



COALITION FOR
COMMUNITY
**SOLAR
ACCESS**

Community Solar Policy Decision Matrix

Guidance for Designing
Community Solar Programs

March 2019



ABOUT US

The Coalition for Community Solar Access (CCSA) is a national Coalition of businesses and non-profits working to expand customer choice and access to solar to all American households and businesses through community solar. Community solar refers to local solar facilities shared by multiple community subscribers who receive credits on their electricity bills for their share of the power produced. Community solar provides homeowners, renters, and businesses equal access to the economic and environmental benefits of solar energy generation regardless of the physical attributes or ownership of their home or business. Community solar expands access to solar for all, including low-to-moderate income customers, all while building a stronger, distributed, and more resilient electric grid. For more information, visit our website at www.communitysolaraccess.org, follow us on Twitter at [@solaraccess](https://twitter.com/solaraccess) and on Facebook at www.facebook.com/communitysolaraccess.



CCSA Core Principles

We promote policies, programs, and practices that:



Allow all consumers the opportunity to participate in and directly economically benefit from the construction and operation of new clean energy assets.



Provide equal access for developers to build and operate community solar projects and interconnect those projects to the serving utility's grid.



Incorporate a fair bill credit mechanism that provides subscribers with an economic benefit commensurate with the value of the long-term, clean, locally-sited energy produced by community solar projects.



Support the participation of diverse customer types in community solar programs, and encourage customer choice with providers, product features, and attributes to catalyze innovation and best serve customers.



Ensure that community solar projects are operated and maintained well to protect customers and developers' investment.



Ensure full and accurate disclosure of customer benefits and risks in a standard, comparable manner that presents customers with performance and cost transparency.



Comply with applicable securities, tax, and consumer protection laws to reduce customer risk and protect the customer.



Encourage transparent, non-discriminatory utility rules on siting, and interconnecting projects, and collaboration with utilities to facilitate efficient siting and interconnection.



Maintain a 360-degree view of the community solar market and ensure a beneficial role for all parties in the partnerships forged between subscriber, developer, and utility.

Acknowledgements

CCSA wishes to thank all of the individuals from our member organizations and partners who contributed to the development of this policy decision matrix. CCSA's members include solar project developers, service providers, attorneys, financial institutions and non-profit advocates. For a full list of our membership, please refer to CCSA's website.¹

¹Available at <http://www.communitysolaraccess.org/membership/>

Why States are Adopting Community Solar

Solar energy continues to grow in popularity across the nation, with individuals, businesses, governments, schools, and other organizations demanding more choice, cleaner energy options, and greater control over their energy bills. Although nearly two million solar energy systems have been installed in the U.S.,² many customers remain without access to the many benefits of solar energy or the ability to install their own system onsite. For example, a property owner may have unsuitable roof space, an old roof needing replacement in the near future, or too much shading. Similarly, millions of tenants or renters lack the permission to install a solar system at their home or business.

Community solar provides equitable access to clean and affordable solar energy to anyone and everyone who wants it. By participating in community solar, someone unable to install solar onsite can still take advantage of its benefits. Community solar works by allowing multiple individuals, groups, or businesses to own a portion or subscribe to the output of a single solar facility located offsite. Community solar projects can improve the resiliency of the electric grid and provide a predictable, safe and clean source of energy.

Nineteen states and Washington, D.C.³ have enacted policies that enable community solar arrangements between subscribing organizations and participating subscribers. Community solar has grown exponentially in the last six years, going from just a handful of projects installed before 2010 to a gigawatt (GW) by the end of 2018, enough to power around 150,000 homes. Community solar installations are on track to grow exponentially in the coming years – the Smart Electric Power Association (SEPA) estimates there will be 2GW of community solar installed nationwide by 2021. Massachusetts, Minnesota and Colorado are leading the nation in community solar adoption, with New York, New Jersey, Maryland, and Illinois all poised for significant growth over the next several years. States that enable community solar are seeing significant growth in jobs, economic investment, tax revenues to local communities, and upgrades to grid infrastructure as a result of the construction of community solar projects in their communities.

²Solar Energy Industries Association, see: <https://www.seia.org/solar-industry-research-data>

³States include California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, New York, Oregon, Rhode Island, Vermont and Washington. See: <http://sharedrenewables.org/shared/community-energy-projects/>

⁴Maryland PSC Website. See: <http://www.psc.state.md.us/electricity/community-solar-pilot-program/>

How to Use this Policy Matrix

The members of CCSA have experience working in different states under different community solar policy models. This experience has provided the organization with a deep understanding of how different policy options spur the community solar market in different ways and how certain policy provisions may have unintended consequences.

