only is less relevant for community solar than for single-family homes solar programs. (See Section 2.3 (*Briefly Considering Tax Credits in the Context of Project Eligibility*) for details.

The approach most commonly used by current programs is enrollment in other income-verified government programs, known as “categorical eligibility.” These can include federal or state health care, housing, food, and energy programs, using a variety of

⁵³ See page 57 of the NOFO.

⁵⁴ Illinois Solar for All, “Grassroots Education,” <https://www.illinoissfa.com/grassroots-education/>

⁵⁵ See page 57 of the NOFO.

income levels based on AMI or FPL. For those programs listed in the NOFO, categorical eligibility verification will require an official letter awarded within the past 12 months.

Note that self-attestations are explicitly excluded from available options by Treasury with respect to category 3 and category 4 projects for purposes of accessing the LMI Tax Credit Adder.

The only available options under the NOPR are:

- Categorical eligibility, or,
- If a household is not enrolled in a qualifying program, additional income verification methods can be used such as: paystubs, tax returns, or income verification through crediting agencies and commercial data sources.⁵⁶

This second option is the most accurate, but unfortunately is also the most invasive, as customers may consider the information to be private. It also requires strict document controls to maintain confidentiality. One solution is to ask customers to submit a form to the IRS permitting their data to be shared with the program administrator rather than a vendor.

Section 5. Offsite Ownership Model

The Solar for All guidance provides extra points for programs that promote community ownership and build wealth in low-income and disadvantaged communities. While community solar programs that feature ownership are less common than subscription models owned by developers or utilities, they can be an effective way to maximize benefits.

In this section, we present a program model based on individual ownership of solar panels that are part of a central community solar installation. In the next section, we will present a model in which residents hold shares in the cooperative that owns the solar installation.

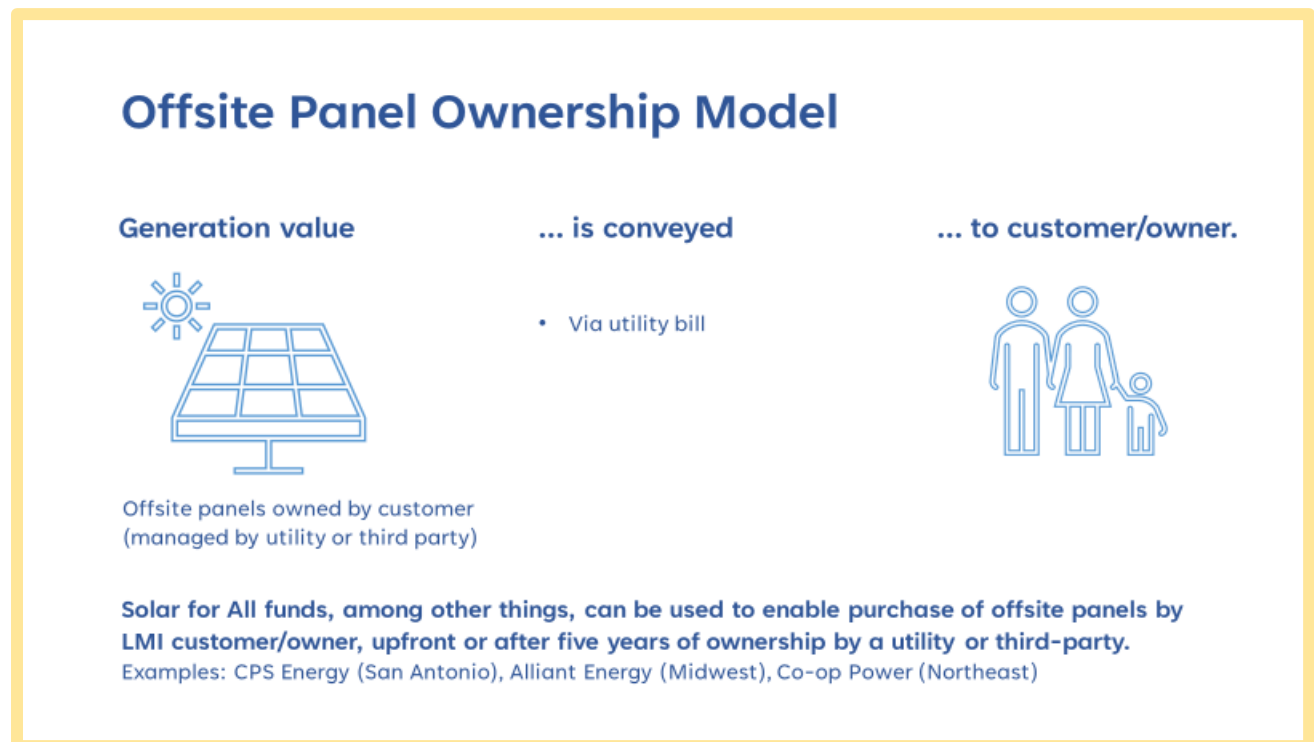
5.1 Model Description

The first model takes literally the idea of community solar being a rooftop solar system installed somewhere else. The customer buys panels that are part of a centrally-located solar plant, built, operated, and maintained by a utility or third-party developer. Power generation from the project is tracked monthly and allocated proportionally to customer/owners. The value of the generation is conveyed to the customer/owner via bill credits, and is valued at or near a retail rate, what some call “virtual net metering,” as if it were located behind the customer’s meter. (See graphic below.)

⁵⁶ See [Federal Register here](#).

A notable feature of this model is that since a commercial or residential customer is the owner, they are responsible for monetizing federal tax credits, which is not necessarily feasible for low-income households. The IRS has determined that offsite solar installations are eligible for the Section 25D tax credit, just as if the system were located on the customer's premises.⁵⁷ However, as discussed below, other tax strategies may be better. In addition, Section 25D tax credits are not eligible for the adders reviewed above so that the maximum tax credit rate would be 30%.

Since customers are the owners of the panels, they can sell them if they choose. Program managers maintain a waiting list for new participants who would buy panels from departing owners.



5.2 Examples

- Some examples of this model include Co-op Power, a non-profit company operating in competitive markets in **New York** and **New England**. The cooperative builds and operates the system, with individuals buying panels.⁵⁸

⁵⁷ CESA, "Private Letter Ruling on the Eligibility of an Individual Panel Owner in an Offsite, Net-Metered Community-Shared Solar Project to Claim the Section 25D Tax Credit," September 1, 2015, <https://www.cesa.org/resource-library/resource/private-letter-ruling-on-the-eligibility-of-an-individual-panel-owner-in-an-offsite-net-metered-community-shared-solar-project-to-claim-the-section-25d-tax-credit>

⁵⁸ Co-op Power, Community Solar, <https://www.cooppower.coop/cos>

- Utilities in regulated markets are also offering this option to customers. CPS Energy, the municipal utility of San Antonio, **Texas**, has done two projects that were developed and are managed by third parties, with ownership options sold to CPS customers. CPS manages billing, transferring the value to customers on their utility bills.⁵⁹
- The **Illinois** Solar for All program also includes “energy sovereignty” options to promote ownership by LMI households, for both rooftop and community solar developments. In their system, the program buys a 15-year supply of SRECs upon energizing the system, which acts as an upfront subsidy. Sovereignty projects are either owned by eligible non-profits or cooperatives, or agree to transfer ownership after taking full advantage of federal incentives. The program offers an additional incentive and sets aside a portion of the budget for sovereignty projects.⁶⁰

5.3 Program Design Options to Deliver Benefits to Low-Income Households and Disadvantaged Communities

A program that directed this approach toward delivering benefits to LMI households would be different than a Subscription Model. There are two significant barriers to LMI customer participation in this model.

