COALITION FOR COMMUNITY SOLAR ACCESS

Quick Read for CCSA's Policy Guidebook:

Expanding Solar Access through Informed Policy Decisions

June 2024

CCSA has released a new comprehensive guide for designing and implementing effective community solar programs. The **Policy Guidebook** aims to equip stakeholders with the tools and knowledge necessary to develop successful community solar programs that meet state goals, ensure projects can be built, and facilitate an efficient and transparent process for providers and subscribers. In addition to helpful background information, this guidebook has three important sections devoted to policy design, aimed at helping decision makers understand the importance of getting the critical components right, while allowing them the flexibility to build a program that addresses the goals of their state The document also includes a summary takeaway of the guidebook's policy recommendations.

Program Design: Building a Program That Will Accomplish a State's Goals

This section provides best practices for designing community solar programs that align with state-specific goals and priorities. The section discusses the importance of defining clear objectives, such as increasing renewable energy capacity, enhancing grid resilience, and promoting energy equity.

Key Program Design Elements

Participation Options: CCSA recommends a broad consideration of eligibility criteria for subscribers, ensuring customers of all rate classes can participate. It is also important to consider the options for what types of entities can participate as community solar providers in order to ensure subscribers achieve savings from the program.

Tailoring the Program for your State: Policymakers have a number of opportunities to tailor their program to meet their state's goals; these include considerations around project and program size, targeted low-income participation, preferential siting, and grid reliability, among others.

Core Policy Foundation: Ensuring Projects Can Be Built

This section outlines the essential market mechanisms that facilitate the development and construction of community solar projects. Includes recommendations for designing an appropriate credit rate, ensuring that credit rate can be applied on customer electricity bills and providing for effective oversight and administration.

Key Policy Elements

Designing the Credit Rate: Designing an effective credit rate that compensates subscribers for the full value that their subscribed generation provides to the grid can be difficult but a thoughtful process ensures viability of project development. Without an effective credit rate, projects cannot be financed and built to deliver benefits to the state and its residents.

Utility Billing Requirement: Bill credits are the fundamental financing mechanism to ensuring a successful community solar program so it is critical to ensure utilities have the right direction and requirements to apply bill credits to subscribers' electricity bills.

Program Administration: Clear rules of the road are essential to an efficient market so establishing the responsible entity for the application process, general program rules and market oversight will ensure programmatic clarity.

Supporting Elements: Ensuring the Process Is Efficient and Transparent for Both Providers and Subscribers

This section addresses the regulatory considerations necessary to support an efficient and transparent community solar market. It includes guidance on interconnection standards, grid integration, and consumer protection regulations.

Key Supporting Elements

Interconnection Standards: Interconnection is critical to supporting a well-functioning market – establishing streamlined interconnection processes reduces delays and costs, ensuring projects can connect to the grid efficiently.

Consumer Rights and Market Transparency: Implementing robust consumer protection measures, such as clear contractual terms and effective dispute resolution mechanisms builds trust and confidence in community solar programs. It is also important to provide a mechanism for transparency in market operations, including the registration of subscriber organizations and regular reporting requirements.

Ongoing Review and Evaluation: Technical Working Groups can be beneficial in working through any implementation challenges along the way. Providing for a program evaluation process also allows the state to assess the effectiveness of the program and assess the need for updates overtime.

For questions related to how community solar can work in your state, please contact CCSA at:
info@communitysolaraccess.org

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1. Executive Summary

This policy primer is designed to serve as a comprehensive guide for legislators and stakeholders interested in the development and implementation of community solar programs. Recognizing the unique energy needs and policy environments of different states, this document is structured to provide a flexible framework that can be adapted to meet specific state interests, while also creating a viable framework that will allow projects to be built and deliver savings to electricity customers. It is intended to be used in conjunction with a companion document that provides Model Legislation for Community Solar Programs, providing a practical toolkit for policymakers to draft effective and sustainable community solar policies. This primer is composed of three main sections:

1. Tailoring the Program. The first section of the primer addresses the importance of customizing community solar programs to fit the specific needs and goals of individual states. It outlines a variety of program characteristics that can be tailored, including participation criteria, program and project size limits, and specific options lawmakers have in addressing concerns in their state (such as serving low-and-moderate income customers, siting or grid reliability). This section emphasizes the significance of flexibility in policy design, allowing for the creation of a community solar program that not only aligns with the state's energy landscape but also addresses the needs of its residents and stakeholders.

2. Kickstarting the Market. The second section focuses on the foundational elements necessary for establishing a vibrant community solar market. It discusses key components such as the bill credit structure, the utility billing requirement, and the oversight and administration of the program. These components are critical for attracting capital investment and encouraging market development. This section aims to provide policymakers with the tools needed to make sure that community solar projects can be built and provide savings to subscribers.

3. Ensuring Long Term Success. The final section considers the integration of community solar programs into the existing utility and energy infrastructure of a state. It covers essential topics such as interconnection standards, consumer education and protection, and ongoing program improvement mechanisms. This section is dedicated to ensuring the longevity and sustainability of community solar initiatives, addressing potential challenges and outlining strategies to ensure that these programs can thrive within the state's current energy landscape.

This policy primer is an essential resource for anyone involved in the planning, development, and implementation of community solar programs. By providing a detailed overview of the key considerations and components of successful community solar policy, it aims to empower policymakers to create effective, adaptable, and sustainable programs. When used alongside the companion document of model legislation, this primer offers a robust foundation for states looking to harness the benefits of community solar for their communities and the environment.

2. Who is CCSA?

The Coalition for Community Solar Access (CCSA) is a national trade association representing over 125 community solar developers, businesses, and nonprofits. Together, we are building the electric grid of the future where every customer has the freedom to support the generation of clean, local solar energy to power their lives. Through legislative and regulatory advocacy, and the support of a diverse coalition — including advocates for competition, clean energy, ratepayers, landowners, farmers, and environmental justice — we enable policies that unlock the potential of distributed energy resources, starting with community solar. The members and staff of CCSA have experience working in many different states under different community solar policy models across the country. CCSA member companies have invested more than $10B in private capital to help bring over 7.8 GW(dc) (estimated by end of 2024)[1] of clean energy generating assets to states that have enabled community solar.

[1] https://www.woodmac.com/press-releases/2024-press-releases/cumulative-us-community-solar-installed-capacity-expected-to-break-14-gwdc-by-2028/

3. What is community solar and why is it a critical part of the clean energy transition?

Community solar is one of the fastest-expanding segments within the solar industry, which itself is the fastest-growing energy sector in the country. Community solar gives all customers access to the benefits of clean energy, even those that cannot or do not want to install solar on site. In other words, these programs allow participants, including residents, businesses, non-profits, and other electricity consumers, to collectively support and benefit from solar energy, regardless of the physical or ownership attributes of their home or business.

Participants in community solar projects subscribe to a shared solar facility and, in return, receive credits on their electricity bills proportional to their share of the power generated. These shared facilities can be sited at a variety of locations on the distribution grid, including retired or active farmland, large commercial/industrial rooftops, brownfields and landfills. These projects provide land and property owners with an additional revenue stream by utilizing less productive land or rooftop space for energy generation.

