

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



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Application of Pacific Gas And Electric
Company (U39E) for Review of the
Disadvantaged Communities – Green Tariff,
Community Solar Green Tariff and Green
Tariff Shared Renewables Programs.

Application 22-05-022

And Related Matters

Application 22-05-023

Application 22-05-024

**OPENING COMMENTS OF THE COALITION FOR COMMUNITY SOLAR ACCESS
ON ADMINISTRATIVE LAW JUDGE’S RULING DIRECTING RESPONSES TO
QUESTIONS REGARDING IMPLEMENTATION OF DECISION 24-05-065**

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Attachment 1: Coalition for Community Solar Access Policy Guidebook

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Pursuant to the schedule established in the Administrative Law Judge’s Ruling Directing Responses to Questions Regarding Implementation of Decision 24-05-065 (“ALJ Ruling”), filed June 5, 2024, and the *Email Ruling Granting Request For Extension of Comment Deadlines*, filed on June 13, 2024, the Coalition for Community Solar Access (“CCSA”) respectfully responds to the questions presented in the ALJ Ruling. CCSA appreciates the opportunity to supplement the record regarding the implementation of the California Public Utilities Commission’s (“Commission” or “CPUC”) new community renewable energy (“CRE”) program. CCSA’s comments respectfully make several programmatic recommendations for the implementation of Decision (“D.”) 24-05-065 and respond to the questions asked in the ALJ Ruling. Throughout this implementation phase of this proceeding, the Commission and stakeholders must navigate several unknown factors, such as the final design and requirements of the Solar For All (“SFA”) program and the amount of non-ratepayer funding allocated to the program, among others. Each of these unknowns could significantly impact the successful implementation of the CRE program. CCSA’s comments herein primarily focus on implementing the CRE program rather than advocating for the specific design of California’s SFA Program.

In summary, CCSA recommends:

- The Commission should establish a “project development incentive” that provides participating projects with an upfront grant funded from non-ratepayer funds to

partially offset a portion of the development and operational costs and the lifetime costs of providing bill credits to subscribers.

- The Commission should establish the CRE Program Tariff, consistent with CCSA’s recommendations.
 - The tariff should have a minimum 20-year term
 - Projects up to 5 MW should be eligible to participate in the CRE program.
 - Each utility should be required to apply Time-of Delivery (“TOD”) factors to resources participating in the CRE program and update its TOD factors to properly value resources that deliver electricity during high demand.
 - The tariff should fairly compensate projects for the system benefits they provide. Load-modifier status should not be a program requirement for all projects, but a CRE project that achieves load-modifier status (or that meets other potential criteria, such as location within an LRA) should be eligible for increased tariff compensation as a result of the increased benefits it provides the grid.
- The Commission should not establish a minimum bill savings for non-low-income subscribers at this time.
- The Commission should provide clarification regarding its interpretation of the instruction in Decision 24-05-065 to ensure that Assembly Bill (“AB”) 102 funding eligibility can be expanded to disadvantaged communities consistent with the Statute.

I. Introduction

California, a beacon of progressive energy policies, has established itself as a global leader in deploying renewable energy resources. Senate Bill (“SB”) 32 requires the state to reduce its overall greenhouse gas emissions 40 percent below 1990 levels by 2030. Building on this commitment, SB 100 requires that 100 percent of retail electric sales are met with zero - emission resources by 2045. SB 100 also increases the Renewables Portfolio Standard (“RPS”) to 60 percent of retail sales by December 31, 2030. The California Air Resources Board (“CARB”) established a sector-by-sector roadmap for California to achieve carbon neutrality by 2045 or earlier, outlining a technologically feasible, cost-effective, and equity-focused path to

reach the state’s climate target.¹ Broad adoption of solar paired with storage will be vital to achieving all of these goals.

However, the Commission and Legislature have recognized that not every Californian can invest in renewable energy on their properties. While California has consistently and deliberately opened pathways for energy consumers to reap the benefits of distributed energy resources (“DERs”) alongside ensuring large utility-scale renewable resources, the current pathways do not equitably distribute the benefits of clean energy. To ensure equitable access to renewable energy and its benefits, the Legislature passed SB 43 (Wolk 2014) to create a “large, sustainable market” for offsite distributed generation.² The Commission implemented SB 43 in Decision 15-01-051 “to build on the success of the California Solar Initiative by expanding access to eligible renewable energy resources to all ratepayers, including those who are unable to access the benefits of onsite generation.”³ In July 2021, the Commission opened R.21-06-017 “to prepare the electric grid for a high number of distributed energy resources.”⁴ On September 16, 2022, Governor Gavin Newsom signed AB 2316. AB 2316 added Section 769.3 to the Public Utilities Code to create an equitable community renewable energy program so that all Californians, especially those unable to host a rooftop solar system, have the opportunity to realize the benefits of distributed generation through a cost-effective program that benefits all ratepayers.