- The first is overcoming the initial cost to buying solar panels. LMI households often lack the available cash to buy the panels, or may lack access to credit to finance them.
- The second is that low-income households may not be able to claim the 30% value of the Section 25D tax credits, since they may lack sufficient tax appetite.

We do *not* recommend giving a grant or rebate to LMI household to buy panels in an offsite system, since LMI customers may not have tax appetite to use tax credits and since even if they did, the tax credit monetization strategy is not efficient compared to Section 48 ITC as explained below. While such a program would be simpler than a transfer model, it would forego substantial subsidies, raising the cost of a state program. Instead, solutions can involve subsidizing financing, or an ownership flip.

- **For financing, public funds can be used to purchase or heavily subsidize the first cost.** The Illinois Solar for All “energy sovereignty” policy offers vendors this option, for both on-site and off-site ownership models. CPS Energy used charitable donations to enable participation by LMI households. A public finance program can provide zero-interest loans to households, with accommodating terms such as no minimum credit scores and generous default options.

⁵⁹ CPS Energy, Solar Options, <https://www.cpsenergy.com/en/my-home/savenow/solar.html>

⁶⁰ Illinois Solar For All, *Approved Vendor Manual Version 5.0*, October 20, 2022, page 10, <https://www.illinoisifa.com/app/uploads/2020/06/ILSFA-Approved-Vendor-Manual.pdf>

- **The ownership flip model is more complex but leverages federal incentives far better.** In this model, a third-party company or utility would build and own the community solar system for the first five years of operation, selling power to the LMI household through a power purchase agreement (PPA), a lease, or a subscription.
 - **This structure makes the project commercial, allowing the owner to receive the full value of the tax credits, including adders,** potentially increasing the value of credits from 30 to 70% of eligible costs. During the first five years, the owner can fully capture federal tax incentives as well as accelerated depreciation, which can be a substantial benefit. The ITC “vests” during the first five years after a project is placed in service so that recapture risks end on the sixth year of operation,⁶¹ when systems can be sold to LMI customers, through an early buyout clause in a PPA or lease, at a heavily discounted rate, facilitated by an additional subsidy from a state or territorial program.
 - **The IRA also allows tax-exempt entities to access incentives through direct pay, as introduced above in Section 4.4.4.1 (Tax Credits).** Using direct pay could enable a public-interest organization to serve as the developer-owner of the project, such as an affordable housing operator, a community action agency, a local government, or a rural electric cooperative, and still capture available incentives.⁶² Entities eligible to use direct pay include tax-exempt organizations, States, and political subdivisions such as local governments, Indian tribal governments, Alaska Native Corporations, the Tennessee Valley Authority, rural electric co-operatives, U.S. territories and their political subdivisions, and agencies and instrumentalities of state, local, tribal, and U.S. territorial governments.⁶³
 - Note that transferability, a new feature of the IRA allowing the sale of tax credits to investors is *not* available to entities that are eligible to use direct pay.⁶⁴ It would be available to for-profit developers in lieu of tax equity. It is unclear how workable these transfers are at this time.

To facilitate these models, an LMI solar program would need to provide incentives to the developer to pursue them, such as an additional payment or setting aside a portion of the program budget. The program would also have to provide funds to ensure that the customer receives *at least* a 20 percent bill savings from a PPA/lease/subscription and is

⁶¹ DOE, “Guide to the Federal Investment Tax Credit for Commercial Solar Photovoltaics,” <https://www.energy.gov/sites/prod/files/2020/01/f70/Guide%20to%20the%20Federal%20Investment%20Tax%20Credit%20for%20Commercial%20Solar%20PV.pdf>

⁶² IRS, “Elective Pay and Transferability,” <https://www.irs.gov/credits-deductions/elective-pay-and-transferability>

⁶³ IRS, “Elective Pay and Transferability Frequently Asked Questions: Elective Pay,” <https://www.irs.gov/credits-deductions/elective-pay-and-transferability-frequently-asked-questions-elective-pay#eligibility>

⁶⁴ IRS, “Elective Pay and Transferability,” <https://www.irs.gov/credits-deductions/elective-pay-and-transferability>

able to take ownership of the system after five years, which is longer than the performance period of the Solar for All awards. Any payments for the transfer of ownership would have to be committed before five years, while the transaction itself would have to happen afterwards. One option is to commit the funds to the developer when the initial award is paid out, but to require funds to be held in escrow to be available to fund a later transfer, if that option is allowed by EPA. A second option is to use a different funding source to pay for the transfer in year six. As states consider State Revolving Funds (SRF) as a viable option for long-term investment across various Solar for All programs, low-cost or no co-cost loans to households for purchasing the assets.

5.4 Guidance for Solar for All Application

Reminder: This section is organized to discuss in detail the specific aspects that applications will be scored on. They are discussed in more detail in Section 4.4 above for the Subscription Model. **In this section of the Ownership Model, we only discuss aspects that vary from or are additional to the Subscription Model.** If you plan to include this Ownership Model in your application, you should also consider the issues discussed in the Subscription Model section above.

5.4.1 Impact Assessment (20 points total)

NOFO Section V.A.1.1: *This section of the application must set reasonable and ambitious targets for program output and outcome metrics (10 points) and justifies how the proposed outcome metrics are reasonably achievable (10).*

To set “reasonable and ambitious targets for program output and outcome metrics” may be difficult to do with precision. The number of LMI households willing to commit to the responsibilities of ownership is likely to be smaller than those willing to subscribe to a community solar product. In theory it has a larger potential audience than rooftop systems owned by LMI homeowners since renters can participate. However, the relative novelty of the product may limit participation. While CPS Energy in San Antonio quickly sold 6.2 MW of capacity in two rounds, for only \$1.09 per Watt, about a quarter the cost of rooftop systems,⁶⁵ buyers were not primarily LMI households.

5.4.2 Meaningful Benefits Plan (30 points total)

NOFO Section V.A.1.2: *This section of the application will be judged based on five meaningful benefits: Bill Savings (10 points), Access (5), Resiliency (5), Ownership (5) and Jobs (5). The optional Attachment I includes letters of support from potential partners.*

⁶⁵ CPS Energy, Newsroom: Roofless Solar Brings Affordable Green Power to San Antonio, July 7, 2016, <https://newsroom.cpsenergy.com/roofless-solar-brings-affordable-green-power-san-antonio/>

In terms of the five meaningful benefits, this model would score highly on wealth-building through ownership. The size of the subsidy for participation should be set to deliver at least 20% bill savings, comparable to those for rooftop systems.

5.4.3 Distributed Solar Market Strategy (30 points total)

NOFO Section V.A.1.3: *This part of the application focuses on strategies to overcome barriers, especially through the use of supportive policies. It will be scored on whether certain supportive policies are present, are a barrier or an asset, and if barriers exist, how they will be addressed. The policies include: net metering (6 points); third-party ownership (5 points); interconnection processes (5 points); renewable portfolio standards (RPS) (5 points); community solar policies (4 points); and major regulatory differences across jurisdictions (5 points).*

If the policies need to be improved or if a jurisdiction lacks them, the application “will be evaluated on (...) statements of support from governors’ offices, public utility commissions, and other energy market stakeholders.”

The most important enabling policy for this model is delivery of bill credits to the customer at an appropriate value. To make it similar to rooftop systems, the energy could be valued according to state net metering policies, making it easier to hit the minimum bill savings of 20%. Alternatively, the bill credits could be valued at the cost of energy, while the customer continues to pay delivery charges, with savings ensured through Solar for All subsidies. Either way the customer would have to pay a small operations and maintenance fee to the manager of the solar plant for the entire term of ownership.