Community Solar projects (also sometimes called “installations,” “farms,” or “gardens”) are usually 1 – 5 Megawatts (MW) in size, with each MW typically requiring about 5 – 7 acres of land or about 70,000 – 100,000 square feet of commercial/industrial rooftop space. For reference, a 5MWac community solar project could power approximately 1,000 average homes and offset around 7,000 metric tons of CO2 annually, which is equivalent to taking about 1,500 cars off the road each year.

A community solar projects’ financial viability significantly depends on subscriber participation. These projects involve setting up a large-scale, long-term solar power facility which feeds electricity into the local power grid under a standard tariff.

A portion of the solar array’s capacity is assigned to each subscriber. In return, the subscriber receives credits on their electricity bills proportional to their share of the power produced. This leads to significant savings on their energy costs. However, for the project to become financially sustainable, it must enroll enough subscribers to cover the costs of construction, maintenance, and operation. The revenue generated from selling bill credits to subscribers is the most important component of the project’s financial success. The project developers, therefore, invest considerable effort in marketing and community engagement to educate, attract and retain subscribers, ensuring the project’s long-term viability and profitability.

This document aims to provide a high-level summary of the best community solar program design practices. Using these program elements, states have harnessed the private sector to expand solar access and its financial benefits to their communities.

Why is Community solar right for your state?

Community solar can:

- Deploy clean energy quickly while utility scale renewables face long transmission queue delays
- Unlock millions in private investment
- Support farmers and help family farms stay in business, passing the farm down to future generations
- Deploy clean energy in urban locations like warehouse rooftops and landfills
- Provide electricity bill assistance to low- and moderate-income households
- Provide electricity users with the choice to support clean energy
- Support grid resilience in a time of increasing climate disasters
- Allow policymakers to design a targeted program for their specific state goals

4. How to use this document

Community solar offers a transformative approach to democratizing access to clean energy. Key policy decisions made during the legislative process will shape the trajectory, capabilities and ultimate success of a state's community solar program. This primer provides both an overview of the critical components of community solar policy and draft legislation to guide effective implementation.

When designing a new community solar market, it is important to consider the interplay of legislation and regulation. The interaction of these policy frameworks will play a pivotal role in shaping the market's landscape and its operational dynamics. The key is to consider the flexibility of each component, ensuring that the most critical elements are securely anchored in legislation, while allowing more adaptable aspects to be governed by regulations.

The Role of Legislation and Regulation

Legislation lays the foundational framework, setting the broad contours of the community solar program. This typically encompasses a set of minimum critical aspects such as the methodology for resource valuation, mandatory utility billing protocols, and the overall scale of the program. These legislative directives provide a clear, often rigid, structure within which the market operates, ensuring stability and predictability.

Regulation, on the other hand, offers a more nuanced and adaptable approach. Program regulations form the finer details of the program, tailoring it to the state's unique context. When determining how prescriptive state legislation should be, it is important to consider the regulatory commission's and utilities' experience with distributed solar programs, the commission's capacity and resources, and the state's broader clean energy objectives. Regulations act as a bridge between the legislative framework and practical implementation, offering a balance between rigidity and flexibility.

The purpose of this document is to help decision makers understand community solar policy and make choices in program design that will produce a highly efficient, cost-effective and sustainable community solar program. Successful community solar programs result in rapid deployment of solar projects, effective application of credits to utility bills and, perhaps most importantly, reductions in subscribers' energy bills.

In order to engage in effective program design, it is important to understand which pieces of program design are critical to open a market (foundational) and which are designed to provide flexibility (customizable). Foundational program elements are those necessary to build projects and serve subscribers in your state. Optional, flexible or customizable program elements are those which allow decision makers much more flexibility to create a program tailor-made for their state. The rest of this document is broken down into:

1. **Tailoring the Program** - this section describes some of the more **customizable program characteristics** that allow policy makers to design a program that fits their state's needs;
2. **Kickstarting the Market** - this section includes the **foundational components** of a program that enable market creation and development to attract capital investment; and
3. **Ensuring long Term Success** - this section considers how to **fit Community Solar into your state's existing utility and energy landscape**, including issues such as interconnection, consumer education and other necessary program elements to ensure the community solar program can exist in existing structures.

Each section walks through the important categories and our recommendations for each in order to create a program that works. The conclusions and recommendations are drawn from direct CCSA member experiences in markets across the country. This is a companion document to CCSA's Model Legislation and is meant to be used as an explanatory resource for that document. As an appendix to this document, we have provided a proposed program design that balances the key program design issues to serve as a takeaway and starting point for considering a new program.

Finally, the existing nature of utility regulation in a given market must inform decision makers' consideration of the issues throughout this document. Whether a state is vertically integrated (where the utility owns generation) or restructured (which has a competitive retail electricity supply market) as well as its participation in a centralized power market (such as PJM or MISO) will introduce additional considerations into some of the issues raised below. We recommend that the reader consider the nature of the state's utility regulatory landscape as they consider community solar program design.

5. Program Design: Building a program that will accomplish a state's goals

There are many choices a policy maker needs to make in order to set up a community solar program that is uniquely tailored to their state's needs. The following sections walk through the most important decisions, providing guidance and recommendations based on lessons learned and experiences in states across the country.

A. What does the program look like?

I. Participation

Community solar programs have a positive impact on a wide range of market participants, from contractors who benefit from project development opportunities to land and commercial/industrial rooftop owners who earn leasing revenue, to local governments who receive local tax revenue.

For the purposes of program design, policymakers should consider two main types of participants: Community Solar Providers and Community Solar Subscribers:

a) Provider participation

Community solar markets thrive when they create opportunities for local companies and developers to grow into the community solar market space while providing the scale to attract well-funded organizations who can provide market expertise, bring best practices, and provide low-cost development capital.

The most expedient and economical approach to cultivating a robust community solar market is through third-party ownership (i.e. private ownership rather than utility ownership and market control). This structure not only maximizes consumer savings but also enhances the efficiency of project development and allows many types of private companies to work together to create competitive savings for subscribers. This approach also attracts private capital to support a vibrant market that will determine the appropriate mix of project types and benefits in response to the needs and priorities of customers and state policy.

b) Subscriber participation

The people and entities that benefit from a community solar program should reflect the state in which it operates. A thoughtful approach to program design would consider various forms of participation, ranging from residential subscribers to the inclusion of commercial and industrial entities, as well as active participation from municipal, county, and other government bodies. As a result, the definition of "community" should be considered a broad and inclusive entity with respect to the program rules. The essence of such a program is to allow multiple participants to benefit from a single solar power project, which promotes inclusivity and shared benefits. **Subscribers to a community solar program should be located within the same utility service territory as the project but should not have more restrictive boundaries placed on subscriber location.**

However, it is important to note that program participation can easily become disproportionately skewed towards large customer subscribers as they are easier for a project to acquire, easier to finance, and are often more engaged energy consumers. Including subscriber characteristic requirements into the program ensures that the benefits of solar energy are accessible to a broader base of the community. Potential requirements for policy design consideration include minimum thresholds for residential and small commercial subscribers, low income or other demographic criteria. For example, **states often set subscriber requirements for residential and small commercial customers at around 40-60% of generation capacity. Alternatively, instead of a minimum requirement for small subscribers, programs can implement a cap on the percentage of generation capacity that can serve larger subscribers.** Both approaches are effective at ensuring the program serves a diversity of subscribers and a representative cross-section of the community. Some states may also wish to set requirements for Low- and Moderate-Income (LMI) households and LMI service providers, which is addressed in the LMI section of this document, as well as the Low-to-Moderate Income Community Solar Program Design Recommendations.

