A Checklist for Voluntary Utility-Led Community Solar Programs

A Guide to Evaluate and Inform Program Design and Implementation

VOTE SOLAR

IREC

Vote Solar and the Interstate Renewable Energy Council, Inc.

November 2018

COMMUNITY SOLAR projects provide multiple subscribers with on-bill benefits directly attributable to that particular solar project, interconnected at the distribution level. In addition, community solar programs should result in additional incremental renewable energy resources on the distribution grid that otherwise would not have been procured by the utility to serve all customers.

Community solar now accounts for one gigawatt of installed capacity and has the potential to scale to 50-80 times that size by 2030[1], bringing widespread benefits to customers, communities, the economy and the environment. The U.S. community solar market is growing rapidly, driven by both state policy and voluntary utility programs (i.e., those programs not required by state law). Even in states that have not statutorily authorized community solar programs, all electric utilities have the option to offer voluntary programs for their customers. Nationwide, over 220 utilities offer community solar programs across 36 states, and a growing number of rural electric cooperatives, municipal utilities, and investor-owned utilities are exploring or implementing community solar program offerings[2]. Key motivations for these voluntary programs include rising customer demand for renewable energy, providing economic benefits to low- to moderate-income (LMI) customers and underserved communities, and diversifying the energy resource mix, among others.

Across the country, voluntary utility-led program offerings vary in terms of program design, structure, administration, and customer participation. In addition, company governance and regulation differ by utility, which means program development, review and the amount of non-utility stakeholder input and oversight can vary. The ability for utilities to design programs well-suited to meet their unique situations and respond to their customers' interests is important to achieve program success. However, despite their

1 GTM Research, *The Vision for U.S. Community Solar: A Roadmap to 2030,* July 2018, available at: http://www.votesolar.org/csvision.

2 Chwastyk, Dan, *From consumer interest to fully subscribed programs: SEPA report drills into details of community solar success,* Smart Electric Power Alliance, May 2018, available at: https://sepapower.org/knowledge/from-consumer-interest-to-fully-subscribed-programs-sepa-report-drills-into-details-of-community-solar-success/.

diversity, many of these programs would benefit from a common framework to improve customer understanding and acceptance of community solar and help ensure community solar can scale more quickly and cost-efficiently.

This checklist, developed by Vote Solar and the Interstate Renewable Energy Council (IREC), both national non-profit organizations, is intended to help guide utility officials and other stakeholders interested in creating new utility-led community solar programs (or those seeking to improve existing programs). Based on established practices and successful program models, this checklist reflects the program design considerations critical to supporting effective community solar programs that appeal to and benefit their customers and communities.

The goal of this checklist is to inform and guide voluntary utility-led community solar program design, such that existing and future programs adopt replicable and scalable attributes that are customer focused and support high rates of participation and capacity deployment. In addition, this checklist can help drive innovative implementation strategies that ensure more customers can access and benefit from program offerings, including those that have not traditionally benefited from on-site solar programs. The checklist focus on utility-led community solar programs is not intended to imply or recommend that these should be the only programs made available. Rather, this checklist aims to highlight the key program design considerations and provide recommendations to align programs with proven practices to replicate successes across diverse markets.

The checklist is organized into seven categories, with priority issues for program design identified within each category. The most important issues for successful programs are indicated with a blue circle. Lastly, although not articulated as a separate item in the checklist, all programs should undergo periodic review to address identified weaknesses and improve the program offering for customers.

1. EXPAND CONSUMER ACCESS TO CLEAN ENERGY

Community solar is a proven way to expand solar access to all Americans, regardless of income level or housing type. It is a critical and necessary consumer offering to meaningfully provide consumer access to clean energy, particularly for renters and underserved communities.

☐ **Establish and clearly articulate program goals and intended participants.**

- Unless there is a specific goal to serve only LMI customers, affordable housing properties and/or other underserved communities, any project should allow all customer classes (e.g., residential, small commercial, large commercial, industrial, low-income, moderate-income etc.) to participate in a community solar offering.●

- Ensure multiple subscribers and different customer classes (if applicable) can benefit from a single community solar array.●
  - Establish a maximum subscription size (e.g., one customer may not subscribe to more than 40% of the project capacity).
  - Set participation goals for small customers (residential, small commercial) to ensure that larger customers do not subscribe for the majority of program capacity (e.g., set a goal that 40% of the project should be reserved for subscriptions of 25 kW or less).