Utilities may be in the best position to be the manager of this ownership model. They can efficiently deliver the bill credits through single bills. They have good communication channels and customer data to identify LMI households or customers with arrearages. Utilities may also be seen by customers as more trustworthy than independent marketers – the fact that a customer is buying a system that is located off-premises, with an ownership transfer will happen six years into the future, introduces an element of abstraction and uncertainty that may turn off some potential buyers. Having the offer come from a regulated utility may reduce that concern and allow state regulators to keep a closer tab on transactions.

5.4.4 Financial Assistance Strategy (30 points total)

NOFO Section V.A.1.4: *This part of the application will be judged on whether the applicant has an effective financial assistance strategy (10); whether it complements and does not duplicate existing sources of capital and financial assistance, will be durable, leverages other funding sources, and engages capital providers (10); and whether it considers long-term impacts (5). A further five points will be given if it includes a plan for*

storage and enabling upgrades (5), which are less relevant for offsite community solar than for rooftop installations.

To maximize public funds for this ownership model, we recommend promoting business structures that take advantage of the Section 48 ITC; provide low-cost subscriptions, PPAs, or leases to customers for the initial years; and then support a transfer of ownership after federal tax incentives have been tapped out.

The program could either select vendors to participate in this option through a formal RFP or could simply offer incentives to registered vendors that choose this option and document that they are signing up eligible customers.

The program may consider three combined program measures:

- a) Creating an “ownership bonus” payment to encourage vendors to pursue the Offsite and Cooperative Ownership Models;
- b) Reserving part of the program budget to support ownership projects; and
- c) Creating a preference for ownership projects if requests exceed available funding.

The program would create a standard contract that vendors would be required to use with customers.

If the entire incentive payment is made upfront, upon energization of the system, then a contract between the vendor and the customer would include the terms for the transfer of ownership, and the funds could be held in escrow to cover the cost of the early buyout. The terms of the contract would specify the price and timing of the transfer of ownership, the transfer of warranties and insurance, and the cost of ongoing monitoring, maintenance, and insurance. We do not know for certain that such an escrow structure would be acceptable to EPA. If it were, an interest-bearing account could be used, with interests to be reinvested in the program to support additional households, or to fund specific parts of the model, such as technical assistance.

When the transfer of ownership happens, it would be reported to the Program Administrator along with documentation of how it met the terms of the contract. If the transfer does not happen, the administrator would be allowed to claw back any ownership incentives given to the vendor.

If the administrator were able to hold on to ownership funds until the time of transfer, then the vendor and the customer could return to the administrator at the time of transfer for additional funds, rather than the vendor holding the funds in an escrow account. In this option, an initial incentive payment would cover the first 5 years of operation, with a subsequent payment to cover the sale to the customer plus any ongoing monitoring, maintenance, and insurance fees.

5.4.5 Project-Deployment Technical Assistance Strategy (20 points total)

NOFO Section V.A.1.5: *This section will be judged on whether the application has a workforce training and job placement plan (10); provides technical assistance to address interconnection challenges (5); and provides technical assistance on project siting, land-use, permitting, building codes, inspection, and quality control (5).*

The project deployment aspects of this model, such as workforce development, interconnection, and siting, are not significantly different than other models. What is unique is the customer ownership aspect, which will likely require significant customer education and consumer protection, as discussed in the next section.

Technical assistance is a critical part of projects pipeline building as providing incentives and financing alone will not necessarily yield results. This topic will be covered in depth in CESA's forthcoming guidance on affordable housing solar and solar+storage.

5.4.6 Equitable Access and Meaningful Involvement Plan (30 points total)

NOFO Section V.A.1.6: *This part of the application will be scored on the following:*

- *Commitment to maximize breadth and diversity of communities and households served, while prioritizing serving the most disadvantaged and low-income households (10)*
- *Formalized structures participatory governance structures for communities to be involved in the design and decision-making (10)*
- *Plans for education, outreach, and community engagement (5)*
- *Strategy for customer acquisition and management through partnerships with community-based organizations and income verification (5)*

As mentioned, the novelty of this model could cause confusion and uncertainty among customers. To address this barrier, the vendors and program administrator should work with community organizations to educate potential LMI customers about the benefits of the model. This should include advertising, community workshops, and a customer support line, at a minimum.

To further reduce concerns, the program should adopt a clear and strong consumer protection policy, which vendors would be required to follow. This includes standard contracts clearly stated in the language of the customer, and single consolidated billing. Up-front fees should be minimized or eliminated, and bill savings should be guaranteed to be greater than 20% of the average utility bill in the service territory, as required by the NOFO, net of fees for ongoing operations, maintenance, and insurance.

Customers should be able to withdraw from the program without penalty, before transfer of ownership happens; after transfer happens, customers should be able to sell their

system back to the program manager at a price that reflects any unsubsidized value remaining, or to another qualified customer.

Section 6. Cooperative Ownership Model

In this section, we introduce a second option for ownership, via a cooperative.

6.1 Model Description

The second ownership model is a cooperative owned by members of a community, which in turn owns and operates community solar projects (see graphic). The member/owners are able to buy shares in the cooperative and thus earn a dividend, and they are able to subscribe to the output of the system. The cooperative can offer other services, such as energy efficiency products. Cooperatives are organized under state laws and can be for-profit or non-profit.

Solar for All program funds would enable participation by LMI households, such as by subsidizing membership fees, the cost of subscriptions, and the purchase of shares.



6.2 Examples

The clearest example of this model is Cooperative Energy Futures (CEF), based in **Minnesota**.⁶⁶

⁶⁶ Cooperative Energy Futures, <https://www.cooperativeenergyfutures.com/>

Currently, CEF has over 1000 member-owners who pay \$25 to join, with 700 subscribing to take solar electricity via bill credits. Other members participate just in energy efficiency programs, while some are just investors but not solar subscribers. Members can buy Preferred Stock when the co-op offers it. Member-owners also exercise control of the co-op through voting for board members and on key issues.

CEF has secured \$1,675,000 in investments from the community since 2017 and paid their first dividend to members in 2020. Annual dividends range from 5% to 8%. Member-owners can sell their shares back to the co-op if they wish. Community solar subscription terms are for 25 years but members can cancel at any time.

The co-op owns eight solar projects (6.9 MW) and is developing another seven to support a goal of doubling membership. CEF serves about 9% of the residential community solar market in Minnesota. While Minnesota only recently adopted incentives for LMI participation in community solar, a University of Minnesota study found that about 40% of CEF members have income levels below 80% of AMI.

CEF is a for-profit cooperative, with dividends paid to member-owners. CEF has a low tax appetite, so to best capture federal tax credits, they had a tax equity partner for the first five years of operation for each project, then performed a “Minnesota flip” to take ownership.⁶⁷

6.3 Program Design Options to Deliver Benefits to Low-Income Households and Disadvantaged Communities

The first step will be to ensure that the cooperative itself is able to participate in community solar markets in a state or territory. If participation is limited by a competitive process, a program may want to give cooperatives preferential access, especially those that serve LMI customers or provide other meaningful benefits.

Once a cooperative is ensured of participating in the program, Solar for All incentives could be focused on enabling the cooperative to provide greater participation and benefits to LMI households.

A community solar cooperative could sell shares and solar subscriptions to LMI and non-LMI customers, as well as to businesses and other local investors. To ensure LMI household participation, a cooperative would need to actively recruit LMI customers, addressing participation barriers, and offer a substantial bill saving, along with ownership benefits.

⁶⁷ Daniel A. Yarano and Christina Brusven, Fredrikson & Byron, P.A., “The Minnesota Flip Business Model: How the Flip Works,” https://www.windustry.org/community_wind_toolbox_12_the_minnesota_flip

A cooperative is able to pursue any kind of deployment model. It could for example own a solar installation on an affordable housing complex, with residents getting the benefits of being cooperative members.