These subscriber participation requirements can be set at the project level (i.e. each project must serve a specific mix of customer characteristics) or at the portfolio level (i.e. the program overall across all projects together must serve a specific mix of customer characteristics). The portfolio approach allows flexibility for projects to meet the needs of individual communities, while also meeting the broader state goals, but it can be more difficult to enforce.

What about utilities?

Utilities play a crucial role in the development and success of community solar markets, integrating projects into the grid and facilitating bill crediting and consolidated billing. However, it is important to delineate this role carefully, particularly in the context of ownership and project development. Typically, Commission-regulated monopolies are not positioned to offer significant bill savings, which is a key aspect of making these programs attractive and accessible to a broader public. Allowing utilities to own and develop these projects could also lead to a conflict of interest, shifting risk onto ratepayers and stifling market-driven innovation and associated cost reductions. Moreover, tax laws do not allow utilities to deploy capital as efficiently as third-party developers.

Instead, the focus should be on leveraging the efficiencies and competitive dynamics of the private market. By enabling specialized community solar developers to construct and manage these projects, a more vibrant and customer-centric market can emerge. This approach not only fosters innovation and cost-effectiveness but also ensures that community solar programs remain true to their core objective of broadening access to renewable energy through more competitive pricing and diverse offerings.

II. Program size

Community solar, especially projects located closer to where energy is consumed, is proven to make the grid more resilient and less expensive, especially when paired with battery storage. In fact, research shows that a clean electric grid that better leverages smaller scale solar resources (like community solar projects) can save our grid tens of billions of dollars. And with alignment of new federal incentives and competitive third-party development of community solar, states can infuse billions of dollars of private and federal capital to build public infrastructure and create tens of thousands of family sustaining jobs all while achieving their most important policy objectives.

In designing a community solar program, states should focus on creating a conducive environment for community solar to flourish by establishing clear, long-term objectives and market signals that guide development towards these ends. This approach allows the market to expand organically in alignment with the state's clean energy targets and the specific needs of the communities the projects serve.

The limiting factor in solar deployment is often a utility system's ability to facilitate cost-effective interconnection for projects. In order to accurately gauge the potential and plan for the integration of community solar within the energy mix, states should leverage comprehensive grid modeling and planning tools. These tools can provide a detailed analysis of how community solar can be scaled up effectively, taking into account factors such as grid capacity, energy demand, and resource needs. By using these sophisticated planning instruments, policymakers can ensure that the expansion of community solar is both strategic and sustainable, contributing to the state's broader goals for clean, renewable energy. Expanding distributed renewable generation must be done in a way that allows utilities the runway to better plan for and integrate these novel types of distributed community solar resources.

In addition, policymakers should provide for market certainty by allocating a sufficient amount of capacity to attract investment. **CCSA recommends setting this amount at the capacity required to serve 10% of the state's total electric retail sales, with a Commission-led evaluation process when the state's community solar project capacity reaches 8% of the state's total electric retail sales.** This capacity should be provided on a first-come, first ready basis. (For more information, see the section of this document related to the Application Process.) This approach will provide a long-term runway that will allow private companies to deploy capital and also allow for economies of scale that can deliver maximum savings to subscribers.

III. Project size

Since 2020, most **state programs have adopted project size caps in the 5 MW range, a size which can be accommodated on the distribution grid and which is consistent with federal funding guidelines via the Inflation Reduction Act.** However, some states could accommodate higher project size limits, depending on their distribution grid and interconnection requirements. When setting system size limitations, states should consider the typical requirements for other DERs located on the distribution grid, utility grid constraints and the state's clean energy goals.

IV. Siting considerations

Policy makers should design program regulations to maintain the distributed nature of energy resources. Typically siting regulations are created and carried out at the local level; however, the overall program design can help create a balance between ensuring projects can be built and allowing communities to ensure the projects are thoughtfully designed and integrated into communities.

Program rules should specifically tackle issues related to the subdivision of land parcels and the co-location of facilities. However, the regulatory commission should be empowered to make sensible exceptions to these siting rules to support broader public policy goals. For example, the state might want to facilitate community solar on sites like brownfields, large commercial/industrial rooftops, or landfills and may choose to grant these types of projects siting exceptions (such as additional co-location options) that align with the goals of the state.

Based on experience across many states, the following siting guidelines create an appropriate balance:

1. **Community solar facilities may not be sited on a parcel that has been subdivided for the purpose of exceeding the program's size limitation in aggregate across the subdivided parcels.** The Regulatory Commission should be enabled to establish reasonable exceptions to this prohibition in furtherance of public policy objectives and to ensure equitable access to the program.

2. **Co-location of community solar facilities may be allowed either up to the program's size limitation or with other types of facilities** (e.g., non-community solar rooftop, utility-scale, DG RFP, etc) or at the regulatory agency's discretion. (e.g., some markets exempt preferred-siting categories from co-location restrictions).

B. Enhancements to support state policy goals

I. Low and Moderate Income Participation

For states that wish to foster more inclusive participation in their community solar initiative, it is critical to prioritize ease of access for low-and-moderate income households (LMI). To set-up a successful program, states should focus on education, enrollment, retention, and periodically revisit their program design to ensure inclusive and equitable access.

Many states have relied upon project or program carve-outs to create space for LMI household participation in the clean energy transition. **When establishing a carve-out, states should expand eligibility to include non-profits serving LMI households, affordable housing, and master-metered buildings.** Appropriate eligibility requirements are crucial for the market to meet the carve-out thresholds and to ensure that the benefits of community solar are equitably distributed among those who stand to gain the most from these programs.

Carve-outs should be supported by policies that simplify income verification and billing, ensure fair valuation and provide robust consumer rights and protections.

CCSA advocates for a simplified income verification process for individual subscribers to indicate LMI eligibility, that respects the customer's privacy and minimizes complexity. To this end, **CCSA endorses the use of self-attestation, categorical eligibility based on enrollment in other income-based programs, and geo-eligibility as methods to determine qualification for the community solar program.** We strongly recommend against the use of credit checks or the requirement to review sensitive tax information as methods for income verification, as these can be intrusive and unfairly burdensome on the subscriber and lower interest in program participation.

In addition to simplifying the enrollment process, states should invest in robust educational campaigns about the state's community solar program and the benefits it can deliver. State education campaigns can ensure equitable and inclusive participation. Campaigns explaining the benefits of community solar investments are critical to build trust and spread accurate information so that customers realize the benefits of participation. It's important regulators understand low-to-moderate income households are not a monolith. Therefore programs with LMI carve-outs should include various strategies to help educate and engage this diverse population.

Retaining customers should be equally as important as enrolling them. It is critical that regulators take the necessary steps to ensure their state's community solar program rules are compatible with low-income benefit assistance programs such as LIHEAP, balanced billing programs and affordable housing income rules. Households should not be penalized or removed from other assistance programs as a result of their participation in a community solar program.

Community solar should be a seamless experience for the subscriber so it is imperative that regulators hold utilities accountable to delivering on-time and accurate bills to low-income households. Households living on a limited budget cannot afford to receive multiple bills at once, or pay additional sums due to inaccurate billing. If the product is advertised to help households save money, an experience filled with inflated and delayed bills does not live up to its promise and impacts the retention of low-income households.