Based on CCSA member experiences, we have created this policy decision matrix to aid policymakers in designing community solar programs. This matrix is intended to lead policymakers through important questions, grouped into five categories, which should be addressed when designing programs. To answer these questions, we provide a menu of options, focusing on those that will spur market development while providing choices to customize programs to meet a state's needs and goals. The decision matrix provides CCSA's recommendation for what works best, based on our members' experiences working in different states. It also provides our rationale for that recommendation, example language to aid in drafting policies and other important issues to consider. The five areas addressed in this matrix are:

Community Solar Policy Considerations

1. Program Structure
2. Compensation
3. Consumer Participation
4. Project Sizing and Siting
5. Low-to-Moderate Income Considerations

In addition to considering how to design a community solar program, there are a number of changes to utility practice that are important to enable community solar. Outdated billing processes can lead to frustrations for customers. Poor interconnection standards and processes can unnecessarily drive up project development costs and lead to months- and sometimes years- long delays in projects coming on line. We provide recommendations for policymakers to direct utilities to make changes to their processes in order to make sure that a community solar program's implementation goes smoothly in these two key areas:

Efficient Utility Processes

1. Interconnecting Community Solar Systems to the Grid
2. Billing Community Solar Customers and Data Exchange with Community Solar Providers

Our recommendations in this document are driven by our Core Principles, which emphasize the creation of sustainable markets that will benefit consumers for years to come.

Program Structure

Community solar can serve the most customers at the least cost when markets are designed for scale. That means avoiding artificial caps on program capacity, and ensuring efficient program administration.

Key Questions to Ask: What types of entities should be permitted to own and/or manage projects?	
Options to Consider	Community Solar Providers Utility Other (e.g. Customer)
CCSA Recommendations	Open, competitive markets open to non-utility entities, with utility participation prohibited unless clear protocols for competitive neutrality are established.
Rationale	Competition and innovation are necessary to drive the market forward, ultimately resulting in lower costs and more options for consumers.
Example Language	A Subscriber Organization shall be any for-profit or not-for-profit entity permitted by [State] law that (A) owns or operates one or more community solar facility(ies) for the benefit of subscribers, or (B) contracts with a third-party entity to build, own or operate one or more community solar facilities.
Notes	In a program where utilities are allowed to participate as project owners/managers, protocols should be put in place to ensure a level playing field and safeguard competitive markets. Considerations include equal access to data, financing, interconnection opportunities and other issues. To date there are not examples of utilities effectively being incorporated into a competitive market in a neutral manner.

Key Questions to Ask: Who should fill the role of program administrator? (i.e. who should determine project / subscriber organization eligibility and, if a program is capped, determine which projects are allocated space in the program)	
Options to Consider	State agency (such as the public utilities commission or energy agency) Utility Third-Party administrator
CCSA Recommendations	An independent, third-party administrator that has staff dedicated to the Community Solar program and is overseen by a state agency is typically the most efficient and effective type of program administrator.
Rationale	Program administration should be designed to run transparently and efficiently ⁴
Example Language	[State agency] shall seek qualifications from, select, and provide oversight and direction to a third-party entity to administer the community solar program.
Notes	If a utility oversees program administration and that utility is also participating as a subscriber organization in the program, additional oversight will be necessary to ensure conflicts of interest are avoided.

Key Questions to Ask: What entity should administer bill credits?	
Options to Consider	Utility Other (e.g. retail supplier)
CCSA Recommendations	Utility, though it may be appropriate to contract with a third-party to provide administrative support. There should be clear guidance in program rules to ensure that subscriber credits are applied to utility bills within 30 days, there is monthly reporting from the utility to the subscriber organization and that subscriber organizations are allowed to update subscriber lists on at least a monthly basis. Billing is best facilitated through an automated billing process. The utility should administer bill credits to customers to simplify and enhance the customer experience and overall program administration. In competitive electricity markets where many customers purchase electricity from competitive suppliers, having the distribution utility apply the bill credits is important in order to simplify the calculation, administration, and cost recovery of the credits.
Rationale	The utility should administer bill credits to customers to simplify and enhance the customer experience and overall program administration. In competitive electricity markets where many customers purchase electricity from competitive suppliers, having the distribution utility apply the bill credits is important in order to simplify the calculation, administration, and cost recovery of the credits.

⁴Massachusetts' MassACA is an example of a third-party administered application system that is streamlined and transparent. It provides significant value to market participants in the state. The application system is not community solar-specific, but manages applications for projects seeking to reserve net metering capacity more broadly. Then in 2017, the Massachusetts Renewables Target (SMART) program conducted a solicitation for a program administrator and selected ClearResult to manage the program with oversight from the Department of Energy Resources.

Program Structure

Example Language	An Electric Company shall apply bill credits to the accounts of participating subscribers on a monthly basis, based on their proportional subscriptions to the community solar facility, and provide reporting back to the Subscriber Organization on a monthly basis. An Electric Company shall accept subscriber list updates from Subscriber Organizations on at least a monthly basis. An electric company shall, at the request of a Subscriber Organization, offer consolidated billing for community solar subscription fees.
Notes	A positive customer experience is best facilitated when the subscriber organization has accurate information and can update subscriber lists as needed. Communication between community solar providers and utilities for the purposes of calculating, assigning, and applying bill credits must be handled via efficient electronic systems that result in timely, accurate bill crediting, with the capability to update subscriber lists at least on a monthly basis. Consistent monthly reporting from utility to subscriber organization is also necessary to ensure accuracy in bill crediting. Consolidated billing for community solar subscriptions can simplify the transaction for the consumer. See billing section under Efficient Utility Processes for more info.