To continue preparing California’s distribution grid for the increase in distributed generation, on June 6, 2024, the Commission opened R.24-05-023 to consider “changes to existing policies, procedures, and rules regarding the safety, reliability, and resiliency of electrical distribution systems...against the complex backdrop of a changing climate, several newly emerging threats and risks, as well as emerging priorities...[t]hese emergent threats and priorities include: (1) aging equipment; (2) extreme, climate-driven weather events; (3) evolving wildfire mitigation practices; (4) increased prioritization of equity; and (5) increased

¹ See, California Air Resources Board, 2022 Scoping Plan for Achieving Carbon Neutrality (December 2022), available at: <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf>.

² See, Cal. Public Utilities Code Sec. 2831(g). All subsequent references are to the Cal. Public Utilities Code unless otherwise stated.

³ See, D.15-01-051, at p. 19 (citing Cal. Public Utilities Code Sec. 2831(b)).

⁴ R.21-06-017, Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future.

prioritization of electrification, which is a critical building block of the State’s strategic goal to decarbonize.”⁵ As California tackles these “emergent threats” it will be paramount that the state implements a long-term sustainable community renewable market.

An open, accessible, off-site shared solar program can serve all of the California policy priorities outlined above. In creating the SFA program to deliver these types of solar offerings, the U.S. Environmental Protection Agency (“EPA”) concludes, “community solar generation creates meaningful benefits for overburdened households and communities. These benefits include household savings, equitable access to clean energy, power resiliency, asset wealth building, investment in local businesses, and quality jobs.”⁶ Further, a recent study by the Lawrence Berkeley National Laboratory shows that community solar has successfully expanded access to solar, especially among multifamily building occupants, renters, and low-income households. The research finds that community solar subscribers are 6.1 times more likely to live in multifamily buildings than rooftop solar adopters, 4.4 times more likely to rent and earn 23% less annual income.⁷

Fortunately, as California strives to meet its zero-emission energy, equity, and resiliency goals, there is an unprecedented opportunity to leverage federal funding to spark the development of solar and other zero-emission resources. For example, the EPA’s \$7 billion SFA program is a once-in-a-generation opportunity to expand equitable access to rooftop and community solar by developing “**long-lasting solar programs** that enable low-income and disadvantaged communities to deploy and benefit from distributed residential solar, lowering energy costs for families, creating good-quality jobs in communities that have been left behind, advancing environmental justice and tackling climate change.”⁸

As noted in Decision 24-05-065, on April 22, 2024, the EPA awarded California \$249.8 million in grant funding to support distributed energy resources, including community solar.

⁵ See, R.24-05-023, Order Instituting Rulemaking to Update Rules for the Safety, Reliability, and Resiliency of Electrical Distribution Systems.

⁶ U.S. EPA, Office of the Greenhouse Gas Reduction Fund, Funding Opportunity Number EPA-R-HQ-SFA-23-01, at p. 5.

⁷ O’Shaughnessy, Eric, Galen L. Barbose, Sudha Kannan, Jenny Sumner, *Evaluating community solar as a measure to promote equitable clean energy access*. (June 2024), available at: <https://emp.lbl.gov/publications/evaluating-community-solar-measure>.

⁸ <https://www.epa.gov/greenhouse-gas-reduction-fund/solar-all>; <https://www.epa.gov/newsreleases/biden-harris-administration-announces-7-billion-solar-all-grants-deliver-residential>.(emphasis added)

These funds provide California with a tremendous opportunity to catalyze a long-term scalable and sustainable community solar program focusing on low- and moderate-income communities in urban and rural areas. However, if California is to maintain its leadership and meet its ambitious clean energy goals efficiently and equitably, we must develop a balanced mix of large utility-scale projects and accessible small DERs. California's clean energy future cannot rely solely on large utility-scale projects; DERs must also be integral to it.

II. Benefits of Community Solar

DERs, and community solar specifically, are a critical element of California's clean energy transition. One of the greatest capabilities of DERs is the ability to generate energy locally, closer to end users than larger, utility-scale generators. This can reduce demand for costly, large-scale utility infrastructure, such as high-voltage transmission lines.⁹ DERs also reduce line losses experienced due to the transmission of power across large distances. These benefits accrue in the location where the generation is situated as the power flows to the nearest load, and they are realized by the system as a whole regardless of the geographic relationship between generation and subscriber. However, in light of the Commission's concerns in D.24-05-065, CCSA proposes calculating a subset of these benefits coupled with possible locational requirements.