We strongly support a requirement of guaranteed savings for income-qualified households and advise regulators to accurately value community solar projects and consider additional state incentives when needed. It is important to gather stakeholder input and potentially an economic analysis in order to create a guaranteed savings that the state's community solar market characteristics can support.

These general provisions can help ensure that LMI households and disadvantaged communities are not left behind as we move towards a more sustainable and inclusive energy future, while also maintaining a flexible and easy program design.

II. Preferred Siting

There are a number of ways policy makers can support locating community solar projects at sites that are considered preferred from their state's perspective. One effective approach is to offer flexibility on project size caps and co-location for preferred sites. Allowing projects to maximize the land or commercial/industrial rooftop space available for these preferred siting types will encourage deployment of larger installations at the most beneficial locations, making renewable energy projects more financially viable and appealing to investors. Another approach is to offer higher bill credit or REC values for energy produced in preferred sites, to compensate for the additional ratepayer or societal benefits that community solar projects on preferred sites provide. The following preferred siting categories have been of interest to different states around the country and warrant discussion.

a) Disturbed land (including brownfields and landfills)

Brownfields, landfills and other types of disturbed land can be an effective site for a community solar project. In particular, these sites present municipalities, who have been paying to maintain landfills, with the ability to put these lands back to work generating both energy and income. However, it is vital to understand the feasible siting potential that a state's brownfields and landfills provide, along with the additional cost to site projects on these parcels. Before developing a policy around brownfield and landfill siting, it is important that policymakers understand the total feasible potential of siting on landfill and brownfield parcels. There are a limited number of these sites available in any state and not all landfills and brownfields make suitable sites for solar project development. Developing these sites depends heavily on their proximity to utility infrastructure, the slope of the site, shading considerations and other factors. As a result, it is important to ensure that siting on brownfields and landfills are one option for community solar but that the program is not restricted to these sites.

b) Rooftop

Policymakers should ensure that neither program rules nor value propositions prohibit projects from being located on rooftops. Commercial/Industrial rooftop projects are often able to reach commercial operation faster than ground mount projects because 1) they are sited where there is already existing electrical infrastructure so they may have fewer interconnection hurdles and 2) they typically do not face permitting challenges or zoning hurdles because they cannot be seen from street level. Commercial/industrial rooftop siting can be a particularly valuable tool in land-constrained states or in states with substantial urban areas, where ratepayers and the grid would benefit from siting solar close to energy consumption (e.g. by minimizing use of the distribution and transmission grid).

Commercial/industrial rooftop community solar projects are typically more expensive to develop than ground mounted projects, because leasing a large urban rooftop often costs more than leasing rural land. Accordingly, if policymakers want to enable commercial/industrial rooftop projects for community solar programs, it is important that such added costs and added value be reflected in bill credit rates, RECs, and/or other incentives/preferences.

c) Agrivoltaics

Policy makers who are interested in providing landowners an option to integrate their solar and farming operations may want to consider agrivoltaics as a strategic solution. Agrivoltaics offers a dual-use technology that combines solar energy production with agriculture, ensuring that land continues to be used for farming while also generating renewable energy. It is important that the definition of agrivoltaics aligns with the state tax assessment's definition of an agricultural operation, allowing the policy to be customized to the specific agricultural markets of each state.

Agrivoltaics operations can be highly specialized and are not always of interest to farmers so it is important to ensure that community solar program rules consider agrivoltaics to be a separate category beyond the traditional program. Furthermore, if the state requires any highly-customized design requirements which would increase the cost of the array, the program should provide an additional valuation stream to enable these types of projects to be built.

III. Enhancing Grid Reliability

Community solar represents a key strategy in enhancing grid resilience, particularly in states vulnerable to natural disasters and those challenged by overburdened electricity infrastructure. By enabling local energy generation through distributed solar projects that are paired with storage, community solar could help maintain power during grid outages, supporting the economy and essential services such as medical care and emergency shelters. The distributed nature of these projects fortifies the grid against centralized failures, mitigating the risk of widespread blackouts. When paired with energy storage systems, community solar projects help balance the grid's load, especially during peak times, and align with goals for clean, renewable energy. The Federal government maintains an **Interruption Cost Estimate (ICE)** Calculator that is a helpful tool designed to help states estimate the actual costs of electricity disruptions.

Technological advancements like smart inverters and energy storage, along with improved interconnection standards, are vital for integrating community solar into the grid efficiently. Smart inverters ensure dynamic response to grid conditions, enhancing power quality and reducing outages, while energy storage captures surplus solar energy for use during high demand periods, lessening the reliance on peak power plants and lowering costs. Streamlined interconnection processes reduce costs and complexities, fostering the growth of community solar initiatives. These combined efforts decentralize power generation, bolster grid stability, and contribute to a sustainable energy landscape with community solar playing a central role.

To integrate community solar projects with advanced technologies such as smart inverters and battery storage as quickly and efficiently as possible, a long-term plan of how best to incorporate these new features into the electric grid (both distribution and transmission) is essential. Such planning should be conducted by utilities in coordination with long-term planning committees at state agencies and regional transmission organizations (RTOs). State regulators or other governing bodies should also convene stakeholder working groups to identify key issues and improve coordination. At minimum, state policymakers should implement Integrated Distributed Planning (IDP) requirements for utilities.

6. Core policy foundation: Ensuring projects can be built

The following three sections provide detailed guidance on the core policy foundation that ensure projects can be financed and built. These include:

- Designing the Credit Rate;
- Utility billing requirement; and
- Program Administration

These categories represent the most important issues that need to be built into program design in order to ensure a viable program. Without a proper weighting and design for these three elements, project developers will not have sufficient support and regulatory certainty to enter the state's community solar market. Setting up these elements appropriately will make or break your state's community solar program.

A. Consumer Access: Compensation structure that appropriately values the clean generation source and allows projects to be built.

Economics are the most important underlying factor driving the success of a community solar program. Deploying community solar requires a combination of upfront capital for project development and customer acquisition costs, followed by ongoing costs to account for project O&M, customer management, and billing costs. Community solar projects have modest ongoing costs because their fuel source (the sun) is free; however, the upfront costs can be a multi-million dollar endeavor.

Credit rates and economic stability should be the central pillar around which the rest of the program is built. Before moving ahead in a market, prudent investors require assurance that the cost outlay for developing and constructing the project is predictable and will be recoverable primarily through the credits associated with its generation. In order to make these projects work, developers and long-term owners of community solar projects need long term stability in credit rates, certainty around the length of time those credit rates are available, and transparency in the crediting process. In other words, the credit rate is a central component to the economic foundation of a community solar market.

Many of the community solar markets to date have begun by using a simple credit rate that mirrors a subscriber's current full retail rate. This is akin to net metering but usually appears as a monetary credit rather than a kilowatt-hour offset. In fact, using a credit rate based upon a subscriber's retail rate has been the simplest and most practical mechanism for establishing successful community solar markets throughout the country.