Key Questions to Ask: Should there be a preset size for the program?

Options to Consider	Calibrate initial capacity available under program to meet state policy goals No predetermined size limits
CCSA Recommendations	States should establish permanent and uncapped community solar programs, in recognition that distributed solar generation is an essential part of any resilient, safe, and clean energy portfolio, and that customers should have choice in their energy solutions. If a given state is in the early stages of distributed generation planning, it may be appropriate to initially establish a program size threshold of approximately 5-10% of peak load. This will ensure that the program can be adjusted once better data on distributed generation integration into the electricity system is made available through planning efforts overseen by the public utilities commission. However, in order to attract serious long-term private sector investment, states should make their intent to establish a permanent program clear from the outset.
Rationale	Given that the majority of customers cannot host onsite solar, community solar programs should be sized appropriately to create equitable access to local solar generation for all customers. At a minimum, if policy makers set a threshold for initial program capacity, it should be large enough to allow community solar to grow to at least the size of the on-site solar market within the first two years.
Example Language	Once [insert threshold level of MW] have been placed in service, the [state regulatory agency] may consider whether adjustments to the credit rate methodology are appropriate for new projects beginning development. Any adjustments to the credit rate shall be informed by a comprehensive review of the long term costs and benefits of distributed generation and shall ensure equitable access for all electric customers to directly participate in and benefit from distributed generation.
Notes	An effective interconnection queue management process and strict project maturity requirements must be implemented in parallel to ensure smooth program rollout. It is essential to assess interconnection standards well in advance of implementing a new program, to ensure there are sufficient technical standards, process transparency, queue management practices and other important factors. Please see the interconnection section on page 18 for more detailed recommendations on interconnection best practices.

Program Structure

Key Questions to Ask: How should projects be selected for participation in the program?

Options to Consider	Open tariff enrollment Competitive solicitation process
CCSA Recommendations	Open tariff enrollment
Rationale	<p>When projects show they have met the required maturity requirements, they should be approved for participation in the program on a first-come, first-served basis. Such a tariff-based or “open” program is easiest to administer, creates a more level playing field for a diversity of projects, and is more efficient from the project development perspective.</p> <p>CCSA has not seen a large-scale RFP process successfully implemented for community solar and does not believe such a process is compatible with efficient, cost-effective project development. Moreover, an RFP process may lead to a situation in which some initial projects get delayed, complicating the rollout of later projects. The uncertainty associated with RFP processes can also significantly increase project costs and risks.</p> <p>Proponents of an RFP process see it as a form of competition. However, such a conclusion disregards how community solar programs work. Because community solar projects have the same credit values to customers, compensation to projects is the same. The competition among community solar projects is not competing to be accepted in the program but rather to have low cost, well built projects in order to give customers the best possible savings.</p>
Example Language	A community solar facility may reserve capacity under the community solar program upon demonstrating appropriate project maturity requirements as determined by the [insert appropriate state agency].

Key Questions to Ask: What project maturity milestones should be required to reserve capacity in the program?

Options to Consider	Site control milestone Interconnection process milestone Permitting process milestone
CCSA Recommendations	<p>Based on experience in existing community solar markets, the following minimum requirements will help ensure that projects receiving capacity allocations can be built and financed:</p> <ol style="list-style-type: none"> 1. Proof of site control (e.g. a signed lease or lease option) 2. A signed Interconnection Agreement with the utility, or equivalent milestone in the interconnection process (typically the point in the process where the project has completed interconnection studies and has an estimate of total interconnection cost) 3. All non-ministerial permits (i.e. those which require some discretion such as a board vote)
Notes	<p>To promote an efficient process, community solar programs should ensure that developers have demonstrated significant progress in meeting certain project development milestones before they are eligible to reserve program capacity. The project selection process should allow projects to compete in the marketplace with other community solar providers and ensure that projects receiving approval into the program have demonstrated they are ready to build those projects.</p> <p>It is important to ensure that project maturity requirements are commensurate with the level of risk involved in the project selection criteria. These three criteria are appropriate for programs that award participation in the program on a first-come, first-served basis, which is CCSA's recommendation. However, if a program uses a project selection process that is inherently more risky for the developer, such as an RFP or lottery process, the project maturity requirements will likely need to be adjusted accordingly.</p> <p>There is considerable risk to a program's success if appropriate project maturity requirements are not provided from the outset. Not setting the bar high enough can lead to a program being overwhelmed by early-stage projects, creating inefficiencies for interconnection and the project selection process.</p>

Compensation

Community solar generation must be fairly compensated at a rate that reflects prudent long term grid planning, and offers an equitable value proposition for customers as compared to onsite solar energy options.

Key Questions to Ask: How should bill credit value be set?