Community solar gives all customers access to the benefits of clean energy, even those who cannot 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 their home or business's physical or ownership attributes. As noted above, NREL has shown that community solar adoption is inherently more equitable than rooftop solar adoption. Further, NREL determined that policies targeting low and moderate-income participation enhance this inherent benefit.

Participants in community solar programs 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 various locations on the distribution grid, including retired or active farmland, large commercial/industrial rooftops, brownfields, and landfills. These

⁹ See, Gridworks and Gridlab, *The Role of Distributed Energy Resources in Today's Grid Transition*. (2018), available at: https://gridlab.org/wp-content/uploads/2022/10/GridLab_RoleOfDER_online.pdf.

projects provide land and property owners an additional revenue stream by utilizing less productive land or rooftop space for energy generation. These projects are also significantly smaller (under 5 MW) than utility-scale projects (100s of MWs) and therefore require less land, allowing infilling and co-locating with load.

A community solar project's financial viability significantly depends on subscriber participation. 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 providing bill credits in exchange for subscriptions 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.

CCSA recently published its newly developed, comprehensive Policy Roadmap, which includes a guidebook and inclusive solar access solutions for low-to-moderate income subscribers.¹⁰ The Policy Roadmap provides a blueprint for policymakers and industry stakeholders to implement a long-term, sustainable community solar program that will unlock private capital and bring environmental, economic, and social benefits to all Californians seeking local, clean community solar energy. The Inclusive Solar Access document provides a comprehensive approach to serving the particular needs of low and moderate-income populations in order to provide equitable access to the benefits of solar generation. CCSA is attaching the guidebook to our comments to inform the implementation of the CRE program.

III. Background

In Decision 24-05-065, the Commission acknowledged that “the record of this proceeding indicates strong support for the adoption of a new community renewable energy program from a diverse array of entities including CCSA (the proponent of the NVBT); Cal Advocates; CEJA, et al.; CUE; SBUA; SEIA; and TURN.”¹¹ As Commissioner Houck

¹⁰ CCSA's *Policy Solutions for Inclusive Solar Access* is available here: <https://communitysolaraccess.org/wp-content/uploads/Policy-Solutions-for-Inclusive-Solar-Access.pdf>.

¹¹ D.24-05-065, at p. 110.

explained, “Community Solar has the potential to be a critical tool in ensuring an equitable clean energy transition... Community solar presents an opportunity that has great potential for furthering a just and equitable energy transition. It could further reliable, resilient energy systems for all Californians. Community solar programs have the potential to provide benefits for all ratepayers, and particularly for environmental and social justice (ESJ) and Tribal communities, which advance our ESJ Action Plan 2.0 policy goals.”¹² CCSA agrees with Commissioner Houck that a viable, sustainable community solar program has great potential to meet many of California’s clean energy, equity, and resiliency goals.

Ultimately, the Commission determined it reasonable to adopt a new CRE program “by layering a customer subscription model and a non-ratepayer-funded adder onto identified standard supply-side tariffs and contract mechanisms.”¹³ In adopting the CRE program, the Commission determined that the current Renewable Market Adjusting Tariff (“ReMAT”) and Public Utility Regulatory Policies Act (“PURPA”) Standard Offer Contract (“SOC”) should serve as “foundational tariffs” for the program.¹⁴ The Commission also acknowledged that these foundational tariffs must be modified to comply with the requirements of AB 2316 and Pub. Util. Code Section 769.3.¹⁵ CCSA agrees that changes to the foundational tariffs will be necessary to ensure an equitable and sustainable CRE program that can provide subscribers with long-lasting environmental and economic benefits.

Despite its reliance on these existing tariffs as the foundation of the CRE program, Decision 24-05-065 acknowledged that many parties have concerns that “wholesale tariff compensation such as ReMAT and PURPA avoided costs may be insufficient to create and grow interest in community renewable energy program projects.”¹⁶ To address the inadequacies of these tariffs, the Commission directed “the use of \$33 million appropriated to the Commission for community energy renewable program usage and storage-backed renewable generation programs.”¹⁷ The Commission also stated its intention to use “some portion of” the \$249.8

¹² Concurrence and Dissent of Commissioner Darcie L. Houck, at p. 1.

¹³ D.24-05-065, at p. 2.

¹⁴ D.24-05-065, Conclusion of Law 15, “The Commission should adopt a community renewable energy program that uses the current PURPA compliant tariffs as a foundation.”

¹⁵ *Id.*, at p. 148.

¹⁶ *Id.*, at 118.