Over time and as markets evolve, states typically move toward a value-based compensation approach - a more complex rate structure that is designed to value the solar generating resource with more precision. This valuation can be based on location, time of production, societal benefits and other factors that are important to meet the state's clean energy, equity, health, land use or other goals. In order to accomplish this more nuanced value, regulatory agencies must undertake an in-depth stakeholder engagement and economic modeling exercise to quantify the various values and ensure projects will be financially viable under the state's new program rules. These more complex credit rate designs take time but can be a more accurate reflection of the credit rate and set the state up for long-term success.

I. Subscriber Credit Rate

While community solar is still a new concept for many states, Commissions who are beginning down this path now have access to the collective ratemaking experience of the states that have already gone through the labor of creating a specific value-based credit rate for community solar. As such **CCSA recommends that states who are new to community solar skip ahead to creating a value-based community solar credit rate.** There are a number of structures available to Commissions that are dialing in an appropriate credit rate - from fairly simple and straightforward to complex and project-specific, but all structures must involve a stakeholder engagement process. Following the passage of legislation, **CCSA recommends that the Commission immediately open a proceeding to adopt a valuation approach that:**

- **Quantifies the value that community solar projects provide in avoided utility energy, capacity, transmission and distribution costs, along with emissions reductions**
- **Considers the additional values that distributed community solar projects may bring in terms of avoided line losses, grid reliability and resiliency, grid services capabilities,contributions to facilitating a clean energy transition for the state paired with other societal benefits;**
- **Determines additional compensation value, additive to the solar credit rate, for Community Solar Facility types that serve state land use, ratepayer savings and/or equity goals; for example, those on preferred locations such as brownfields or large rooftops, or those that serve only community service providers such as schools and shelters**
- **Ensures the ability to finance, develop and maintain community solar projects;**
- **Considers grid integration costs for utilities; and**
- **Maximizes the value that ratepayers, subscribers and host communities will receive from these projects.**

The aim of this approach is to provide the regulatory commission with the legislative intent to leverage community solar as a vehicle for achieving emissions reductions, grid benefits and other important values. CCSA strongly recommends allocating funding to increase Commission staff or hire a third-party consultant for the purposes of program implementation.

As noted above, this value proposition can be structured in different ways, depending on a number of factors. Examples of credit rate designs that have worked include:

- Detailed value stack that provides a project-specific calculation, based on the characteristics and location of the project, as in the case of New York's VDER approach;
- A value that combines different structures to create a value proposition for community solar projects, e.g. the Supply rate + Upfront Rebate + REC value, as in the case of Illinois.

Importantly, there are also a few mechanisms which typically do not work:

- Avoided cost or supply-only rate as defined by states' implementation of the federal Public Utility Regulatory Policies Act (PURPA) or the supply-only portion of the retail rate
- Variable rates or those that have an uncertain future.

To provide more context, a traditional PURPA avoided cost bill credit rate (which is typically less than half of a customer's full retail rate), or a rate that changes unexpectedly, can significantly hinder the development of community solar projects. These types of rates often fail to accurately reflect the true value of the energy provided by community solar projects. In addition, sudden changes in rates introduce a high level of uncertainty and risk for developers, investors and subscribers. The unpredictability of earnings makes it impossible to secure financing and plan long-term projects, as the financial viability of these projects becomes difficult to ascertain. When unpredictability deters investment in community solar it slows market growth and undermines efforts to expand access to renewable energy sources. Stable and predictable compensation rates are crucial for encouraging the development of community solar projects, as they provide the financial security needed for these projects to be viable and attractive to investors.

Lastly, it is important to note that energy markets are complex and can change rapidly. Community solar legislation should be cognizant of the potential need for changes in rates for new projects over time while protecting existing compensation for developed projects. For example, if a Commission approves an interim community solar rate while it finalizes a value-based credit rate, providers should have the option to retain that rate for the life of the project. Generally speaking though, as markets evolve, it is important to mitigate the risk of regulatory change to any particular project. **CCSA strongly recommends allowing existing projects to remain on previous rate structures as a market evolves to more advanced rates, to ensure that existing and approved projects have rate and compensation stability to ensure that projects may be financed and developed.** It is also vital to set up terms for the length of time projects may receive a particular credit (see Length of Project Term section below).

II. Unsubscribed Energy of the Project

Generally, community solar providers have an incentive to keep projects fully subscribed because that maximizes the value that those projects can receive in revenue. As such, the amount of energy that is not assigned to a customer (i.e. unsubscribed energy) is minimal. However, some amount of subscriber churn is always expected, typically when people move out of their utility service territory and cannot take their subscription with them. It is important that program rules specify how unsubscribed energy is valued.

To allow flexibility for providers to best manage their projects, and to best maximize the benefits ultimately passed on to subscribers, CCSA recommends that subscriber organizations be allowed to make changes to their subscriber lists in real time or at least on a monthly basis. Projects should be able to bank unsubscribed bill credits for at least a year to account for subscriber turnover and unexpected changes in subscriber consumption patterns. Finally, community solar providers should be able to direct utilities on how to allocate unused credits through the allocation process. After the allowed banking period has expired, any remaining credits should be paid out at the utility's avoided cost rate.

III. Renewable Energy Certificates

States vary significantly in their approach to Renewable Energy Certificates (RECs) and other non-energy benefits of renewable generation. One non-energy benefit is the environmental or zero-emission attribute of solar generation - this benefit can be assigned value separately from the electricity generated by the community solar project. RECs from a community solar facility can be very helpful in achieving a state's specific, measurable climate targets. At the same time, these attributes are very important to some community solar subscribers, such as corporations or individuals that are trying to meet their own clean energy goals. This clean energy value can be an important revenue stream for the project and it is important to provide flexibility to the developer regarding the retirement or monetization of RECs.

CCSA recommends a structure that contributes to a positive value proposition for customers given the existing renewable energy policy environment in which the program is developed. This may take different forms in different markets but generally **RECs should be retained by the community solar provider, who may choose to retire them on behalf of the subscriber or monetize them to increase the bill savings that a subscriber receives.**

B. Utility billing requirement: Utility must place credits on subscriber bills or otherwise facilitate billing

Community Solar subscribers receive tangible savings when the utility applies community solar credits on their monthly electricity bill. Billing is complex and requires sufficient planning and oversight but is extremely important to get right. Because utility billing lags electricity consumption, the electricity bill provides credits to the customer for the prior month's generation based on the prior month's consumption. Typically, a subscriber's community solar savings amount to around 10-20% of the subscriber's electricity bill, but savings vary depending on market structure and monthly changes in both project output and customer consumption. If a community solar project is not compensated through subscriber fees on the subsequent monthly bills they have no other way to monetize the generation that has already been provided to the grid.

I. Bill credit mechanism

There are multiple options for providing community solar billing, however, policymakers should focus on program designs that ensure accurate, timely and transparent billing processes for all participants. There are two common billing methods: net crediting on a unified bill and monetary credits on a dual bill. Net crediting provides both the energy credit and the subscription fee on a single bill, which is typically provided by the utility. Essentially, the utility provides the customer's credit as a reduction in electricity consumed and simultaneously collects the subscription fee to compensate the project owner for the costs to build and maintain the community solar project. Alternatively, a program can use dual billing, which applies the customer's credit as a reduction in electricity consumed on the utility bill while the customer pays a separate subscription fee to the community solar provider.