Options to Consider	Retail-rate based approach Resource valuation approach
CCSA Recommendations	<p>As long as credits are transparent and predictable over the project life cycle, and provide subscribers with an economic benefit that is equitable, the resource valuation and retail-rate based approaches can both be effective.</p> <p>Policymakers should choose a compensation approach that can be implemented quickly, in order to give consumers access to solar in the near term. That said, credit rate approaches can evolve within a state over time as distributed generation markets evolve. Particularly in states where solar is only a small portion of the state's generation, a retail rate credit is likely to be the appropriate credit rate. This retail rate credit rate provides customers with a comparable bill credit to that available to rooftop solar customers and is a fair proxy for the value of that solar.</p> <p>Establishment of a value-based credit is best done as part of an evolution of utility distribution and resource planning, because it should be informed by analysis of the long term avoided transmission, distribution, environmental, and other costs associated with the local clean energy generation over the full tariff term. Short term avoided costs that may be used for traditional utility investments are not an appropriate benchmark for community solar planning. The characteristics of local solar generation, such as its ability to produce power where and when the grid needs it the most, make it particularly valuable, and that value can be captured through a well-designed tariff that balances predictability in revenue streams for project investors with sending market signals to incent the most valuable community solar configurations.</p>
Rationale	Bill credits should provide subscribers with an economic benefit that is equitable based on the long-term, clean, locally-sited energy produced by community solar facilities.
Example Language	<p>An electric company shall credit a subscriber's electric bill for the amount of electricity generated by a community solar project for the subscriber in a manner that reflects the resource value of solar energy, as determined by the [state regulatory agency].</p> <p>An electric company shall credit a subscriber's electric bill for the amount of electricity generated by a community solar project for the subscriber based on the applicable retail rate.</p>
Notes	<p>If the resource valuation approach is chosen, a transparent, data-driven process with broad stakeholder participation must be used to determine the valuation.⁶</p> <p>This likely necessitates setting an interim credit rate that can enable the program to launch while the valuation analysis and tariff development is done, in which case, a clear, predictable, timetable for changes in credit evaluation should be set and adhered to. While credit rates can evolve over time for new projects, once a credit rate approach is set for a particular project it should remain fixed for the life of the system in order to enable project financing and stability for consumers.</p> <p>If the retail-rate approach is chosen, special attention should be paid to determining which retail rate to use, as this is a state-specific issue. For example, in restructured states, the credit rate should be based on standard offer service rates as opposed to competitive supplier rates. It is also advised that the credit rate be based on a non-demand rate schedule, as different utility rate schedules can result in very low €/kWh charges as a result of customers paying high demand charges.</p>

⁶See: Rocky Mountain Institute, A Review of Solar PV Benefit and Cost Studies, September 2013, for a review of 15 distributed PV (DPV) benefit/cost studies that assessed what is known and unknown about the categorization, methodological best practices, and gaps around the benefits and costs of DPV. The review also began to establish a clear foundation from which additional work on benefit/cost assessments and pricing structure design could be built. <https://rmi.org/insight/new-business-models-for-the-distribution-edge-elab-new-business-models-report/>

Compensation

Key Questions to Ask: What should be the term of the tariff providing for bill credits?

Options to Consider	Life of the project Fixed term, e.g. 35 years
CCSA Recommendations	Life of the project or 35 years
Rationale	Community solar projects are long-lived, stable assets that will easily function for 35+ years. Customers should receive bill credits for the full life of the project, in order to maximize the benefits of their subscription. However, if it is viewed as administratively simpler to set a fixed number of years the tariff will remain in effect, a term of 35 years is reasonable.
Example Language	If life of project is selected, typically does not require direct reference in statute. If a fixed tariff term is selected: After 35 years from the date of commercial operation, a community solar facility shall cease to generate bill credits pursuant to [insert relevant section of community solar statute/rule that outlines bill credit methodology] and shall be compensated via an appropriate tariff for distributed generation as determined by the [insert state Commission]
Notes	States that have chosen shorter tariff terms, such as 20 or 25 years, have done so only in combination with parallel incentive programs that help make up for the economic shortfall to project developers that results from a shorter tariff term.

Key Questions to Ask: By what mechanism should credits be applied?

Options to Consider	Monetary Credit kWh Credit
CCSA Recommendations	CCSA recommends the use of a monetary credit, which is used in most markets. Regardless of whether a volumetric or monetary credit is used, it is vital that the credit is transparent to subscribers (for example, as a separate and clearly labeled line item on the customer's utility bill). With volumetric credits it is particularly important that utilities be required to provide transparent and timely reporting to subscriber organizations on the value of credits allocated to customers.
Rationale	Typically, there are higher transaction costs and more complexity associated with applying the value as a volumetric, kilowatt-hour, rather a monetary credit on the customer's bill. A volumetric credit can also make it more difficult for customers who are using a competitive supplier for their energy service to participate.
Example Language	A Utility shall provide a Bill Credit to a Subscriber's subsequent monthly electricity bill for the proportional output of a Community Solar Facility attributable to that Subscriber. The value of the Bill Credits for the Subscriber shall be calculated by multiplying the Subscriber's share of the kWh electricity production from the Community Solar Facility by the Applicable Bill Credit Rate for the Subscriber. Bill Credits that exceed a Subscriber's monthly bill shall be carried over and applied to the next month's bill.
Notes	If volumetric crediting is used, it is important to ensure that the application of credits to subscribers' bills does not change the underlying calculation of kWh delivered to the subscriber's location (for example, in areas with competitive retail supply). It is important to consider which portions of the bill the credit can offset and whether or not that results in a different value proposition across customer classes.