¹⁷ *Id.*

million in grant funding from the EPA’s SFA program “to support the community renewable energy program.”¹⁸ CCSA appreciates the Commission's commitment to supplementing the historically deficient foundational tariffs¹⁹ with non-ratepayer funding; however, the reliance on limited, one-time funding sources injects significant uncertainty into the long-term viability of the CRE program. In dissenting from the decision, Commissioner Houck shared this concern: “[t]he community solar program proposed here is dependent on third-party funding to cover the cost of bill credits for low-income subscribers. It is unclear how much third-party funding would be needed to ensure a meaningful value to low-income subscribers, or where funding would come from to cover credits to non-low-income subscribers, or how long such funding would last. The reliance on non-dedicated third-party funding puts the program at risk of failing...”²⁰

Further, as discussed below, there are conflicts between the existing terms of the foundational tariffs identified in Decision 24-05-065 and the third-party funding programs that must be addressed during program implementation. This type of short-lived, funding-dependent program design runs counter to EPA’s intent with its SFA grants. In seeking SFA funding, California responded to the EPA’s Notice of Funding Opportunity, which requires SFA funding to “create a strong foundation for a low-income solar program that is **sustainable and long-lasting and fundamentally reshapes local solar markets** to better serve low-income and disadvantaged communities.”²¹ CCSA's analysis and response to specific questions in the ALJ Ruling is guided by the same goal as SFA: to create a “sustainable and long-lasting” CRE program that “fundamentally reshapes local solar markets to better serve low-income and disadvantaged communities.” A well-designed CRE program should have a sufficiently robust compensation mechanism to outlast current identified funding sources to provide equitable access and long-lasting savings to California’s neediest ratepayers.

¹⁸ *Id.*

¹⁹ *See*, TURN Opening Comments, at pp. 3-4. “[t]he ReMAT program has only resulted in contracts with eight projects (totaling 12.4 MW) since 2017 and none since the program reopened in 2020 and the PURPA Standard Offer Contract program has only yielded a single new project (20 MW solar) in the last five years.”

²⁰ Concurrence and Dissent of Commissioner Darcie L. Houck, at p. 7.

²¹ U.S. EPA, Office of the Greenhouse Gas Reduction Fund, Funding Opportunity Number EPA-R-HQ-SFA-23-01. (emphasis added).

IV. Foundational Tariffs

In Decision 24-05-065, the Commission determined that the CRE program should contain a “Foundational Tariff.” Specifically, “[s]election of one of the existing tariffs that are compliant with the federal Public Utility Regulatory Policies Act including, but not limited to, the Renewable Market Adjusting Tariff (ReMAT) and Standard-Offer-Contract.”²² Additionally, the Commission ordered that “No later than 60 days from the adoption of this decision, Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company shall each submit a Tier 1 Advice Letter proposing any additional supply-side tariffs applicable for the community renewable energy program, as set forth in this decision, and adopted in Ordering Paragraph 1 above.”²³ CCSA is unaware of additional supply-side tariffs that could feasibly serve as the foundation for the CRE program. Therefore, CCSA limits its analysis to the PURPA SOC and ReMAT. However, CCSA has significant concerns about the adequacy of these tariffs as a basis to support a financeable, scalable program that can comply with SFA and other available federal incentives.

A. PURPA SOC

The PURPA SOC is available to any qualifying facility or small power production facility of 20 MW or less seeking to sell electricity and/or capacity to a Commission-jurisdictional utility under PURPA. The SOC allows for a 12-year maximum contract length for new facilities and has two pricing options for capacity and energy. The SOC’s short-term nature does not provide a reasonable means for a project to obtain financing. As noted above, the availability of the PURPA SOC has not resulted in any meaningful addition of DER resources to the IOUs’ portfolios. As a result of the PURPA SOC pro forma structure and requirements, the contracts undervalue projects. They do not capture project-specific or technology-specific attributes. Given the infirmities of the PURPA SOC in providing a foundation to build the CRE program, our analysis relies on the ReMAT as the foundation upon which to build the CRE program.

²² D.24-05-065, Ordering Paragraph 1(a).

²³ *Id.*, Ordering Paragraph 10.

B. ReMAT

Generally, the ReMAT was established by AB 1969²⁴ and amended by SB 380,²⁵ SB32,²⁶ and SB2 (1X).²⁷ ReMAT, defined in Public Utilities Code § 399.20, is a feed-in tariff that enables RPS-eligible facilities of three megawatts or less to sell their energy to the interconnected utility. The developer must sign a power purchase agreement with the utility. Section 399.20(d)(2) directs the Commission to “establish a methodology to determine the market price of electricity for terms corresponding to the length of contracts with an electric generation facility” based, in part, on the value of different electricity products including, but not limited to, baseload, peaking, and as-available electricity. Decision 20-10-005 established the current ReMAT compensation pricing structure for three ReMAT product categories (on-peak, off-peak, and baseload) with a time-of-delivery (“TOD”) adjustment based on the weighted average of recently executed long-term RPS contracts of 20 MW or less. Notably, only SCE’s ReMAT applies TOD factors. The most recent established pricing for the three product categories is \$52.85/MWh for As-Available Non-Peaking, \$71.94/MWh for As-Available Peaking, and \$75.96/MWh for Baseload.²⁸ This pricing is fixed at the tariffed rate for the contract term. ReMAT contracts can have 10, 15, or 20-year terms.