A bonus incentive could be offered to a community solar cooperative to recruit eligible customers, and used to finance the purchase of shares of ownership in the co-op along with a solar power subscription. The cooperative itself would handle development and marketing, finance and construction, and the capture of any development incentives, including a relationship with a tax equity partner on behalf of its member/owners.

6.4 Guidance for Solar for All Application

Reminder: This section is organized to discuss in detail the specific aspects that applications will be scored on. They are discussed in more detail in Section 4.4 above for the Subscription Model. **In this section of the Ownership Model, we only discuss aspects that vary from or are additional to the Subscription Model.** If you plan to include this Ownership Model in your application, you should also consider the issues discussed in the Subscription Model section above.

6.4.1 Impact Assessment (20 points total)

NOFO Section V.A.1.1: *This section of the application must set reasonable and ambitious targets for program output and outcome metrics (10 points) and justifies how the proposed outcome metrics are reasonably achievable (10).*

Setting “reasonable and ambitious targets for program output and outcome metrics” could be based on the experience of Cooperative Energy Futures. After 10 years of working on community solar, they have around 1000 member/owners, own 8 projects, and have 7 more under development. Notably, the Minnesota Community Solar Garden policy did not specifically promote cooperatives or community ownership. A program that did offer specific incentives, technical support, or other preferences for cooperatives could likely see more of a response.

6.4.2 Meaningful Benefits Plan (30 points total)

NOFO Section V.A.1.2: *This section of the application will be judged based on five meaningful benefits: Bill Savings (10 points), Access (5), Resiliency (5), Ownership (5) and Jobs (5). The optional Attachment I includes letters of support from potential partners.*

In terms of the five meaningful benefits, this model would score highly on wealth-building through ownership.

The cooperative as an institution may also be well-suited to provide job training and placement services, such as by having prospective workers connect to cooperative

projects. The cooperative could partner with local unions to provide apprenticeship opportunities, for example.

In line with the NOFO, the size of the subsidy for LMI subscriptions should be set to ensure at least 20% bill savings.

6.4.3 Distributed Solar Market Strategy (30 points total)

NOFO Section V.A.1.3: *This part of the application focuses on strategies to overcome barriers, especially through the use of supportive policies. It will be scored on whether certain supportive policies are present, are a barrier or an asset, and if barriers exist, how they will be addressed. The policies include: net metering (6 points); third-party ownership (5 points); interconnection processes (5 points); renewable portfolio standards (RPS) (5 points); community solar policies (4 points); and major regulatory differences across jurisdictions (5 points).*

If the policies need to be improved or if a jurisdiction lacks them, the application “will be evaluated on (...) statements of support from governors’ offices, public utility commissions, and other energy market stakeholders.”

The impact of energy policies on the development of a cooperative community solar project would be similar to any other community solar project. Refer to this section under the Subscription Model for more detail.

The unique difference would be in local policies about cooperatives. Cooperatives are defined and regulated at the state level, with a wide variety of treatment among states.⁶⁸ For more detail on how a community solar cooperative would be handled under current law, you will have to consult statutes for your state or territory. The US Department of Agriculture has extensive information on local agricultural cooperatives across the country; a local cooperative development center may be the best source of knowledge in your state.⁶⁹

⁶⁸ National Cooperative Business Association, State Cooperative Statute Library, updated October 2019, <https://ncbaclusa.coop/resources/state-cooperative-statute-library/>

⁶⁹ USDA, List of Rural Cooperative Development Centers, <https://www.rd.usda.gov/files/RD-CoopDevelopmentCenters.pdf>

6.4.4 Financial Assistance Strategy (30 points total)

NOFO Section V.A.1.4: *This part of the application will be judged on whether the applicant has an effective financial assistance strategy (10); whether it complements and does not duplicate existing sources of capital and financial assistance, will be durable, leverages other funding sources, and engages capital providers (10); and whether it considers long-term impacts (5). A further five points will be given if it includes a plan for storage and enabling upgrades (5), which are less relevant for offsite community solar than for rooftop installations.*

The most fundamental design question for a state or territorial agency is whether to actively encourage cooperatives, or to simply allow them to participate. Since cooperatives are a pathway to ownership for LMI households and communities, the programmatic element may be couched more as one to encourage ownership. Cooperatives enable ownership by individuals more readily than other business models do, such as limited liability corporations (LLCs) and partnerships. Strong incentives to encourage ownership could be attractive to a cooperative model.

However, community solar cooperatives are rare, and new ones would likely need to be created to respond to a Solar for All community solar offering. An agency should consider doing education and outreach, specifically on how cooperative business models can be formed and applied to community solar with meaningful benefits. Note, once more, that Treasury’s LMI Tax Credit Adders proposed administration processes would prioritize some projects for tax credit allocation based on ownership criteria. One such prioritized owner category is “renewable energy cooperative” defined as an entity that owns at least 51 percent of a solar facility and is either:

- (1) A consumer or purchasing cooperative controlled by its members who are low-income households as defined in [Section 48\(e\)\(2\)\(C\)](#) of the Internal Revenue Code meaning households with income of:
 - a. Less than 200 percent of the poverty line,⁷⁰ or
 - b. Less than 80 percent of area median gross income⁷¹ with each member having an equal voting right, or
- (2) A worker cooperative controlled by its worker-members with each member having an equal voting right.

Creating partnerships may be the best way to explore this option, with participation by state agencies, cooperative centers, community organizations, and related existing cooperatives, such as agricultural or rural electric co-ops that may be interested in

⁷⁰ As defined in Section 2110(c)(5) of the Social Security Act ([42 U.S.C. 1397j\(c\)\(5\)](#)).

⁷¹ As determined under section [142\(d\)\(2\)\(B\)](#) of the Internal Revenue Code

expanding their scope. Refer to Sections 2.3 and 4.4.4.1 above for additional details on tax credits and how they influence program designs.

6.4.5 Project-Deployment Technical Assistance Strategy (20 points total)

NOFO Section V.A.1.5: *This section will be judged on whether the application has a workforce training and job placement plan (10); provides technical assistance to address interconnection challenges (5); and provides technical assistance on project siting, land-use, permitting, building codes, inspection, and quality control (5).*

Project development issues like interconnection agreements and site control would not be unique for cooperative projects, so are discussed under the Subscription Model.

There could be additional opportunities for workforce development, as discussed in the next section on “meaningful involvement.”

Technical assistance is a critical part of projects pipeline building as providing incentives and financing alone will not necessarily yield results. This topic will be covered in depth in CESA’s forthcoming guidance on affordable housing solar and solar+storage.

6.4.6 Equitable Access and Meaningful Involvement Plan (30 points total)

NOFO Section V.A.1.6: *This part of the application will be scored on the following:*

- *Commitment to maximize breadth and diversity of communities and households served, while prioritizing serving the most disadvantaged and low-income households (10)*
- *Formalized structures participatory governance structures for communities to be involved in the design and decision-making (10)*
- *Plans for education, outreach, and community engagement (5)*
- *Strategy for customer acquisition and management through partnerships with community-based organizations and income verification (5)*

A cooperative would score high as an effective form of community engagement. Cooperatives are democratically-operated organizations, where members get equal voting power, an important part of the “energy democracy” concept.⁷² The NOFO specifically scores 10 points for “participatory governance.”

Co-ops are essentially community-based organizations (CBOs) themselves, and can have close associations with other community organizations.

One alliance that cooperatives could be well-suited for, and would be important for the NOFO, is to integrate job training and placement programs with project development.

⁷² See for example: Energy Democracy Project, <https://energydemocracy.us/>.