Compensation

Key Questions to Ask: How should unsubscribed energy or unallocated bill credits be handled?

Options to Consider	Utility must purchase Subscriber organization can distribute unallocated bill credits
CCSA Recommendations	CCSA recommends that both options be used together. Subscriber organizations should be allowed to sell unsubscribed energy to the utility at the utility's avoided cost. In addition, subscriber organizations should have the ability to accumulate unallocated credits as long as they are then allocated to subscribers within a set time period (e.g. one year).
Rationale	A backstop of purchase at avoided cost is helpful for community solar providers in securing lower cost project financing. Because the avoided cost rate is significantly lower than the credit rate for subscribed energy, there is a natural disincentive for community solar providers to have unsubscribed energy, but it is important to have the option to sell that energy to the utility at avoided cost if needed. The ability to reallocate credits may be able to provide more value and flexibility to subscribers and subscriber organizations, which can bring down overall project costs. This ability to bank credits is particularly valuable to allow customers to leave and other customers join the project during the course of a year.
Example Language	Utilities must purchase unsubscribed energy as directed by the Subscriber Organization at a rate equivalent to the electric company's avoided cost as determined by the [state regulatory agency]. Credits that are not allocated during a billing period are banked on the generator's account. These credits are then available, along with new credits, in the next distribution period. New subscribers, who are not part of the ongoing subscription list, may be allocated these banked credits that were accrued prior to their subscription start date. All credits must be allocated within one year of generation.

Key Questions to Ask: How should Renewable Energy Credits (RECs) be addressed?

Options to Consider	Subscriber organizations monetize RECs Customers allowed the option of retaining RECs
CCSA Recommendations	The REC provisions should allow subscriber organizations to monetize RECs, with the option to pass RECs through to customers at their choosing. When subscriber organizations monetize RECs, it provides a positive value proposition for customers. However, some customers, particularly large subscribers with sustainability goals, may want the option to retain and retire the RECs associated with their subscription.
Rationale	There are 29 states (plus D.C.) with renewable portfolio standards with different standards, rules and REC markets. In states with open REC markets, subscriber organizations typically monetize RECs to make the value proposition more attractive to subscribers. Subscriber organizations are usually better equipped to manage RECs and related transaction costs.
Example Language	All environmental attributes associated with a Community Solar Facility, including renewable energy certificates, shall be considered property of the Subscriber Organization. At the Subscriber Organization's discretion, those attributes may be distributed to subscribers, sold, accumulated, or retired.
Notes	It is extremely important that the community solar program clearly allow subscriber organizations to own RECs.

Consumer Participation

Community solar is all about expanding access to solar for everyone who pays an electric bill. Programs should be designed to maximize access, and promote a simple, straightforward, positive experience for the customer.

Key Questions to Ask: Should there be a minimum number of subscribers?

Options to Consider	More than one A single subscriber may be limited to receiving a certain percentage of a community solar facility's generation.
CCSA Recommendations	Either can be effective.
Rationale	A "community" is inherently made up of more than one participant. Requiring an arbitrary minimum number of participants may preclude onsite multi-family and urban installations.
Example Language	A community solar facility must have a minimum of two subscribers. No subscriber's subscriptions may total more than 40% of the nameplate capacity of an individual community solar project.
Notes	It may be useful to define "subscriber" to also include all affiliates and parent companies to avoid a situation, for example, in which three branches or locations of the same company take all the available subscriptions from a single project.

Key Questions to Ask: What minimum or maximum should be placed on individual subscription sizes?

Options to Consider	Minimum subscription size options: <ul style="list-style-type: none"> • No minimum • 250kWh Maximum subscription size options: <ul style="list-style-type: none"> • No maximum • Designed to at most offset a customers' utility bill over the course of a year
CCSA Recommendations	Limits should not be placed on customer subscription sizes. A minimum subscription size is not necessary and can be a deterrent to enrolling low and moderate income customers, but if desired can be set at 250kwh per year, approximately the output of one solar panel. Likewise, a maximum subscription size is intended to limit customers having excess credits at the end of the year. However, there is a strong disincentive for community solar providers to over-allocate credits as those credits have value which could be allocated to other customers rather than go unused. Maximum subscription sizes also inhibit increases in a customer's electricity usage, such as if that customer plans to buy an electric vehicle.
Rationale	To ensure equity and effectively spur the market, subscribers should be able to receive a value proposition similar to those participating in onsite generation. In most states, customers can offset most or all of their electric bill with onsite solar, thereby becoming "net-zero" energy consumers. Community solar customers should have the same opportunity.
Example Language	Subscriptions may be sized so that customers may reasonably expect to offset their total annual electricity costs. If no historical data is available, an estimate may be used. Subscriptions may be sized to offset up to 120% of the customer's historical average annual electricity consumption.
Notes	For new customers who don't have historical usage, a proxy estimation based on expected usage will be required. Customers with onsite solar should also be able to subscribe to community solar as long as the customer does not exceed any aggregate limits required by the program or otherwise as required by law

Key Questions to Ask: Should there be targets or mechanisms to ensure all customer classes can participate? If so, how should those be determined?