As discussed previously, parties have expressed concerns throughout this proceeding that the ReMAT (and PURPA SOC) compensation will be insufficient to establish an equitable and sustainable CRE program that provides subscribers with long-lasting environmental and economic benefits. CCSA shares those concerns that the *existing* ReMAT tariff will be incapable of providing a solid foundation for the CRE program.

For illustrative purposes, assuming the *existing* ReMAT tariff is the basis for project compensation, the generation resource’s revenue at current rates would equal \$71.94/MWh, or 7.194 cents/kWh.²⁹ Therefore, as directed in Decision 24-05-065, the low-income subscriber

²⁴ AB 1969 (Yee, Chapter 731, Statutes 2006).

²⁵ SB 380 (Kehoe, Chapter 544, Statutes 2008).

²⁶ SB 32 (McLeod, Chapter 328, Statutes 2009).

²⁷ SB 2 (1X) (Simitian, Chapter 1, Statutes 2011, First Extraordinary Session).

²⁸ Resolution E-5323. (June 20, 2024)

²⁹ Resolution E-5323, Adoption of 2024 updated administratively set fixed avoided-cost rates for the Renewable Market Adjusting Tariff (ReMAT) Program pursuant to Commission Decision 20-10-005. (June 20, 2024).

“revenue share” would equal 20 percent of 7.194 cents/kWh, approximately 1.4388 cents/kWh (7.194*0.2=1.4388).

However, based on CCSA’s review of EPA’s SFA program Notice of Funding Opportunity (“NOFO”), all projects receiving funding must provide 50% of the project’s output to low-income subscribers, and those subscribers must receive savings of at least “20% of the average household electricity bill in the utility territory.”³⁰ CCSA bases its understanding of the SFA requirements on the plain language of the NOFO. CCSA submits that the required savings could be interpreted as the “average” low-income customer’s bill in the service territory. Additionally, the NOFO is not specific to the data source that should serve as the basis for determining the average household savings of 20%. Therefore, stakeholders may have differing views on determining the savings required under the program.

Based on information in a recent PG&E Electric Rate Advisory, the average household utility bill in PG&E’s service territory is approximately \$184.90 for a customer consuming 500kWh .³¹ Thus, based on the plain language of the NOFO, the required household monthly bill savings under the SFA program is approximately \$36.98 or \$443.76 annually, translating to 7.39 cents/kWh, which *exceeds* the generator’s compensation under the *existing* ReMAT tariff. Therefore, the “revenue share” requirement in Decision 24-05-065 would need to increase by over 500% to meet the required low-income subscriber bill savings in the SFA program.

In designing the use of SFA funding, the CA implementing organizations may be able to work with EPA on more tailored savings rates. For example, a customer-specific 20% savings rate would prevent any customers who "over" or "under" save based on their actual usage and would align with Treasury’s guidance on the requirements of the Low-Income Communities Bonus Credit. Alternatively, applying the 20% discount to a lower average utility bill baseline and fixing that discount amount over the life of the project would allow the finite funding to reach significantly more LMI customers. This tradeoff between the number of enrolled LMI customers and the savings amount provided per customer will need to be considered during program design. Ultimately, the design of the SFA program is subject to ongoing discussions

³⁰ U.S. EPA, Office of the Greenhouse Gas Reduction Fund, Funding Opportunity Number EPA-R-HQ-SFA-23-01, at p. 12.

³¹ See, <https://www.pge.com/assets/pge/docs/account/rate-plans/electric-rate-advisory-0424.pdf>. CCSA derived the average household bill by averaging the average non-CARE residential electric bill and average CARE residential bill. ($\$226.05 + \$143.75 = 369.8/2 = \$184.90$)

between EPA and California’s SFA implementing organizations. Either approach is likely to yield greater LMI customer savings than what was originally proposed under the “revenue share” requirement in D.24-05-065.

V. Proposed Modifications to ReMAT

As discussed above, ReMAT, as it exists today, cannot provide a solid foundation for the CRE program. Fortunately, the Commission recognized that the existing wholesale tariffs identified as the foundation for the CRE program must be modified to comply with AB 2316 and Pub. Util. Code Section 769.3.³² The ALJ Ruling accordingly also acknowledges the need for additional record development to implement the new CRE program and the Green Access Program tariff modifications.³³ CCSA agrees and provides several proposed changes to the foundational ReMAT for the Commission’s consideration. CCSA’s proposed modifications strive to ensure an equitable, sustainable, cost-effective CRE program and, more broadly, a long-term, sustainable community renewable market in California that provides low and moderate-income subscribers with long-lasting environmental and economic benefits.