For either approach, billing errors, delays in payment and an inability to verify the accuracy of the billing process will create negative customer experiences and increase business risk for the project developers. Thus, it is important to build in accountability measures for utilities, to ensure subscribers are receiving credits on an accurate and timely basis. For states that employ a performance incentive mechanism or other metrics for utilities, billing and crediting accuracy could be built into that utility compensation mechanism.

Net crediting offers a better experience for the subscriber because it is a single bill that more clearly reflects the subscriber's savings. It also eliminates the time-lag associated with dual billing where the provider must rely on consumption data provided by the utility after the billing period in order to then bill for the corresponding subscription fee. Net crediting is particularly important for low- and moderate-income subscribers who benefit from a utility's multiple bill payment methods and the simplicity of a single billing interaction.

For new markets, states should create an immediate pathway for implementation of net crediting. The regulatory commission should work with stakeholders to ensure that net crediting is available, at the community solar provider's option, within a date certain following the adoption of community solar program rules. States may also want to maintain the option of dual billing, as it provides customers and community solar providers with additional customer service options.

II. Length of Project Term

A community solar installation will continue to provide electricity to the grid as long as the installation remains interconnected. The cost of developing a solar installation are largely up front costs and require certainty over long term compensation in order to secure financing. As such, **bill credits should be provided indefinitely until a project informs the utility that credits should stop accruing.** By ensuring this structure, states can minimize the costs and maximize the life and value of these generating assets by ensuring providers receive a predictable and stable value stream for the full operational life of the project. Regulators may want to consider a set term length (e.g.e 25 years) for projects to access a specific credit rate but projects should be able to continue to access the future credit rate from the end of that term until the community solar project owner elects to stop providing credits.

III. Data exchange and Subscriber list updates

Subscribers naturally rotate in and out of a project for the life of that system. Community solar providers and the utility must be able to accommodate these changes in an efficient manner. This requires ongoing communication capabilities between the community solar project and the utility, which is both receiving the generation output and billing the associated credits to the project's subscribers.

The most effective data management systems are based on a data exchange portal which allows community solar providers to make ongoing changes to subscriber lists, receive information about customer usage and verify billing accuracy. An automated process also greatly reduces the opportunities for errors in data transcription. Similar to generation and customer consumption data, subscriber list changes should be processed by utilities, at a minimum, on a monthly basis.

Community solar providers must have sufficient transparency into the utility bill crediting process to ensure that subscribers are being accurately billed for the credits they receive. Therefore programs typically set up a reporting system whereby utilities send the following minimum data to providers on a monthly basis:

1. Total amount of generation from the facility;
2. Total value of the bill credits; applied in that cycle
3. Subscriber list including:
    a. Utility account number and the allocated credits each subscriber received;
    b. The previously banked credits attributed to each subscriber, and expired credits if applicable
    c. The customer's average monthly usage over the previous 12 months (or a similar relevant figure)
4. Participation status in the utility's energy assistance program

This data should be communicated on a monthly basis or so that providers can ensure subscribers are receiving accurate savings and can provide them with timely and accurate bills. Utility energy assistance status is particularly important in states that have minimum LMI participation or savings requirements so that providers can ensure compliance with those programs.

IV. Subscriber Excess bill credits

Solar generation and consumption rarely match on a day-to-day or billing period basis. Solar generation has a distinct but predictable generation pattern that changes throughout the year. Customer consumption patterns can also vary throughout the year based on climate, heating and cooling consumption and lifestyle factors. Therefore subscriptions sized to a customer's historical annual consumption will result in monthly credits that do not necessarily line up with a subscriber's actual electricity usage. **To maximize subscriber savings, excess credits should roll over on a subscriber's electric account in perpetuity or until the subscriber closes their account.**

C. Program Administration and Application process:
Ensure implementing agency has enough staff, typically funded by application fees

I. Commission engagement

Early and meaningful engagement of the state's energy regulatory commission is essential to program success. The regulatory commission should be enabled to convene a stakeholder process to receive feedback and make critical program design decisions during the implementation process. In order to facilitate the clean energy transition, legislators should consider the requirements needed of the regulatory commission and enable the commission to hire staff appropriately. It can also be helpful for the commission to provide a regular report back to the legislature to provide transparency and information about the program to keep legislators aware of the program's progress and inform any potential future legislation.

II. Program Administration

Community solar programs, like most other clean energy and energy efficiency programs, require a program administrator. A program administrator will be responsible for vetting and processing applications, ensuring project development and long-term operations comply with all state regulations.

Typically, programs are administered by either regulatory agency staff or third-party administrators. **Whichever approach a state chooses, the legislation should ensure that the commission or entity implementing the program is provided resources to deploy sufficient staff to facilitate smooth program administration.** Legislation can include funding in the state budget but community solar application fees commonly also contribute toward this staffing requirement.

III. Application process

A first-ready, first-served application process for selecting projects to participate in a community solar program is the most efficient use of all market participants' time and resources. Over the past decade, states have tried a number of application processes with varying levels of success - common pitfalls can include clogged application processes, projects that fail to materialize and subjective application processes that can be unclear and difficult to administer. These pitfalls create a risky program for developers and/or create a misalignment with the interconnection queue, each of which leads to a very inefficient process. An application process that prioritizes mature projects that are ready to deploy will best deliver both the generation and customer benefit goals of the program and avoid unnecessary delay in program implementation.

CCSA recommends that projects apply into the program queue only after they have cleared several hurdles that often cause projects to fail. The top three project readiness milestones are: 1) Proof of legally-binding site control (i.e. a lease or some other document showing landowner consent), 2) non-ministerial permits in hand, including any permits that require a subjective decision by a planning board or other agency, and 3) a signed Interconnection Service Agreement with the utility, which shows that the developer understands the interconnection upgrade costs that are needed and has committed to pay them.

The most efficient project application process should generally follow these steps:

1. A date certain for which the interconnection queue opens for community solar projects, if it is not already open.
2. A clearly defined application process that includes sufficient project maturity requirements and/or a sufficient security deposit to ensure the biggest feasibility milestones have been surpassed. Typically these include site control, non-ministerial permits and signed Interconnection Service Agreement.
3. A final verification process after projects are completed to verify compliance with all state regulations.

Application process: The case for first-ready, first-served

The community solar project development process is inherently risky. Projects in the development phase must successfully navigate a number of obstacles - interconnection and permitting challenges, endangered species or other screening review failures, financing and supply chain interruptions, to name a few. In certain markets only 5-10% of the total development pipeline make it through construction and energization. Generally, these projects require millions of dollars of upfront capital, many months of work, legal and financial resources and a strong network of community collaborators. In order to actually build a project, community solar development companies need a relatively certain pathway to support project development. Application processes that are infused with subjectivity do not provide a sufficient pathway for project development that would justify the amount of risk inherent in that kind of unpredictable process.

To illustrate this point, states may be tempted to add a scoring mechanism onto the application process to incentivize certain project characteristics such as siting preferences or subscriber make-up characteristics. In doing so, projects will naturally be shuffled around in the program queue, which causes inefficiencies and potential conflicts with the interconnection queue. Or, if projects only apply into the interconnection queue after they have been selected, many of those will drop out because they cannot sustain the interconnection costs associated with that project. At the least, this approach will push out any development for years, as projects sit in the interconnection queue waiting to be studied. So, after much experimentation among states, CCSA strongly recommends an efficient application process founded upon maturity requirements. If any additional project characteristics are desired, they should be incentivized through an additional value stream, which reflects the realities of the additional costs and benefits these characteristics bring to a community.