- Conduct preliminary market research to understand customers' primary motivations for participating in a community solar program and use that to inform program design and prioritize the most compelling elements as part of the community solar offering (e.g. system location, specific ownership models, subscription terms, and customer education, marketing and outreach strategies).●

☐ **Ensure that the program is appropriately sized to meet customer demand and achieve overall goals. Program capacity limits set too low may not sufficiently expand consumer access to clean energy.**

- Include an annual process for program evaluation, assessment, and adjustment in conjunction with interested stakeholders. The annual program evaluation process should include, at minimum:
  - an assessment of available capacity;
  - the opportunity for additional capacity to meet customer demand;
  - the customer value proposition;
  - the current subscriber mix;
  - the effectiveness of marketing, education and outreach strategies;
  - and the opportunity to allow non-utility providers to reach as many customers as possible.

☐ **Set participation targets for LMI customers, affordable housing providers and tenants, tenants living in multifamily housing and disadvantaged communities. These participation targets should also include a minimum goal for low-income residential participation (e.g., 20% of the program capacity should be allocated to LMI projects with at least 10% dedicated to low-income households).**[3]

- Adopt targeted program design provisions to increase LMI participation (e.g., carve-outs or targets).

☐ **Address barriers for program participation by LMI customers, affordable housing providers and tenants, tenants living in multifamily housing and disadvantaged communities.**[3,4]

- Create new or leverage existing mechanisms to address the financial barriers to participation faced by LMI customers such as: [3,4]
  - direct or indirect incentives;

3 For more information on targeted program design provisions to facilitate participation by underserved communities, see Vote Solar & GRID Alternative's Low Income Solar Policy Guide, available at: https://www.lowincomesolar.org, and IREC's Shared Renewables for Low- to Moderate-Income Consumers: Policy Guidelines and Model Provisions, available at: https://irecusa.org/publications/shared-renewable-energy-for-low-to-moderate-income-consumers-policy-guidelines-and-model-provisions/.

4 For more information on financing barriers and supportive interventions for low-income community solar projects, see the Sustainable Capital Advisors Inclusive Solar Finance Framework report, available at: https://votesolar.org/policy/policy-guides/low-income-solar-access/inclusive-solar-finance-framework/.listed in the resources section.

- subscriptions with no upfront costs;
- on-bill financing;
- alternative credit criteria;
- loan-loss reserve.

☐ **Create a plan for community outreach and education to ensure customers are aware of and understand the program.**

- Partner with community-based organizations on education, outreach, and engagement efforts to increase customer participation, particularly among the lower income customers.

☐ **Establish streamlined interconnection processes.**

- If utility-led programs are engaging third-party developers, then uniform standards, fees, and interconnection processes should be in place to facilitate project development. [5]

2. OFFER TANGIBLE ECONOMIC BENEFITS FOR ALL PARTICIPATING CUSTOMERS

The majority of customers are interested in solar as a way to save on energy costs.[6] In other words, community solar should not be viewed as a premium product. Therefore, it is critical that any community solar offering provide tangible economic benefits for all participating customers. Individuals, households, businesses and institutions that receive energy cost savings will be inclined to maintain their subscription over the life of the community solar project.

5 For additional information on streamlined interconnection processes, see IREC's *Model Interconnection Procedures and Priority Interconnection Considerations Memo*, available at: https://irecusa.org/publications/model-interconnection-procedures/.

6 Smart Electric Power Alliance and Shelton Group, *What the Community Solar Customer Wants,* August 2016, available at: https://sepapower.org/resource/what-the-community-solar-customer-wants/. [According to the report, 65 percent of households are interested in solar because they want lower monthly energy costs.]



The following program design elements and specific recommendations should be considered to provide tangible economic benefits to community solar subscribers:

☐ **Structure the subscription offering for customers in a way that provides near-term and long-term economic benefits for all subscribers.**

- Individual subscribers should receive a credit on their electric utility bill as a dollar-per-kilowatt hour credit that reflects their community solar subscription.
- The value of the credit should either be value based capturing the full benefits of distributed generation for the services and benefits it provides, total applicable retail rate minus a reasonable delivery charge that takes transmission and distribution benefits into account, or equal to the applicable retail rate.[7]
- The value of the credit shall be sufficient to reasonably allow for the creation, financing and accessibility of community solar facilities to ensure robust customer participation, and be provided for the useful life of the community solar project but not less than 25 years.
- Subscriptions or participation in the program that are at a premium do not meet best practices.[8]

☐ **Eliminate upfront costs associated with any subscription.**

- Offer a "pay-as-you-go" subscription model to eliminate the upfront investment barrier to going solar.[9]
- Eliminate any upfront deposits or sign-up fees. If a utility requires these, they should either be refundable or applied to buy down the subscription cost.