A. Evaluation Methodology

On January 20, 2023, CCSA witness Kennerly introduced the Cost of Renewable Energy Spreadsheet Tool (“CREST”) model in this proceeding.³⁴ CREST is a discounted cash flow analysis tool published by the National Renewable Energy Laboratory. It is available to the public without charge and is fully transparent, meaning that all formulas are visible to and traceable by all users. CREST is a valuable tool for determining the levelized cost at which a project can be successfully financed.

³² D.24-05-065, at p. 148.

³³ ALJ Ruling, at p. 1.

³⁴ See, generally Exhibit CCSA-003 (Kennerly).

To evaluate CCSA's proposed tariff modifications, CCSA engaged Sustainable Energy Advantage, LLC³⁵ to utilize the CREST to model the revenue and incentive requirements of SFA-compliant proxy projects that may participate in the CRE program.³⁶ Specifically, CCSA modeled:

- 3MW_{AC} single-axis tracking shared solar project with a four-hour duration battery equivalent to the AC-rated power of the solar PV system (i.e., 3 MW_{AC}/12 MWh battery).
- 5 MW_{AC} single-axis tracking shared solar project with a four-hour duration battery equivalent to the AC-rated power of the solar PV system (i.e., 5 MW_{AC}/20 MWh battery).

CCSA notes that a solar project does not need to include storage in order to participate in the CRE program. Additionally, CRE program participation is not limited to ground mount systems, and therefore rooftop solar with and without storage projects may also seek to participate. Given time constraints, CCSA has limited its analysis to ground-mounted solar with storage but notes that other types of installations may justify different cost structures. Table 1 presents the minimum revenues necessary to support CRE project deployment, separated by utility service territory and project type. For both project sizes, SEA made the following assumptions: \$100/kW interconnection costs, 20% household savings for LMI offtake, utility enrollment of LMI offtake, 30% ITC, 0% non-LMI discount, and 51% LMI offtake. These modeling results are provided as illustrations of how CCSA's recommendations impact the financeability of these representative project types. Should the Commission adopt CCSA's recommendations for designing the CRE tariff, additional California-specific calculations will

³⁵ SEA is a consulting advisory firm that has been a national leader on renewable energy policy analysis, market analysis and program design for over 20 years. In that time, SEA has supported the decision-making of more than two hundred (200) clients, including more than forty (40) governmental entities, through the analysis of renewable energy policy, strategy, finance, projects, and markets. SEA is known and respected widely as a group of independent analysts, a reputation earned through the firm's ability to identify and assess all stakeholder perspectives, conduct analysis that is objective and valuable to all affected and provide advice and recommendations that are in touch with market realities and dynamics.

³⁶ The CREST model has been updated to account for changes in various inputs, such as changes in battery electric energy storage and solar photovoltaic capital costs, among others. The updated CREST model remains open to the public, including the Commission, Staff, and all parties to this proceeding, for review and use. The model utilized for this analysis is available at: <https://drive.google.com/drive/folders/1UcqHG3k1UtLbYTN4f3WT0sChA7Y5CLC>.

likely need to be undertaken to determine final incentive numbers. CCSA is committed to working with parties to establish final incentive numbers based on the Commission’s final tariff design to ensure a viable community solar market.

Table 1: Proxy Project Revenue Requirements (¢/kWh)

Project	SCE	PG&E	SDG&E
3.6 MW DC, 3 MW AC, Single Axis Tracking with Storage	18.35	19.35	19.65
6.7 MW DC, 5 MW AC, Single-Axis Tracking with Storage	17.75	18.85	19.15

CCSA conducted a series of sensitivity analyses on the above base cases to demonstrate the impact of several policy alternatives that will better enable a long-term, sustainable CRE program to deploy more dispatchable, emission-free resources paired with solar, benefiting a more significant number of subscribers. These revenue requirements displayed in Table 1 remain the same throughout the sensitivity analyses.

B. ReMAT as is

As discussed above, CCSA modeled two proxy projects that could seek to participate in the CRE program. Table 2 presents the expected revenue shortfall or “funding gap” a project will face under the existing ReMAT. The analysis utilizes the existing ReMAT rate of 7.194 cents/kWh to determine the project revenues over the 20-year tariff term.³⁷ The revenue shortfall is determined by subtracting the ReMAT rate from the project revenue requirement (Table 1) to demonstrate a revenue shortfall.