7. Supporting Elements - to ensure the process is efficient and transparent for both providers and subscribers

In the evolving landscape of renewable energy, it is crucial for legislators to take a proactive approach to achieving the state's policy objectives. The most effective approach can vary significantly based on the state's current energy market dynamics and the extent of experience that regulatory commissions and utilities have with integrating distributed energy resources. While legislative energy policy directives tend to be overarching, it is imperative to empower regulatory commissions to engage in continuous dialogue and decision-making processes. This empowerment is key to navigating the complexities of integrating community solar projects into the existing energy infrastructure, ensuring that these initiatives are not only successful but also sustainable in the long term. By considering the following topics, legislators can effectively lay the groundwork for a robust and resilient community solar market that can adapt to and overcome the unique challenges it will face. While all of these topics will not be relevant to all jurisdictions, they are still important for decision makers to consider when designing a community solar program.

A. Interconnection process modernization

As emerging technologies and evolving state priorities drive the need for cost-effective clean energy integration, interconnection reform remains a critical initiative. Yet, over the past decade, outdated regulatory frameworks, fragmented planning, and misaligned utility incentives have led to a perpetual bottleneck in the process of designing and interconnecting DER systems to the grid. This has led to a time-consuming, costly, and high-risk interconnection process.

To enable a DER future, states must recognize the transformative impact of distributed energy resources, develop a strategy to enable multi-directional power flows and establish clear interconnection rules based on solid technical foundations. State regulatory agencies play the most important role in this process, and they require sufficient resources and legislative direction for effective interconnection and grid modernization reform. Holistic reforms should include:

1. Enacting laws empowering state regulatory agencies to address DER integration challenges.
2. Equipping regulatory bodies and ratepayer advocates with technical expertise to coordinate effectively on high DER integration.
3. Adopting performance-based regulation to align utility incentives with state policy.
4. Requiring utilities to adopt proactive distribution planning frameworks that result in the grid upgrades necessary to accommodate future DER growth.
5. Reforming cost allocation methodologies to ensure equitable sharing of grid upgrade costs and requiring utilities to provide pre-application reports.
6. Investing in grid modernization technologies, such as ADMS, DERMS, VVO, and Hosting Capacity Analyses, for enhanced system efficiency.
7. Improving transparency and predictability of interconnection costs via public queues, cost standardization, and applying fair technical standards.
8. Enhancing coordination with Regional Transmission Organizations for efficient DER project development and addressing jurisdictional challenges.

For more detailed policy recommendations on interconnection, please see CCSA's white paper from February 2022, titled, "Integrating Distributed Solar and Storage: The Keystones of a Modern Grid." This report discusses the necessary transition of the United States to a clean energy sector to meet climate targets and manage the increasing energy demand from the electrification of the building and transportation sectors.

B. Consumer Rights and Education

CCSA supports clear, right-sized consumer protection measures to both educate and support market participants and ensure the integrity of a community solar program. The reason for this is simple – well-educated, willing subscribers are in the best interest of community solar providers. When subscribers understand the terms of their contract, they are less likely to terminate their contract due to confusion or misunderstanding of the contract terms. Satisfied customers reduce subscriber churn and administrative work for the community solar provider and enhance the success of the market. The state has an important role to play in ensuring market transparency and adherence to applicable consumer protection laws.

Community solar products are already subject to a number of existing Federal and state consumer protection regulations. A state's existing regulations, such as door to door or telephone sales requirements will complement the community solar program without the need to create redundant processes.

States can also play an important role in facilitating the subscriber education process beyond just the important step of requiring customer disclosures. States can provide a repository of resources, an overview of how community solar works and important questions consumers should ask before signing up for a subscription or product. Establishing the process for consumer complaints and ensuring that community solar providers have the opportunity to respond to and fix any problem that subscribers are experiencing is another key consumer protection. **CCSA recommends that Policymakers incorporate the following categories into their community solar program, relying on existing consumer rights and education frameworks and laws whenever possible.** For more information please refer to CCSA's Recommended Best Practices for Community Solar Consumer Protection, which provides more information on the following recommendations:

a. Registration Requirements for Providers

The initial vetting of community solar providers through registration requirements is a cornerstone of consumer protection. Registration requirements can ensure that only financially stable and competent providers can offer services, thereby minimizing the risk of project failures and protecting consumers from negative experiences. This process also helps maintain a high standard of quality and reliability within the market.

b. Market Transparency Mechanisms

A transparent market is a healthy market. Transparency requirements can include an up to date website with a public registry of providers including the company's marketing materials and product terms. This level of transparency encourages competition based on quality and value, driving improvements across the industry.

c. Subscription Disclosure Protocol

Clear, succinct subscription disclosure protocols are crucial for empowering consumers to make informed decisions. Clear, accurate, and accessible information about the terms of service, costs, and expected benefits helps prevent misunderstandings and disputes. This transparency is fundamental to building trust between providers and consumers, which is essential for the long-term success of community solar programs.

d. Oversight Mechanisms

Effective oversight mechanisms are necessary to ensure compliance with regulations and to protect consumers from unfair practices. Consumer protections are only as effective as their enforcement. The state regulatory agency should establish a clear and accessible dispute resolution process for customers and providers, including a consistent procedural mechanism for engagement.

e. Educational Initiatives

Educating both consumers and providers about their rights, responsibilities, and best practices is foundational to a well-functioning market. Consumer education initiatives increase awareness and understanding, helping consumers to navigate the market confidently. Provider training ensures that companies are well-informed about regulatory requirements and consumer protection standards, promoting compliance and ethical business practices.

f. The Utility's Role in Consumer Protection

The utility plays a key role in consumer protection for community solar programs, involving several key responsibilities. Utilities must apply accurate bill credits within two months of production and provide clear program information on their websites. They must offer accurate, impartial information when contacted by customers and not monopolize customer utility data, instead enabling data sharing for better decarbonization efforts. Effective communication with subscriber organizations is crucial, and can be aided by monthly meetings convened by the program regulator to ensure smooth information sharing and optimal customer service.

C. Technical Working Group

Establishing a community solar technical working group within a state is a strategic and proactive measure to ensure the long-term success and sustainability of community solar programs. Such a group plays a crucial role in addressing and navigating the myriad of challenges that inevitably arise throughout the lifecycle of these programs. In essence, it can be a forum for regulatory commission staff, utilities and interested stakeholders to work on program implementation challenges, market design innovation and other topics that could benefit from informal dialogue. A well-facilitated working group serves as a platform for continuous improvement, allowing for the integration of new technologies and approaches in a rapidly evolving energy sector. This adaptability is essential for maintaining efficiency and effectiveness in community solar initiatives. A working group also acts as a liaison between different stakeholders, including government bodies, utilities, and community solar developers. This fosters a collaborative environment where diverse perspectives and expertise converge, leading to more informed decision-making and policy development. Additionally, the group can monitor and respond to regulatory changes, market fluctuations, and technological advancements, ensuring that the community solar program remains compliant, competitive, and up-to-date. By anticipating and addressing issues proactively, the working group can minimize disruptions, reduce costs, and maintain public trust and support for the program, which is vital for its long-term viability and success.