Cooperatives could have formal alliances with local unions, community colleges, and other jobs agencies.

Alliances with agricultural co-ops may also help with siting and permitting solar projects in rural areas, since agricultural co-op members are typically farmers and landowners.

Section 7. Energy Assistance Model

Solar programs intended to benefit LMI households could be considered just another form of energy assistance, along with LIHEAP, Weatherization Assistance Program (**WAP**), Percentage of Income Payment Plans (**PIPP**), and other programs. Taking advantage of existing programs infrastructure can be an efficient way to deliver benefits. Steering the policy and financial supports offered to solar towards recipients of energy assistance programs can be a way to reach more people in need, and to ensure that those that can most benefit from savings and other meaningful benefits do receive them.

7.1 Model Description

The key efficiency of this model is the ability to identify and recruit eligible customers, since they are already enrolled in other energy assistance and social service programs. Customer acquisition for subscription-based community solar is already a significant expense; reaching low-income customers adds another layer of difficulty.

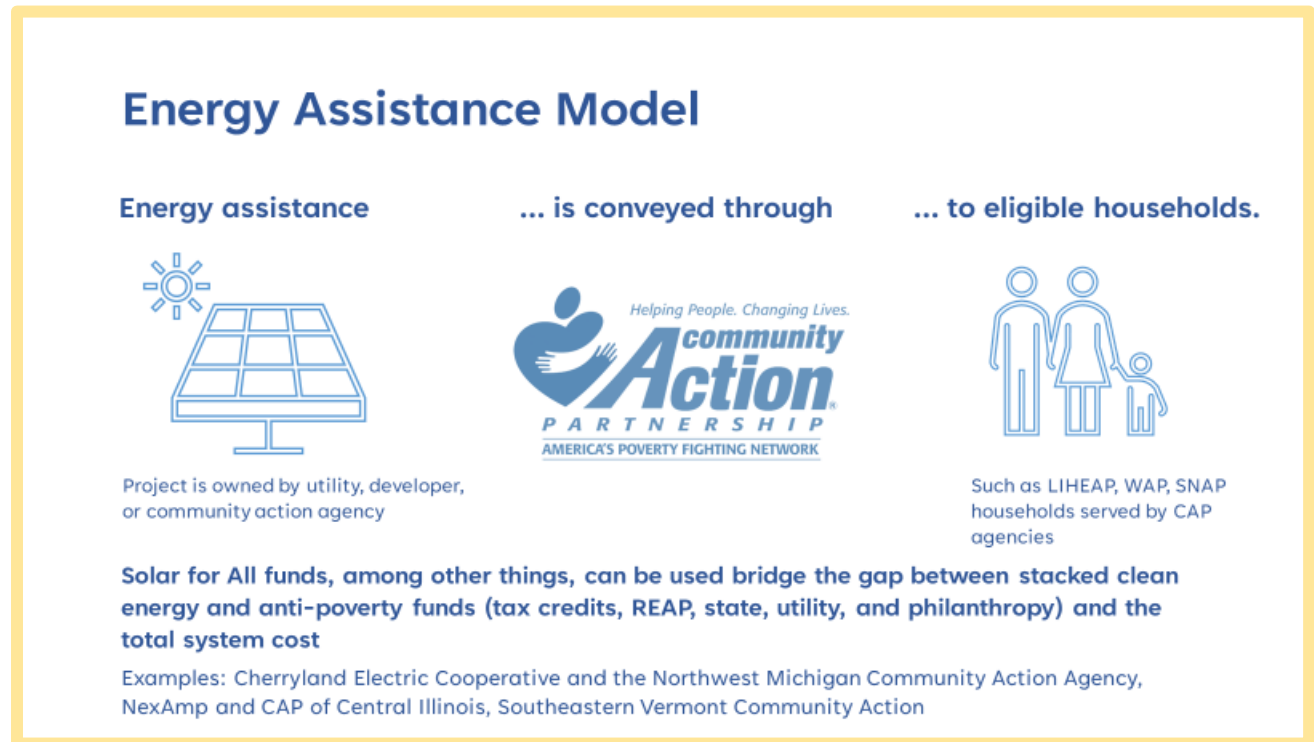
In the Energy Assistance Model, there are two significant roles: the project developer/owner, and the subscription manager. The solar project could be developed and owned by a utility, an independent company, or by a social service provider like a community action agency or affordable housing owner (see graphic). The social service provider plays the role of subscription manager, conveying the benefits of the project to their clients, either as a cash payment or as a utility bill credit in collaboration with the utility managing the billing.

There are more than 1,000 CAAs in the US, serving communities in every state, Puerto Rico, and the District of Columbia. Community Action Agencies (**CAAs**) often administer the Department of Energy's WAP, providing free weatherization services to local low-income households, and the Department of Health and Human Services' (**HHS**) LIHEAP program, which subsidizes customer utility bills.

LIHEAP is a federal block grant to states, tribes and territories, who then redistribute the funds to an administrator. At least 30 states delegate LIHEAP administration to CAAs; in 13 states counties are the primary local administrator; and in other states administration is centralized at the state level or is provided through a mix of nonprofits.⁷³

⁷³ LIHEAP Clearinghouse, State and Local LIHEAP Administering Agencies, <https://liheapch.acf.hhs.gov/state>

Affordable housing developments are present across the country, in many forms with many financial arrangements. DOE's National Community Solar Partnership (NCSP) convened the Multifamily Affordable Housing (MFAH) Collaborative in 2020 with the aim of expanding access to solar energy for MFAH residents nationwide by working with providers to identify and overcome barriers to community solar deployment.⁷⁴



7.2 Examples

Energy Assistance Models have been adopted in a variety of situations.

The Imperial Irrigation District (IID), a publicly-owned utility in **California**, built a 30 MW solar project entirely dedicated to customers on their Residential Energy Assistance Program. The project serves about 12,000 customers, and provide an additional savings beyond the utility's current bill discount program.⁷⁵

In **Michigan**, three pilot projects organized by the state's energy agency brought together local CAAs and electric utilities. The CAAs identified and recruited subscribers, in conjunction with their home weatherization services. The local utilities built or contracted for solar power and managed billing. The state, the utilities, and the federal government

⁷⁴ DOE, Multifamily Affordable Housing (MFAH) Collaborative, <https://www.energy.gov/communitysolar/multifamily-affordable-housing-collaborative>

⁷⁵ Imperial Irrigation District, Press release: "IID & Citizens commission community solar project dedicated to low-income customers," September 25, 2019, <https://www.iid.com/Home/Components/News/News/709/30>

provided funding. The program serves about 135 households, with bill savings of about \$30 per month.⁷⁶

In **Illinois**, community solar vendor Nexamp is working with three CAAs to provide subscriptions to LMI households, under the Illinois Solar for All program. To date, the effort has recruited 250 households, with each saving about \$250 per year. Nexamp also pays \$42,000 to the agencies for their administrative costs.⁷⁷

7.3 Program Design Options to Deliver Benefits to Low-Income Households and Disadvantaged Communities

Since the goal of the Energy Assistance Model is to deliver the maximum amount of benefits to LMI customers, the project developer should seek to cover the full cost of construction if possible, and to minimize operating costs. Multiple state and federal incentives can be stacked, such as the investment tax credit and bonuses combined with other funding sources like the USDA Rural Energy for America Program (REAP), state and local funds, foundation grants, and of course the EPA Solar for All funds. Affordable housing owners may be able to further tap the Low-Income Housing Tax Credit (LIHTC) for community solar.⁷⁸