Notably, the results demonstrate that for each utility service territory, the 5 MW projects have a lower revenue shortfall (¢/kWh), requiring less additional funding on a per kW basis than the 3 MW projects. This is because certain project costs are fixed, and the larger projects enable economies of scale where those costs are spread over more kWhs. However, Cal. Public Utilities Code Sec. 399.20 limits projects taking service on the ReMAT to 3 MW.³⁸

Table 2: Base Case Proxy Project Revenue Shortfall (¢/kWh)

³⁷ Currently, only SCE’s ReMAT has TOD factors. For simplicity, this analysis does not apply the TOD factors to establish the base case.

³⁸ Cal. Public Utilities Code Sec. 399.20 (b)(1).

Project	SCE	PG&E	SDG&E
3.6 MW DC, 3 MW AC, Single Axis Tracking with Storage	11.16	12.16	12.46
6.7 MW DC, 5 MW AC, Single-Axis Tracking with Storage	10.56	11.66	11.96

C. Modified ReMAT: Increase Project Size to 5 MW

As demonstrated above, 5 MW projects have a lower revenue requirement ($\text{\$/kWh}$) and a lower project revenue shortfall ($\text{\$/kWh}$). Therefore, 5 MW projects require less non-ratepayer funding on a per kW basis than 3 MW projects. If the Commission implements the CRE program by utilizing an unmodified ReMAT, projects will be limited to 3 MWs due to the statutory limitation on project capacity. However, the Commission was directed to consider implementing a community renewable program under Cal. Public Utilities Code Sec. 769.3, which has no capacity limitation on projects. The statutory capacity limit of 3 MW does not apply to the CRE program. Therefore, CCSA recommends that, at minimum, the Commission allow projects sized up to 5 MW to participate in the program. The economies of scale gained from allowing larger projects in the program will require less non-ratepayer funding on a ($\text{\$/kWh}$) basis, enabling these critical supplemental funds to support more projects and more subscribers.

D. Modified ReMAT: TOD Factors

Currently, only SCE’s ReMAT contains TOD factors, which provide essential compensation for the additional grid services storage will provide and are necessary to help offset the additional costs of storage.³⁹ As the Commission explained in Decision 20-10-005, “TOD factors are applied to the market price adjusting the energy payment according to the season and TOD periods and thereby place a higher value on energy delivered during times of peak demand and a lower value on energy delivered during times of off-peak demand.”⁴⁰ Absent

³⁹ The PG&E and SDG&E tariffs and contracts include pro forma provisions for TOD periods and payment allocations factors, but assign a TOD value of 1.0 to all.

⁴⁰ D.20-10-005, Findings of Fact 9, at p. 57; Conclusion of Law 41 (“It is reasonable for the investor-owned utilities to apply to the fixed ReMAT price the most recent Commission-approved time-of-delivery (TOD) periods and factors, rather than continuing to use outdated periods and factors.”)

a TOD factor or any time-varying element of the tariffed rate, resources participating in the CRE program are unlikely to absorb the additional costs to deploy storage.

In Decision 24-05-065, the Commission acknowledged that “voluntary inclusion of storage will likely result in more costly projects, **but the cost is balanced with the additional value to the grid that resources combined with storage will provide.**”⁴¹ However, the flat rate in PG&E’s and SDG&E’s ReMAT fails to reflect the added value that storage provides to California’s grid. Indeed, the absence of any compensation would place the costs of deploying storage on the project while allowing all the value and benefits to accrue to the utility when customers pay time-varying retail rates. Further, without a price signal, the tariff does not indicate to a developer when to discharge storage. Under a fixed rate tariff, there is no incentive to include storage in the project, charge the storage at the appropriate time, nor discharge it during peak periods when it can provide its intended value.

As the Commission acknowledges, CRE resources paired with storage provide additional value to the grid. However, the flat energy-only rate in ReMAT does not properly value the additional grid benefits gained by including storage. CCSA’s modeling demonstrates that TOD factors place higher value on resources that deliver electricity during high-demand hours, lowering the project incentive requirement necessary for these projects to participate in the CRE program. Applying TOD factors will be one potential piece that can lessen the gap between the existing ReMAT and the added costs to deploy storage. However, TOD factors alone will not be sufficient to address the existing ReMAT's inadequacies completely.

CCSA recommends that the Commission require each utility to apply TOD factors to resources participating in the CRE program and update its TOD factors to properly value resources that deliver electricity during high demand. Over time, requiring TOD factors for CRE program resources paired with storage will more accurately value their ability to meet system peak needs, which provides “additional value to the grid,” as the Commission acknowledged in Decision 24-05-065.