D. Program Evaluation

The Regulatory Commission should conduct periodic evaluations of the community solar program to ensure its efficiency and the accountability of participating utilities and market participants. These evaluations should include a thorough review of program metrics such as subscriber retention rates, megawatts deployed, cost-effectiveness, and the environmental benefits achieved. Additionally, the commission should assess the fairness of access to the program, particularly for low-income households, and the effectiveness of customer outreach and education efforts. By actively engaging with stakeholders through public hearings and soliciting feedback, the commission can identify areas for improvement and ensure the program aligns with its goals of promoting renewable energy and equitable community participation. These evaluations are crucial for making informed decisions on future expansions or modifications to the program, maintaining its relevance and effectiveness in achieving its intended outcomes.

8. Summary takeaway

Recommendations for a Model Balanced Community Solar Program Design

Policy Issue	Best Practice
Program Characteristics	
Participation and Project Characteristics	**Provider Participation:** Third party ownership is the quickest, most efficient and cost-effective path to building a community solar market.
	Subscriber participation: Based on a state's interests, consideration can be given to the following types and forms of participation: 1) Residential 2) Commercial and Industrial 3) Municipal, county and other government entities 4) Portfolio approaches that meet overall targets 5) Innovative community partnerships. At a minimum, most community solar programs typically incentivize or mandate that residential and small subscribers make up a certain percentage of the program (or individual projects). Typically, that percentage is around 40 - 60% for small subscribers. Another way to achieve the same goal is to limit the percentage of the project that can be taken up by large customer subscribers. Subscribers must be located in the same utility service territory as the community solar facility.
	Program size: There are natural limits to the deployment of community solar, states should not arbitrarily limit development but rather provide a long runway, goals and market signals to target development. Comprehensive grid modeling tools should be used to determine a state's clean energy targets.
	Project size: Most states have recently settled around 5 MW for the project size limit. However, some states could accommodate higher project size limits, depending on their distribution grid and interconnection requirements. When setting system size limitations, states should consider the typical requirements for other DERs located on the distribution grid, utility grid constraints and the state's clean energy goals.
	Siting Considerations: Community solar facilities may not be sited on a parcel that has been subdivided for the purpose of exceeding the program's size limitation in aggregate across the subdivided parcels. The Regulatory Commission should be enabled to establish reasonable exceptions to this prohibition in furtherance of public policy objectives and to ensure equitable access to the program. Co-location of community solar facilities may be allowed either up to the program's size limitation or with other types of facilities (e.g., rooftop, utility-scale, DG RFP, etc) or at the regulatory agency's discretion.
Enhancements	**Low-and Moderate-Income Participation:** Many community solar programs include a carveout of 10 - 30% for LMI subscribers. These can include individuals, low-income service providers and affordable housing communities. We strongly support guaranteed savings for income-qualified households and advise regulators to accurately value community solar projects and consider additional state incentives when needed.
	Preferred Siting: Legislators or regulators can consider incentivizing locating community solar projects in a number of ways (e.g., financial incentives or earmarked additional program capacity). Preferred-siting categories can include to help direct community solar projects toward certain siting categories (e.g. Disturbed land, agrivoltaics and commercial/industrial rooftops, brownfields/ landfills, or other sites that a state deems particularly valuable for solar development). Incentives for these projects should consider the additional costs associated with these types of projects in developing the credit rate. Incentives for these projects should take into account their added value and their higher development/build costs.
	Grid Services: Legislators should consider how community solar fits into their grid modernization plans and provide additional support to enhance the impact of additional distributed energy resources on the grid.

Foundational Elements	
Consumer Access	**Subscriber Credit Rate:** Following the passage of legislation, the Commission should open a stakeholder proceeding and adopt a community solar valuation approach that considers a full range of benefits and costs for the community solar generation facility.
	Unsubscribed Energy: To allow flexibility for providers to best manage their projects, and to best maximize the benefits ultimately passed on to subscribers, CCSA recommends that subscriber organizations be allowed to make changes to their subscriber lists in real time or at least on a monthly basis. Projects should be able to bank unsubscribed bill credits for at least a year to account for subscriber turnover and unexpected changes in subscriber consumption patterns. Finally, community solar providers should be able to direct utilities on how to allocate unused credits through the allocation process.
	Renewable Energy Credits: RECs should be retained by the community solar provider, who may choose between various ways to deploy this benefit such as monetizing them to increase subscriber savings or retiring them on behalf of the subscriber.
Utility Billing Requirement	**Bill Credit Mechanism:** For new markets, states can kick start a program with dual billing but should create a pathway for the creation of net crediting on the utility bill. The regulatory commission should work with stakeholders to ensure that net crediting is available, at the community solar provider's option, within a date certain following the adoption of community solar program rules. States should maintain the option of dual billing so that early projects can still continue to operate after net crediting is implemented.
	Length of Project Term: Bill credits should be provided indefinitely until a project informs the utility that credits should stop accruing.
	Data Exchange and Subscriber List Updates: Utilities should provide an automated data exchange process to greatly reduce the opportunity for errors in data transcription. Subscriber list changes should be processed by utilities, at a minimum, on a monthly basis, and utilities should provide the following data back to providers on a monthly basis: 1. Total amount of generation from the facility; 2. Total value of the bill credits; applied in that cycle 3. Subscriber list including: a. Utility account number and the allocated credits each subscriber received; b. The previously banked credits attributed to each subscriber, and expired credits if applicable c. The customer's average monthly usage over the previous 12 months (or a similar relevant figure) 4. Participation status in the utility's energy assistance program
	Excess Bill Credits: To maximize subscriber savings, excess credits should roll over on a subscriber's electric account in perpetuity or until the subscriber closes their account.
Program Administration & Application	**Commission Engagement:** The Regulatory Agency should be directed to convene stakeholder processes through the development of the program and should report back to the legislature on a regular basis as a means of transparency.
	Program Administration: The legislation should ensure that the commission or entity implementing the program is provided resources to deploy sufficient staff to facilitate a smooth program administration.
	Application Process: The most efficient project application process is a first-ready, first ready process, which should generally follow these steps: 1. A date certain for which the interconnection queue opens for community solar projects, if it is not already open. 2. A clearly defined application process that includes sufficient project maturity requirements and/or a sufficient security deposit to ensure the biggest feasibility milestones have been surpassed. Typically these include site control, non-ministerial permits and signed Interconnection Service Agreement. 3. A final verification process after projects are completed to verify compliance with all state regulations.

Supporting Elements	
Ensuring long term success	**Interconnection Modernization:** The energy regulatory agency plays the most important role in modernizing the state's interconnection process and they must be enabled to carry out interconnection and grid modernization reform with sufficient resources and direction from the legislature.
	Consumer Rights and Education: Policymakers incorporate the following categories into their community solar program, relying on existing consumer rights and education frameworks and laws whenever possible: 1. Registration Requirements 2. Market Transparency 3. Subscription Disclosure 4. Oversight Mechanisms 5. Educational Initiatives 6. Utility Accountability
	Technical Working Group: The regulatory commission should facilitate stakeholder communication through a technical working group to address ongoing issues and support the long-term evolution of the program.
	Program Evaluation: The regulatory commission should conduct periodic evaluations of the community solar program to ensure its efficiency and the accountability of participating utilities and market participants.