Once financing is arranged and maximized, integrating community solar with other assistance programs is the best way to minimize administrative costs. The most straightforward approach is to provide subscriptions managed or facilitated by CAAs, affordable housing managers, and other entities. Customers enrolled in WAP and LIHEAP, for example, can sign up or more simply be opted in, and given the chance to opt out. **To make the sign-up process easier, DOE is currently working with HHS on protocols and a software tool to connect LIHEAP customers to community solar subscriptions.**⁷⁹

CAAs or housing managers may or may not be interested in developing and owning the solar project itself. Solar development is a new skill and responsibility; on the other hand, building and managing affordable housing is not completely different – both involve financing, construction management, and engagement with government incentives and regulation. Program incentives to encourage ownership by CAAs and/or their clients would add complexity but would likely score additional points in the EPA Solar for All

⁷⁶ Anna Adamsson, CESA, “Partnering to Reduce Energy Burden: A Michigan Community Solar and Weatherization Pilot,” June 2023, <https://www.cesa.org/resource-library/resource/partnering-to-reduce-energy-burden-michigan/>

⁷⁷ NCSP, “Community Action Conversation: LIHEAP & Community Solar Case Study” (webinar video), September 29, 2022, <https://www.youtube.com/watch?v=zppGG2j0YLE>

⁷⁸ Michael Novogradac, “Developers, Owners Should Consider Solar for LIHTC Properties,” *Novogradac Journal of Tax Credits*, November 1, 2022, <https://www.novoco.com/periodicals/articles/developers-owners-should-consider-solar-lihtc-properties>

⁷⁹ DOE, Low-Income Clean Energy Connector, <https://www.energy.gov/communitysolar/low-income-clean-energy-connector>

competition. (See Section 5 and Section 6 above for further discussion of ownership options for LMI households.)

Utilities and independent developers could certainly play the role of developer and owner, in coordination with CAAs or housing manager, and utilities can further manage the customer bill crediting process. Utilities that offer rate or bill discount programs may be able to execute the entire model, as in the example of the Imperial Irrigation District above.

7.4 Guidance for Solar for All Application

The most straightforward administrative strategy for the state or territory agency would be to simply offer construction grants to CAAs and affordable housing developers that agree to pass the full benefits along to eligible LMI households.

As mentioned earlier, community solar projects dedicated to LMI communities could capture up to 70% of project costs from the ITC and bonus adders like the Low-Income Residential Building Project or Qualified Low-Income Economic Benefit Project. A Solar for All grant covering the final 30% would result in total cost coverage. Though some of these bonuses are capped, other sources may also be available, like the USDA REAP grant for projects in rural areas, or other state or federal development policies such as Qualified Opportunity Zones.⁸⁰ Other financing options include low-or no-cost loans from a State Revolving Fund or a state green bank, or guarantees to support private sector loans.

7.4.1 Impact Assessment (20 points total)

NOFO Section V.A.1.1: *This section of the application must set reasonable and ambitious targets for program output and outcome metrics (10 points) and justifies how the proposed outcome metrics are reasonably achievable (10).*

In earlier models, we suggested linking program targets to LIHEAP enrollment, to give a sense of how other LMI energy programs have scaled over time. In this model, linking to LIHEAP and WAP is inherent in the design, to take advantage of the existing program infrastructure and relationships. The total number of households enrolled in energy assistance programs in a jurisdiction can thus be counted as an ambitious initial target. Numbers for each jurisdiction can be found in the “state snapshots” page at the LIHEAP Clearinghouse.⁸¹

⁸⁰ Internal Revenue Service, “Opportunity Zones,” <https://www.irs.gov/credits-deductions/businesses/opportunity-zones>.

⁸¹ US Department of Health and Human Services, LIHEAP Clearinghouse, “State Snapshots,” at <https://liheapch.acf.hhs.gov/snapshots.htm>.

Given the likely ease of reaching already-enrolled LIHEAP and WAP participants, the most likely constraint is going to be the lack of funds to build Energy Assistance solar projects. Funding strategies are discussed below in the section on “Financial Assistance Strategy.”

7.4.2 Meaningful Benefits Plan (30 points total)

NOFO Section V.A.1.2: *This section of the application will be judged based on five meaningful benefits: Bill Savings (10 points), Access (5), Resiliency (5), Ownership (5) and Jobs (5). The optional Attachment I includes letters of support from potential partners.*

These were discussed at length in earlier sections. The strengths of the Energy Assistance Model are bill savings and access. The efficiency of customer acquisition and subscription management will result in lower administrative costs, and thus more benefits going to the end-use customer. Access will be the simplest as well, since eligible LMI customers are already enrolled in energy assistance programs.

CAAs may also be in an advantageous position to facilitate community ownership and wealth building. While the CAA itself could own the solar project, and thus expand its assets for program delivery, it could also pursue the Ownership strategies discussed earlier, and transfer ownership to clients through a cooperative or a buyout of PPAs/leases.

Additional options could be offered, as discussed in earlier sections.

7.4.3 Distributed Solar Market Strategy (30 points total)

NOFO Section V.A.1.3: *This part of the application focuses on strategies to overcome barriers, especially through the use of supportive policies. It will be scored on whether certain supportive policies are present, are a barrier or an asset, and if barriers exist, how they will be addressed. The policies include: net metering (6 points); third-party ownership (5 points); interconnection processes (5 points); renewable portfolio standards (RPS) (5 points); community solar policies (4 points); and major regulatory differences across jurisdictions (5 points).*

If the policies need to be improved or if a jurisdiction lacks them, the application “will be evaluated on (...) statements of support from governors’ offices, public utility commissions, and other energy market stakeholders.”

These policies too have been discussed in previous sections. Depending on how projects are structured, the Energy Assistance Model could avoid some of the barriers that may exist, such as net metering and third-party ownership. A utility-owned project dedicated to energy assistance programs, for example, could be a wholesale distributed generation (WDG) project interconnected on the utility’s own distribution system, thus streamlining the process.

On the other hand, a rooftop installation on an affordable housing development, owned by a third-party and net metered, could encounter most of the policies.

One notable impact could come from the renewable portfolio standard (RPS), which is present in 31 states. RPS programs require power sellers to submit renewable energy credits (RECs) as proof of compliance, so they have a monetary value. RECs generated by a community solar project could be retained by or sold to a power seller (like a utility) as proof of compliance with the RPS. This could provide an additional funding stream for the community solar project.

Applicants should discuss the status of each of these policies in their jurisdiction and how they may help or hinder the specific business model being promoted. If policy changes are necessary, a letter of support from regulators, leading legislators (such as utility committee chairs), and the governor's office would be helpful, included as Attachment J.

7.4.4 Financial Assistance Strategy (30 points total)

NOFO Section V.A.1.4: *This part of the application will be judged on whether the applicant has an effective financial assistance strategy (10); whether it complements and does not duplicate existing sources of capital and financial assistance, will be durable, leverages other funding sources, and engages capital providers (10); and whether it considers long-term impacts (5). A further five points will be given if it includes a plan for storage and enabling upgrades (5), which are less relevant for offsite community solar than for rooftop installations.*

To set a budget for the Energy Assistance strategy, we present here a simple calculation based on some basic financial assumptions. Assuming that 50% of project costs are covered by the ITC and bonuses, and an additional 20% is covered by other sources (such as further ITC bonuses, REAP grants, state, local and philanthropic sources), that leaves a balance of 30% of project costs to be covered by Solar for All funds.