Options to Consider	A percentage of each community solar project's capacity is reserved for residential and small commercial customers. A percentage of the overall program target is designated for residential and small commercial customers, accompanied by a higher compensation level for projects with significant small customer participation, and division of available program capacity into multiple buckets, to ensure the target is met.
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Consumer Participation

CCSA Recommendations	<p>Either can be effective. To ensure that all community solar projects serve residential and small commercial customers, policymakers can require that each project allocate at least a specified percentage of its capacity to small customers.</p> <p>Alternatively, policymakers can set a MW target for small customer classes that is proportional to their representation (e.g., their % of total electric load or utility accounts), allowing projects with significant small customer participation to receive higher compensation for increased costs associated with managing small subscriptions.</p>
Rationale	Without an effective mechanism in place to include residential and small commercial customers, community solar providers will be incentivized to partner with a handful of commercial customers rather than solicit hundreds of customers that subscribe to small shares of a project. To date, programs that have successfully achieved small customer participation have designated a certain portion of a project or program as reserved for small customers.
Example Language	<p>At least XX percent of the total generating capacity of each community solar project must be made available to customers with subscriptions of 25 kilowatts or less.</p> <p>At least XX percent of the total generating capacity of the community solar program must be made available to customers with subscriptions of 25 kilowatts or less. The [state regulatory agency] shall create an incentive sufficient to overcome incremental costs of enrolling and managing small customers [through the renewable electricity certificate program or other means]</p>
Notes	<p>Providing higher compensation to projects with small customers has been used successfully in multiple states in encouraging developers to build projects with a majority of subscribers being small subscribers. In Massachusetts, for example, which has one of the most successful programs in the country, no more than two participants can receive credits from more than 25 kW of capacity from a Community Shared Solar Facility and the combined share of those subscriptions cannot exceed 50% of the total capacity. Just as importantly, Massachusetts' program provides higher compensation to projects with residential subscribers, via higher SREC factors and specific adders for these types of projects.</p> <p>In uncapped programs, appropriately set compensation can be sufficient to ensure small subscribers have sufficient access to the program. In programs with capacity limits, it is important to set requirements for small subscriber participation, either at the program level or project level.</p>

Key Questions to Ask: What consumer protection and/or disclosure requirements should be followed?

Options to Consider	<p>Must comply with existing federal and state consumer protection laws</p> <p>Develop standard language to include in all customer-facing disclosure forms</p>
CCSA Recommendations	Both options should be implemented. Consumer protection requirements should be based on existing consumer protections in state law and supplemented with a standard disclosure form to ensure customers can understand key contract terms and compare across providers. In 2018 Maryland adopted a community solar disclosure form that has been a model that several other states have chosen to follow. ⁷ This form provides the necessary flexibility to accommodate the numerous different models of community solar products while also highlighting the most important contract terms and conditions that consumers should understand. New York, New Jersey and Massachusetts have adopted similar forms to Maryland's model.
Rationale	Existing consumer protection laws already apply to community solar projects. It could create confusion and unnecessary administrative burdens and costs to create and apply additional rules.
Example Language	<p>Subscriber Organizations must comply with all applicable state and federal consumer protection laws.</p> <p>The [state regulatory agency] shall develop, in consultation with stakeholders, a standard disclosure form to accompany all customer-facing contracts.</p>
Notes	<p>Consumer disclosure forms should be succinct and flexible. Having a long and complicated form defeats the purpose of providing disclosures. CCSA highly recommends that the disclosure form be limited to a page in length and allow subscriber organizations to highlight the most important terms of the contract.</p> <p>The SEIA/CCSA Residential Consumer Guide to Community Solar includes specific recommendations for consumers to help them understand the basics of solar energy, where community solar is available, key terms in agreements and the right questions to ask solar professionals. CCSA members have also adopted the SEIA Solar Business Code. One of the most important things regulators can do to support consumer protection is to ensure timely and accurate bill crediting, to ensure consumers get what they are paying for.</p>

⁷ See https://www.psc.state.md.us/wp-content/uploads/Community-Solar-Contract-Disclosure-Form-and-Instructions_04162018.pdf from which additional work on benefit/cost assessments and pricing structure design could be built. <https://rmi.org/insight/new-business-models-for-the-distribution-edge-elab-new-business-models-report/>

Consumer Participation

Key Questions to Ask: When subscribers move, can they take their subscription with them or transfer it to another utility customer?

Options to Consider	Individual subscribers may take their subscription with them if they move within a utility service territory ("contract portability"). Individual subscribers may be removed, and new individual subscribers added to the project as needed.
CCSA Recommendations	Both should apply.
Rationale	Rules should remain flexible to allow subscriber organizations to meet the needs of customers and quickly adjust allocations if subscribers move outside the service area or cancel their subscriptions.
Example Language	Subscribers may retain their subscriptions if they move within a utility service territory Electric Companies shall remove subscribers who are canceling participation and add new subscribers to the project within one billing period, as requested by a Subscriber Organization.
Notes	Data transfer between subscriber organizations and utilities should be available through an electronic portal or software to avoid unnecessary data entry errors.