7 For more information on bill credit valuation, see the following resources: Coalition for Community Solar Access's *Community Solar Policy Decision Matrix*, available at: http://www.communitysolaraccess.org/community-solar-policy-decision-matrix-2017/; and IREC's *Model Rules for Shared Renewable Energy Programs*, available at: https://irecusa.org/publications/model-rules-for-shared-renewable-energy-programs/.

8 Any community solar program should be structured in a way that provides tangible economic benefits to subscribers. Offerings at a cost premium fail to meet best practices.

9 An upfront per-panel purchase option can be offered alongside the "pay-as-you" go subscription model.

☐ **Ensure LMI and other underserved customers receive significant energy bill savings that can be realized immediately.**

- LMI and other underserved customers must receive immediate savings to facilitate program participation.
- LMI customers should be able to participate in the program at no upfront cost.
- Identify low-cost financing options and explore the potential for local grants or philanthropic funding.
- Explore opportunities to serve as a "backup subscriber" or facilitate the purchase of solar on behalf of low-income customers to help create an immediate value proposition to LMI participants.
- Facilitate the participation of other large entities as backup subscribers and/or "anchor tenants" to help offer tangible economic benefits for LMI households and other underserved communities.

☐ **Identify an appropriate provider of last resort so that if subscription rates drop temporarily, the amount of unsubscribed energy is minimized and the economic value of the community solar project is maintained.**

- Allow a municipal or other institutional customer's subscription to temporarily exceed the customer's average monthly usage if the customer serves as a backup subscriber, meaning the customer fills a gap in subscriptions in the event of default by one or more customers.
- The utility or anchor tenant should serve as the provider of last resort.

3. IDENTIFY WAYS TO PROMOTE PROJECT DEVELOPMENT COST SAVINGS

Any utility-led program should evaluate ways to create a cost-effective community solar project, so that any cost savings can be passed down to individual subscribers. To do this, utilities should:

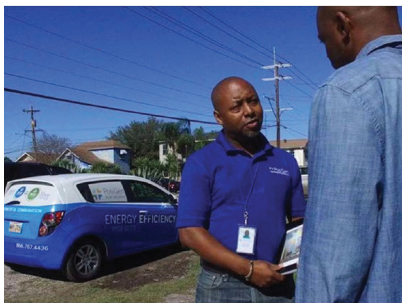
☐ **Explore opportunities to reduce project development costs to provide greater economic benefits to subscribers.**

- Pursue time- and cost-efficient land acquisition strategies for multiple projects.

☐ **Identify ways to maximize economies of scale to offer tangible economic benefits.**

- Install a single, large community solar facility (at least 1 MW in size) or multiple, smaller installations (portfolio approach).

☐ **Reference Section V to find ways to promote market competition to reduce overall project development costs.**



4. PRIORITIZE THE CUSTOMER EXPERIENCE

Customer-centric community solar offerings are critical for successful programs that attract and retain subscribers, while also providing meaningful benefits to participants. Though customer preferences may vary across utilities, voluntary community solar programs should:

☐ **A community solar project and all of its subscribers must be sited within the utility's electric service territory.**[10]

☐ **Build transparency and consumer protection into community solar program administration.**

- Provide a clear, easy-to-understand disclosure form for customers that highlights key contract terms and other program details that is available in multiple languages.[11]

10 As indicated in the SEPA and Shelton Group report entitled *What the Community Solar Customer Wants* (available in the Resources section of this report), 51% of commercial customers prefer "visible" projects that do not cost a premium and residential customers highly value "visibility and access to production information".

11 See New York and Minnesota's consumer disclosure forms. NY's disclosure form is available here: http://www3.dps.ny.gov/W/PSCWeb.nsf/96f0fec0b45a3c6485257688006a701a/eab5a735e908b9fe8525822f0050a299/$FILE/New%20York%20Community%20Distributed%20Generation%20Disclosure%20Form6.1.18.docx; MN's form is available here: https://www.cleanenergyresourceteams.org/sites/default/files/CSG-Disclosure-Checklist-2017.pdf.

- Provide customers with clear and transparent subscription information on their bill including, at minimum:
  - kilowatt-hours generated,
  - the value of that generation,
  - billing period costs and savings,
  - cumulative costs and savings.

☐ **Streamline subscriber management, billing and communication processes.**

- Use billing software versus more inefficient manual billing techniques to make the subscriber management and associated billing more efficient.
- Initiate regular customer outreach and engagement about the program and any complementary programs.