If ground-mounted community solar projects of less than 5 MW cost around \$2 per Watt, the cost of the final 30% would be 60¢ per Watt, or \$600,000 for each megawatt of capacity.⁸² Each million dollars of a Solar for All grants budget, then, would cover 1.67 MW of project capacity, enough to supply 334 households with 5 kW of capacity each, or around 6,500 kWh per year, or about 60% of the average residential customer annual demand. At U.S. average retail rates, that is worth about \$1,000 per customer per year.⁸³

⁸² David Feldman, et al., NREL, *Spring 2023 Solar Industry Update*, April 27, 2023, <https://www.nrel.gov/docs/fy23osti/86215.pdf>

⁸³ US EIA, *Electric Power Monthly: Table 5.6.A. Average Price of Electricity to Ultimate Customers by End-Use Sector*, https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a

These numbers will vary by location, so each applicant should present its own math in the Solar for All application, and set variables as desired. For example, the size of the allocation per customer may be larger or smaller; electricity rates vary by state and utility; and solar development costs will vary.

If these funding strategies are not able to fully pay for installation and operations of a community solar project, then LMI households could be asked to pay for part of their solar allowance (while still requiring substantial bill savings), or saving levels can be reduced (but not below the minimum set by EPA), or non-LMI customers could pay market rates to subscribe to part of the output of the plant (such as a commercial customer acting as an “anchor tenant”).⁸⁴

7.4.5 Project-Deployment Technical Assistance Strategy (20 points total)

NOFO Section V.A.1.5: *This section will be judged on whether the application has a workforce training and job placement plan (10); provides technical assistance to address interconnection challenges (5); and provides technical assistance on project siting, land-use, permitting, building codes, inspection, and quality control (5).*

CAAs may be uniquely suited for integrating workforce development programs into community solar, since many already offer such programs as part of their economic development mission. Linking them with existing solar training programs (as discussed in Section 4.4.2.5 (*Jobs*)) may be an efficient way to add specific expertise to their existing programs. Other technical issues are not unique to the Energy Assistance Model and are discussed above.

Technical assistance is a critical part of projects pipeline building as providing incentives and financing alone will not necessarily yield results. This topic will be covered in depth in CESA’s forthcoming guidance on affordable housing solar and solar+storage.

7.4.6 Equitable Access and Meaningful Involvement Plan (30 points total)

NOFO Section V.A.1.6: *This part of the application will be scored on the following:*

- *Commitment to maximize breadth and diversity of communities and households served, while prioritizing serving the most disadvantaged and low-income households (10)*
- *Formalized structures participatory governance structures for communities to be involved in the design and decision-making (10)*
- *Plans for education, outreach, and community engagement (5)*

⁸⁴ NREL, “Community Solar Program Design and Subscription Models,” April 2022 (Revised June 2023), <https://www.nrel.gov/docs/fy23osti/86242.pdf>

- *Strategy for customer acquisition and management through partnerships with community-based organizations and income verification (5)*

The Energy Assistance Model is inherently tied in to many of these activities, given the anti-poverty mission of community action agencies, affordable housing owners, and other energy assistance program managers.

To fully pursue all of these options, a project may want to form a community advisory council consisting of program beneficiaries (such as CAA clients and affordable housing tenants), who could provide input on development and operations. Even if clients and tenants are automatically enrolled, rather than choosing to subscribe, the project should be publicized to raise awareness and build a sense of participation.

The applicant can include Attachment L, with letters of support from potential partnerships.

Appendix A: Points Structure for the GGRF Solar for All Competition Program Narrative and Self-Evaluation Form

This appendix summarizes the distribution of points available for the program narrative part of your application (175 points total). In addition to the program narrative, applicants also have to submit a program administration narrative (50 points) and a programmatic capabilities and environmental results past performance (20 points) which should not be neglected.

The rightmost column has been left empty for you to use to evaluate your own application and prioritize which elements to bolster to make your application more competitive. You could either use the self-evaluation column by grading your own application, or (recommended) assign yourself a low, medium, or high grade.

Note that the names of the sub-categories are our own interpretation of what is being requested by EPA within the NOFO. You should refer to the NOFO for details and accuracy.

Category	Sub-Category	Points	Self-Evaluation
Impact Assessment		20	
Meaningful Benefits		30	
	Savings	10	
	Access	5	
	Outage Resilience	5	
	Ownership	5	
	Workforce Investment	5	

Category	Sub-Category	Points	Self-Evaluation
Distributed Solar Market Strategy		30	
	NEM	6	
	TPO	5	
	Interconnection	5	
	RPS	5	
	Community Solar Landscape	4	
	Jurisdictional Landscape	5	
Financial Assistance		30	
	Maximize Number of Beneficiaries	10	
	Strategic and Comprehensive	10	
	Prudence of Storage and Enabling Upgrades	5	
	Long-Term Planning	5	
Project Deployment Technical Assistance		20	
	Workforce Training and Development	10	
	Interconnection Challenge Plan	5	
	Technical Assistance	5	

Category	Sub-Category	Points	Self-Evaluation
Equitable Access and Meaningful Involvement Plan		30	
	Community Diversity Support	10	
	Participatory Governance	10	
	Education and Outreach Plan	5	
	Customer Acquisition	5	
Program Planning Timeline and Workplan		15	
	Timeliness	5	
	Coordination	5	
	Planning for Refinement and Commitment to Best Practices	5	
Program Narrative Total		175	

Appendix B: NOFO Eligibility, Tax Credits, and Maps

Formal Definitions in the NOFO

Under the NOFO, low-income and disadvantaged communities are:

- (1) Identified as disadvantaged by the [Climate and Economic Justice Screening Tool \(CEJST\)](#) mapping tool,
- (2) Additional communities identified as disadvantaged by the [EJScreen](#) mapping tool namely:
 - a) Census block groups that are at or above the 90th percentile for any of [EJ Screen's supplemental indexes](#) when compared to the nation or state
 - b) Geographic areas with Tribal lands,
- (3) Geographically dispersed low-income households namely,
 - a) Individuals and households with incomes:
 - i) For Metropolitan Areas**
 - (1) At or below the greater of:
 - (a) 80% Area Median Income (AMI); and
 - (b) 200% of the Federal Poverty Level;
 - ii) For Non-Metropolitan Areas**
 - (1) At or below the greater of:
 - (a) 80% AMI;
 - (b) 80% Statewide Non-Metropolitan Area AMI; and
 - (c) 200% of the Federal Poverty Level;
 - b) Individuals and households currently approved for assistance from or participation in at least one of the following income-based or income-verified federal assistance programs:
 - i) U.S. Department of Health and Human Services (HHS)' [Low Income Home Energy Assistance Program](#)⁸⁵ (LIHEAP);
 - ii) U.S. Department of Agriculture (USDA)'s [Supplemental Nutrition Assistance Program](#)⁸⁶ (SNAP);
 - iii) U.S. Department of Energy's [Weatherization Assistance Program](#)⁸⁷ (WAP);

⁸⁵ For reference, under this program, income eligibility is defined so that "Grant recipients must target benefits to households with low incomes. They may set their own LIHEAP income eligibility limits; however, they must cap those limits at (1) no more than the greater of 150 percent of the Federal Poverty Guidelines (FPG) or 60 percent of the State Median Income, and (2) no less than 110 percent of FPG." See weblink above.

⁸⁶ For reference, income eligibility criteria for this program are available here: [SNAP Eligibility | Food and Nutrition Service \(usda.gov\)](#).

⁸⁷ For reference, under this program, households at or below 200% of the poverty income guidelines are considered eligible for weatherization services or if they receive [Supplemental Security Income](#) or Aid to Families with Dependent Children. In addition, each state or territory may elect to use the U.S. Department of Health & Human Services (HHS) [Low-Income Home Energy Assistance Program \(LIHEAP\)](#) criteria of 60% of state-median income. See weblink above for additional details.