Key Questions to Ask: What geographic boundaries should be placed on subscribers' proximity to a community solar facility?

Options to Consider	Subscribers must be located in the same utility service territory as the community solar facility.
CCSA Recommendations	Subscribers must be located in the same utility service territory as the community solar facility.
Rationale	This approach seems to be the most administratively feasible, least restrictive option that has been applied to existing community solar programs.
Example Language	Subscribers must be located in the same utility service territory as the community solar facility.
Notes	Geographic boundaries that are smaller than the utility service territory may increase costs and/ or limit project availability for subscribers. Also, if the geographic boundary is too small, there may not be enough customers to fully subscribe a project and be assured that departing customers could be replaced.

Project Sizing and Siting

While solar is a relatively low impact land use compared to many other forms of development, states should proactively advise local jurisdictions regarding how community solar interacts with land use planning, and should ensure projects can be sized to optimize economies of scale.

Key Questions to Ask: Should facility size be limited and if so, how should the limit be determined?

Options to Consider	5 MW-AC Projects should be located on the distribution system and defined according to state characteristics and goals.
CCSA Recommendations	Either can work. Some economies of scale can be achieved around the 5 MW mark but a number of factors, including the availability of land, interconnection procedures and policy goals should be considered for each state in setting the project size.
Rationale	The project size limit should be set high enough to allow projects to achieve economies of scale, but low enough to still be considered a distribution-scale project. Some states may easily accommodate 20 MW projects whereas others might see a need to limit projects to a smaller size.
Example Language	Individual community solar projects shall be connected to the distribution grid and limited to XX MW-AC.

Key Questions to Ask: What requirements should be placed on where projects should be sited?

Options to Consider	State legislators and regulators let the local governments determine whether and under what conditions to site projects Establish guidelines for local governments Establish policy mandates for local governments to follo
CCSA Recommendations	State governments should provide guidance to local governments on how to evaluate projects through an objective model decision-making rubric.
Rationale	Solar development is similar to other construction projects in that permits from city, town, or county planning boards are needed. These must be obtained from local, state and federal agencies, such as county boards, state environmental protection departments and the US Army Corp of Engineers. Many local governments do not have ordinances for siting solar projects and often need guidance on how to evaluate proposed solar projects. State agencies can use incentives, such as Renewable Electricity Certificate (REC) programs or other incentives to encourage project development on certain sites. Massachusetts' SREC II program and New York's NY SUN program are two examples of programs which have incentivized projects on landfills, carports, and other preferred sites.
Example Language	Upon enactment of this act, [agency] shall distribute a notification introducing this act to local governments. Upon enactment of this act, [agency] shall develop and issue a model solar project evaluation rubric to local governments within the state.
Notes	CCSA has developed a rubric which local governments can use to evaluate community solar projects, which is available on the CCSA website .

Project Sizing and Siting

Key Questions to Ask: Should multiple systems be able to co-locate on a single or connected parcels of land?

Options to Consider	No co-location on the same parcel of land Multiple projects permitted on adjacent parcels of land
CCSA Recommendations	Siting multiple community solar projects on the same parcel of land generally should not be permitted. However, community solar facilities should be allowed to be sited on adjacent parcels of land. Should a non-community solar project be located on a parcel, a community solar projects should be allowed to co-locate with it on the same parcel.
Rationale	Where co-location on a single parcel is allowed (e.g., five projects capped at 1 MW each), this effectively results in a larger project with unnecessary costs (a 5 MW project with five separate interconnections, meters, etc.). If the intention is to allow a larger total project size per parcel, it would be more efficient to simply increase the project size limit rather than permit co-location of multiple smaller projects. Flexibility should be allowed for sites where multiple types of solar projects (onsite, behind-the-meter) can be interconnected. Co-location should not be a means for avoiding project size caps. When co-location is allowed as a means to avoid size caps, project benefits are concentrated and markets trend towards boom/bust cycles.
Example Language	Community solar projects shall be limited to XX MW per parcel of land. A single project may span multiple parcels of land.
Notes	If limits are defined per parcel of land, there may need to be a limit on the subdivision of parcels for the purpose of community solar program eligibility. ⁸ In addition, there may need to be a process established for considering exceptions for multiple projects on a case-by-case basis.

⁸ Massachusetts D.P.U. Order 11-11-C, August 24, 2012. <http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=11-11%2f82412dpuord.pdf>

Low- to Moderate-Income (LMI) Participation Considerations

Community solar represents an opportunity to increase low income customer access to affordable local clean energy. However, it's important to ensure policies designed to encourage LMI participation do not have the unintended consequence of limiting community solar growth.

Key Questions to Ask: How can LMI customer participation and benefits be supported?