☐ **Provide attractive and flexible subscription terms and payment options to appeal to a variety of customer preferences.**

- Flexible subscription terms should include:
  - A variety of subscription types, which could include an upfront per panel purchase option but also must include a monthly subscription-based offering, frequently called “pay-as-you-go.”
  - Option for on-bill repayment and/or on-bill financing to make it easier and more economical for customers to participate.
  - No or low upfront costs (any upfront costs should be refundable or applied to the overall subscription cost).
  - Short subscription lengths: Subscribers should be able to participate on a month-to-month basis. If that is not possible, then the program should only require a minimal participation term of 1 year.
  - Portability and transferability: customers should be allowed to take their subscription with them if they move within the utility service territory (portability), or transfer their subscription if they leave the program or move out of the service territory (transferability).
  - No or low cancellation fees: If cancellation or termination fees are included in a customer’s subscription, they should be waived if the subscriber has exceeded a minimum term (e.g. 1 year).

5. PROMOTE COMPETITION

Utilize competition to create the most cost efficient and consumer-focused community solar project.

- [ ] **Promote participation by third-party providers to drive cost savings, innovation, and competition.**

  - Issue a competitive solicitation for the engineering, procurement, and construction of the solar array.
  - Encourage participation by third-party providers for project financing, such as a pass-through Power Purchase Agreement.
  - Encourage participation by third-party providers for program design, customer education and outreach, customer acquisition and billing support.
  - Ensure that no undue preference is given to certain solar providers to maintain a competitive marketplace.
  - Include a preference for using local labor at prevailing wages.

6. OPTIMIZE COMMUNITY SOLAR TO BENEFIT THE GRID AND THE COMMUNITY

As a distributed resource, community solar has the opportunity to provide additional benefits to the distribution grid. Community solar programs present an opportunity for utilities to strategically incorporate these distributed solar projects in a way that maximizes benefits the system, and the community, as a whole.

- [ ] **Identify opportunities to increase grid benefits through strategic project siting or pairing with other technologies and programs.**

  - Locate community solar projects in strategic areas on the grid to maximize locational value and avoid more constrained locations.

- Evaluate opportunities to combine community solar with energy storage or demand response programs.
- Evaluate the opportunity for sectionalizing equipment or switches to create microgrids capable of emergency operations in stand-alone mode.

☐ **Incorporate community solar into broader grid resiliency strategies or microgrid projects.**

- Evaluate community solar in long-term integrated distribution resource planning to optimize cost-effective deployment over time.

☐ **Prioritize local community benefits in addition to grid benefits.**

- Develop projects on brownfields, landfills, in and around environmental justice communities or other unused land.
- Partner with local institutions, such as local governments or school districts, to build projects that could reduce their energy costs.
- Partner with community groups to site a community solar array in a disadvantaged community.

7. COMPLEMENT EXISTING PROGRAMS

Community solar can meet renewable energy compliance targets at low costs, combine with other energy efficiency programs to reduce household energy burden, and lift up communities through workforce development. These programs provide a unique opportunity to explore complementary measures.

- [ ] **Make the community solar program additive so that it results in additional renewable energy resources on the distribution grid that otherwise would not have been procured by the utility to serve all customers.**[12]

- [ ] **Where possible, encourage customer participation in complementary energy efficiency offerings, demand response or time-of-use rates to help further reduce customers' energy costs and energy usage, especially for participating LMI customers.**

- [ ] **Explore creative partnerships with other state programs and/or community organizations to support skills training, workforce development, and community education.**

- [ ] **Provide a community solar option for individuals on energy assistance funding or utilizing a utility rate discount subsidy. Explore leveraging energy assistance funding to support new community solar programs.**

- [ ] **Use existing programs, such as LIHEAP, to qualify low-income customers for community solar.**

12 Any program using existing clean energy facilities would not qualify as a true community solar program.

RELEVANT RESOURCES

National Shared Renewables Scorecard (IREC)
Launched by IREC in May 2017 and updated annually, the Scorecard evaluates state shared renewables programs using criteria based on best practices for program design.
https://sharedrenewablesscorecard.org/

Low-Income Solar Policy Guide (GRID Alternatives & Vote Solar)
This guide provides information on various policies and programs that are creating access to solar technology and jobs nationwide. The community solar page also identifies successful strategies to ensure low-income participation.
http://www.lowincomesolar.orghttp://www.lowincomesolar.org