- iv) Federal Communications Commission’s [Lifeline Support for Affordable Communications](#)⁸⁸ (**Lifeline**);
 - v) USDA’s [National School Lunch Program](#)⁸⁹;
 - vi) U.S. Social Security Administration’s [Supplemental Security Income](#); or
 - vii) Any other verified government or non-profit program serving Asset Limited, Income Constrained, Employed (**ALICE**) individuals or households designated by the EPA Administrator;
- (4) Multifamily housing with rents not exceeding 30% of 80% AMI for at least half of residential units and with an active affordability covenant from one of the following federal or state housing assistance programs:
- a) [Low-Income Housing Tax Credit](#).
 - b) A housing assistance program administered by the U.S. Department of Housing and Urban Development (HUD), including Public Housing, [Section 8](#) Project-Based Rental Assistance, [Section 202](#) Housing for the Elderly, [Section 811](#) Housing for Disabled, Housing Trust Fund, Home Investment Partnership Program Affordable Rental and Homeowner Units, Permanent Supportive Housing, and other programs focused on the EJ Supplemental Indexes cover 12 environmental indicators: Particulate Matter 2.5, Ozone, Diesel Particulate Matter, Air Toxics Cancer Risk, Air Toxics Respiratory Hazard Index, Traffic Proximity, Lead Paint, RMP Facility Proximity, Hazardous Waste Proximity, Superfund Proximity, Underground Storage Tanks, and Wastewater Discharge. Within [EJScreen](#), the EJ Supplemental Indexes can be found on the “Maps” tab by clicking the “Threshold Map.” 12 goal of ending homelessness funded under HUD’s Continuum of Care Program,
 - c) A housing assistance program administered by USDA under Title V of the Housing Act of 1949, including under Sections 514 and 515 ([7 CFR § 3560.1](#)),
 - d) A housing assistance program administered by a tribally-designated housing entity, as defined in Section 4(21) of the Native American Housing Assistance and Self-Determination Act of 1996 ([25 U.S.C. § 4103\(22\)](#)),
 - e) Any other housing assistance program designated by the EPA Administrator
- (5) Naturally-occurring (unsubsidized) affordable housing with rents not exceeding 30% of 80% AMI for at least half of residential units

Energy Communities

The Energy Community ITC Adder is available for projects sited in any area designated as an “[energy community](#)” under [26 U.S.C § 45\(b\)\(11\)\(B\)](#) (the **Energy Communities**) for purposes of benefitting from the Energy Community ITC Adder, i.e.:

- (1) A brownfield site as defined [42 U.S.C. § 9601\(39\)](#); or
- (2) A metropolitan statistical area or non-metropolitan statistical area which:

⁸⁸ For reference, the income eligibility under the Lifeline program is 135% or less than the Federal Poverty Guidelines. See weblink above for additional details.

⁸⁹ For additional information about income eligibility under this program, see [Income Eligibility Guidelines | Food and Nutrition Service \(usda.gov\)](#).

- a) Has (or, at any time during the period beginning after December 31, 2009, had) 0.17 percent or greater direct employment or 25 percent or greater local tax revenues related to the extraction, processing, transport, or storage of coal, oil, or natural gas (as determined by the Secretary of the Treasury or her delegate), and
 - b) Has an unemployment rate at or above the national average unemployment rate for the previous year (as determined by the Secretary of the Treasury or her delegate); or
- (3) A census tract:
- a) In which:
 - i) After December 31, 1999, a coal mine has closed, or
 - ii) After December 31, 2009, a coal-fired electric generating unit has been retired, or
 - b) A census tract directly adjoining to any census tract described above.

These areas may or may not overlap with the areas designated as disadvantaged under the NOFO.

Maps

- Low-Income ITC Adder Additional Criteria for Project Prioritization Persistent Poverty Counties: <https://www.ers.usda.gov/topics/rural-economy-population/rural-poverty-well-being/#geography> Note that this map, unlike those that will be used by Treasury, does not yet include 2023 data.
- CEJST Energy Burden or PM2.5 Additional Criteria - CEJST does not allow you to filter by criteria:
 - You can download the list of communities here: <https://static-data-screeningtool.geoplatform.gov/data-versions/1.0/data/score/downloadable/1.0-communities.csv>
 - You can download the [geospatial files](#) from CEJST. If you do not have an ArcMap license, we recommend the free open source QGIS software: <https://www.qgis.org/en/site/forusers/download.html>
- Energy Communities: <https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a2ce47d4721a477a8701bd0e08495e1d> – Beware that this map does not include the data relating to unemployment and brownfields

Appendix C: Categorization of Applicable Project Components for Domestic Content Tax Credit requirements

Source: Norton Rose Fulbright - <https://www.projectfinance.law/publications/2023/may/table-2-categorization-of-applicable-project-components/>

Applicable Project	Applicable Project Component	Categorization
Utility-scale photovoltaic system	Steel photovoltaic module racking	Steel/Iron
	Pile or ground screw	Steel/Iron
	Steel or iron rebar in foundation (e.g., concrete pad)	Steel/Iron
	Photovoltaic tracker	Manufactured Product
	Photovoltaic module (which includes the following Manufactured Product Components, if applicable: photovoltaic cells, mounting frame or backrail, glass, encapsulant, backsheet, junction box (including pigtails and connectors), edge seals, pottants, adhesives, bus ribbons, and bypass diodes)	Manufactured Product
	Inverter	Manufactured Product

Battery energy storage technology	Steel or iron rebar in foundation (e.g., concrete pad)	Steel/Iron
	Battery pack (which includes the following Manufactured Product Components, if applicable: cells, packaging, thermal management system, and battery management system)	Manufactured Product
	Battery container/housing	Manufactured Product
	Inverter	Manufactured Product

Appendix D: NOPR Ownership Criterion for Prioritization by Treasury of Low-Income ITC Adder Allocation

Source: [CESA LMI Adder FAQs](#)

One of the additional application criteria that will be used by Treasury to prioritize projects within each category is an ownership criterion. A facility owner will meet the ownership criterion if it is “a Tribal Enterprise, an Alaska Native Corporation, a renewable energy cooperative, a qualified renewable energy company meeting certain characteristics, or a qualified tax-exempt entity.”

Note that for purposes of this criterion, a “renewable energy cooperative” is an entity that owns at least 51 percent of a solar/wind facility and is either:

- (1) A consumer or purchasing cooperative controlled by its members who are low-income households as defined in [Section 48\(e\)\(2\)\(C\)](#) of the Internal Revenue Code meaning households with income of:
 - a. Less than 200 percent of the poverty line,⁹⁰ or
 - b. Less than 80 percent of area median gross income⁹¹ with each member having an equal voting right, OR
- (2) A worker cooperative controlled by its worker-members with each member having an equal voting right.

In addition, a “qualified renewable energy company” is defined as “an entity that serves low-income communities and provides pathways for the adoption of clean energy by low-income households” and would need to meet multiple requirements related to the following:

- (1) At least 51 percent of the entity's equity interests are owned and controlled by individuals or a Community Development Corporation, an agricultural or horticultural cooperative, an Indian Tribal government, an Alaska Native corporation, or a Native Hawaiian organization
- (2) Has less than 10 full-time-equivalent employees and less than \$5 million in annual gross receipts in the previous calendar year
- (3) First installed or operated a qualified solar facility two or more years prior to the date of application and

⁹⁰ as defined in Section 2110(c)(5) of the Social Security Act ([42 U.S.C. 1397jj\(c\)\(5\)](#)).

⁹¹ as determined under Section [142\(d\)\(2\)\(B\)](#) of the Internal Revenue Code

- (4) Has installed and/or operated qualified solar and wind facilities in areas and for the benefit of people served by the LMI Adder with at least 100 kW of cumulative nameplate capacity located in one or more Low-Income Communities is located in a low-income community (**New Markets Tax Credits**) or on Indian land.