Options to Consider	<p>Provide differential, higher incentives, structured to enable immediate savings for LMI participants Implement more structural financing solutions such as back-up guarantees, utility consolidated billing, credit enhancements, and low-cost financing, among others.</p> <p>If the community program is limited to a certain amount of capacity, require a certain percentage of the program to be set aside for LMI projects.</p>
CCSA Recommendations	<p>Programs should leverage existing, and potentially new, programs to de-risk financing low income projects. Financing that flows to the developer can address the challenge of financing the project and make for an efficient, accessible program for LMI participants.</p> <p>Consolidated billing simplifies the customer experience by creating only one bill for the customer, that reflects net savings on their electric account after accounting for the savings from their community solar bill credits as well their community solar subscription fee. Consolidated billing also supports project financing by reducing the risk of customer non-payment of subscription fees.</p> <p>The best way to support LMI participation in community solar is by enabling the community solar market to grow at significant scale, quickly, in order to bring down costs and foster competition and innovation in the marketplace. However, a LMI specific requirement may be attractive in order to ensure immediate attention to serving LMI customers. Rather than project-specific requirements for LMI participation, setting aside a portion of overall program capacity for LMI projects may result in a better experience for both developers and communities.</p>
Rationale	<p>Financing has been by far the most significant barrier to LMI participation in community solar programs. Community solar programs should address both accessibility and affordability.</p>
Example Language	<p>The [regulatory agency] shall identify program design opportunities for Low-Income Customers or Low-Income Service Organizations that encourage participation by such customers. The program structure should be designed to provide revenues to the project that sufficiently offset the financing risks associated with low-and-moderate income customers and should help ensure customers receive a tangible and immediate economic benefit as a result of their participation.</p> <p>The [Public Utilities Commission] and Utilities should collaborate with [appropriate state agencies], financing agencies, or local governments to develop new programs or access existing programs that provide for financing options such as loan loss reserves or other mechanisms, such as consolidated billing with utility purchase of receivables, to improve opportunities for low-and-moderate income participants and Low-Income service Organizations.</p>
Notes	<p>LMI programs can encourage innovative partnerships between, developers, state agencies, municipalities, non-profits, affordable housing authorities, green banks and community-based organizations. Such partnerships can be beneficial to multiple aspects of the program, from siting to outreach to project development. On-bill repayment should be offered to reduce barriers to participation.</p> <p>Additional information is available via IREC's Shared Renewable Energy for Low- to Moderate-Income Consumers: Policy Guidelines and Model Provisions.</p>

Key Questions to Ask: How should income status be verified?

Options to Consider	<p>Self attestation Link to existing programs</p>
CCSA Recommendations	<p>Programs should avoid a burdensome verification process for LMI participation. Options such as proof of participation in another income-based benefits program, a simple declaration form, or an existing housing authority verification process are good options to consider.</p>
Rationale	<p>Onerous and intrusive income verification requirements will decrease the likelihood of successful LMI participation. Additionally, a LMI verification process that requires community solar providers to shoulder significant verification costs will disincentivize participation.</p>
Example Language	<p>The [appropriate agency] shall institute a non-intrusive method for verifying LMI customer incomes such as a declaration or proof of participation in another state or federal low-income program.</p>

Updating Billing Systems

Utility software for billing and interacting with subscriber organizations and customers is often difficult, manual, and prone to human error. In Massachusetts, some utility customers received bill credits on their utility bills after multi-month delays, leading to increased energy costs and frustration for those customers. These delays were due to manual processes at the utility.

Utilities have the opportunity to foster a positive experience for these customers. At the very least, utilities need automated processes for allocating bill credits to customers' bills with the ability for subscriber organizations to easily upload how much of the system's generation is to be credited to customers and any changes to customers participating in the program that occurred over the month. Each month the utility needs to provide a report to the community solar provider showing the amount of credits applied to each customer's bill and any balance carried forward to the next month.

It is necessary for utilities to ensure a seamless process for making sure customer bills receive credits in a timely fashion and that there is sufficient exchange of data between utilities and community solar providers. One challenge to participation in a community solar program is that customers receive two bills—one from the utility and one from the community solar provider. Providing a consolidated bill, where the utility collects both the customers' utility costs and the cost of the community solar subscription, can improve the customers' experience by reducing the number of bills they receive. Should the utility purchase the "receivables" for subscription payments, the utility can leverage its bill collection systems and derisk customer subscription revenue, which is particularly beneficial to serving low-income customers. These customers often have undeveloped credit histories or low credit scores, which can increase a project's financing risk and potentially render them unfinanceable.

Interconnection

In nearly every new community solar market, regulators have needed to update interconnection procedures to address community solar applications. To avoid implementation obstacles, it is important to address potential interconnection hurdles before the community solar program is launched. Utilities must have updated procedures and processes in place to efficiently and cost-effectively process interconnection applications. At a minimum, these should include:

- Procedures based on FERC SGIP or other national best practices
- Up-to-date technical standards
- The option of a pre-application report
- A supplemental review process for projects that fail common technical screens
- Clear and transparent communication of upgrade costs
- A publicly available interconnection queue

It is also important for utilities, project developers, state agencies and other stakeholders to be able to work through interconnection updates on an on-going basis in a facilitated working group setting.

CONTACT US

info@communitysolaraccess.org

www.communitysolaraccess.org

The background of the page is an aerial photograph of a solar farm, showing rows of blue solar panels. The image is overlaid with a large yellow shape on the left side and a red shape at the bottom left. The text is positioned in the upper left corner.