Shared Renewables for Low- to Moderate-Income Consumers: Policy Guidelines and Model Provisions (IREC)
This report provides information and tools for policymakers, regulators, utilities, shared renewable energy developers, program administrators and others to support the adoption and implementation of shared renewables programs specifically designed to provide tangible benefits to LMI individuals and households. The guidelines and accompanying model provisions are intended to function in tandem with IREC's existing Model Rules for Shared Renewable Energy Programs. Both available at:
https://irecusa.org/publications/shared-renewable-energy-for-low-to-moderate-income-consumers-policy-guidelines-and-model-provisions/ and
https://irecusa.org/publications/model-rules-for-shared-renewable-energy-programs/

Expanding Solar Access: Pathways for Multifamily Housing (IREC)
In this guide, local governments, housing providers, utilities and other stakeholders can learn about on-site and off-site shared renewable energy programs and how those programs can offer greater solar access for renters, multifamily residents and low-to-moderate income consumers in their communities.
https://irecusa.org/expanding-solar-access-pathways-for-multifamily-housing/

Bringing the Benefits of Solar Energy to Low-Income Consumers (Clean Energy States Alliance)
This guide outlines the obstacles that low-income households face in accessing solar power and provides a detailed overview of strategies that policymakers and government agencies can use to encourage low-income solar adoption.
http://www.cesa.org/resource-library/resource/bringing-the-benefits-of-solar-energy-to-low-income-consumers

Inclusive Solar Finance Framework (Sustainable Capital Advisors)
In this report, we outline a framework that policymakers, advocates, the solar industry, community groups, and financial organizations can use to think more broadly about ways to achieve greater equity as the nation transitions to a cleaner energy economy.
https://votesolar.org/policy/policy-guides/low-income-solar-access/inclusive-solar-finance-framework/

Community Solar Program Models Report (Smart Electric Power Alliance (SEPA)
This report, funded by the US Department of Energy Solar Energy Technologies Office Solar Market Pathways Initiative, provides insights and information on community solar market development, including which kinds of community solar programs are gaining traction with cooperatives, municipal utilities, and investor-owned utilities.
https://sepapower.org/resource/community-solar-program-designs-2018-version/

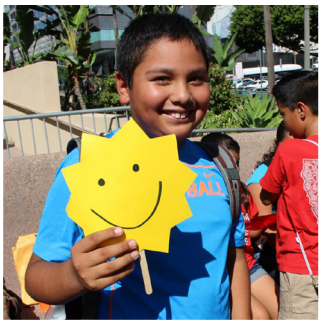
Community Solar Policy Decision Matrix (Coalition for Community Solar Access)
This policy decision matrix provides an overview of important community solar program design questions, a menu of options, recommendations, and other important issues to consider for those designing and implementing programs.
http://www.communitysolaraccess.org/community-solar-policy-decision-matrix-2017/

Community Solar Value Project
This site includes a comprehensive on-line Solutions library and additional resources on solar plus battery storage or demand response, aimed primarily as a resources for utilities. It was developed with support from the U.S. Department of Energy Solar Market Pathways Initiative.
https://www.communitysolarvalueproject.com

What the Community Solar Customer Wants (SEPA and Shelton Group)
The most successful community solar programs are designed with the customer in mind. But what does a community solar customer want? The Shelton Group and SEPA conducted a nationwide survey involving over 2,000 respondents to help answer this question. This report provides quantitative results of the survey and touches on customer preferences, how these preferences vary among different customer segments, and delves into the relative importance of various model attributes.
https://sepapower.org/resource/what-the-community-solar-customer-wants/

Community Solar: Best Practices for Utilities in the South (Southern Environmental Law Center)
SELC's Solar Initiative Policy Brief highlights best practices for utility-sponsored community solar. The document covers on-bill crediting, enrollment requirements, credit rate, REC treatment, siting and several additional considerations for utility-led offerings.
https://www.southernenvironment.org/uploads/publications/CommSolar_Utility_Best_Practices.PDF

Community Solar for the Southeast Implementation Guide (North Carolina Clean Energy Technology Center)
This guide examines several issues related to community solar, focusing specifically on the unique issues faced by electric cooperatives and municipal utilities in the southeast.
https://nccleantech.ncsu.edu/wp-content/uploads/Community-Solar-for-the-Southeast-Implementation-Guide.pdf




ACKNOWLEDGEMENTS

Vote Solar and the Interstate Renewable Energy Council would like to acknowledge the individuals and organizations that reviewed this document and provided feedback. Your input was invaluable and we sincerely thank you for your time and effort.

Photo credits: IREC, Vote Solar, and Stephen Yang/Solutions Projects.

VOTE SOLAR

www.votesolar.org

IREC

www.irecusa.org