⁴¹ D.24-05-065, Findings of Fact 66. (emphasis added)

E. Modified ReMAT: Locational Benefits - Avoided Capacity Procurement Costs

ReMAT, as it exists today, compensates resources on an energy-only basis, which, combined with the lack of meaningful TOD factors, fails to incentivize resources to include storage. Absent a method to value the additional benefits that solar paired with storage provides to California’s grid, the storage resource is simply a cost burden on the project that offers little, if any, benefit. However, CRE projects that include storage can consistently reshape and reduce coincident peak demand such that they drive down the demand values upon which the load-serving entity’s (“LSE”) reliability requirements are set, and, as such, projects should be compensated by an amount equivalent to what the LSE would have otherwise needed to pay to meet their reliability requirements. New load-modifying solar plus storage projects can reduce capacity needs on two time horizons.

Short-term capacity compliance costs avoided:

- **System Resource Adequacy (“RA”):** Refers to each CPUC-jurisdictional LSE’s requirement to meet its year-ahead California Energy Commission (“CEC”)-adjusted forecast plus a planning reserve margin of 17% (beginning in 2024). This requirement is largely met with existing resources that are deliverable into the California Independent System Operator (“CAISO”).
- **Local RA:** Refers to each CPUC-jurisdictional LSE’s requirement to procure a certain amount of its RA need three years ahead – either individually or through a Central Procurement Entity – from “Local” resources that are sited in certain load pockets where supply is needed due to insufficient transmission to serve the entire load. This requirement is largely met with existing resources that are deliverable into the local area. All Local RA counts toward an LSE’s System RA need.

Long-term capacity needs avoided:

- **Integrated Resource Planning (“IRP”):** Refers to the CPUC’s “umbrella” planning proceeding to ensure that all LSEs collectively procure energy and capacity resources at levels sufficient to meet the state’s clean energy and climate goals at least cost while maintaining reliability. The CPUC’s recently adopted Preferred System Plan (“PSP”) found that LSEs will need to collectively procure

nearly 60 GW over the next decade to meet the combined set of IRP goals.⁴² Several IRP procurement orders have been issued to date, requiring LSEs to procure nearly 20 GW of Net Qualifying Capacity over the next several years. To ensure that LSEs continue to procure beyond those orders and bring online the scale of new resources called for in the PSP, the Commission is developing a new Reliable and Clean Power Procurement Program (“RCPPP”). RCPMP is meant to provide an ongoing signal to procure the scale of resources identified in the IRP Planning Track and reduce the need for individual IRP procurement orders.

Since the 2001 Energy Crisis, the Commission has overseen utility long-term contracting with resources. While RA contracts ensure short-term reliability, this long-term contracting has been the primary means by which new capacity is brought online to meet energy, capacity, and other (e.g., RPS compliance) needs. SB 350 established an IRP process to harmonize procurement. Under the IRP, procurement processes have continued to evolve.

New load-modifying solar plus storage projects developed under the CRE program can reduce costly procurement needs for both short -term and long -term capacity need because each program is rooted in the coincident peak demand forecasts set at both the system and individual LSE level by the California Energy Commission (“CEC”). To the extent that the CEC determines that CRE projects would lower coincident peak demand, it would subsequently reduce the RA and IRP procurement needs of affected LSEs. This is a tangible cost reduction benefit for LSEs and their customers, which should be reflected in the CRE program tariff.

Taken together, the highest value impact of bringing online new solar plus storage resources through the CRE program is reducing the need to procure the same amount of new capacity in the IRP process. IRP procurement requirements, whether through stand-alone orders or the forthcoming RCPMP, are meant to create a feedback loop between IRP planning and LSE procurement, and the most recent IRP PSP identified the need for new reliability-based procurement – incremental to the existing IRP procurement orders – starting in 2026 and

⁴² 2023 Preferred System Plan:
<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M525/K918/525918033.PDF>.

extending through 2045.⁴³ Every megawatt procured under the CRE program that meets the CEC’s standard for load modification would lower the IRP procurement need by reducing the coincident peak demand driving the PSP’s selection of new reliability-based resources. This is true even though the RCPPP is still under development by IRP staff because the stated goal of the program is to ensure that IRP planning processes systematically flow into IRP procurement needs allocated to LSEs.⁴⁴ So, while the exact mechanics of the RCPPP are still under development, the Commission has already set the desired outcome. The RCPPP will ensure steady procurement of the many gigawatts of new resources identified through IRP planning over the next several decades. Load-modifying CRE resource procurement would reduce the IRP procurement need.

These benefits would also filter down to the RA program, where coincident peak demand reductions anywhere in the CAISO lower the overall System RA need, and to the extent that projects are in Local Reliability Areas, the Local RA need. Given that the RA program largely spurs LSE procurement with existing resources, these benefits would primarily accrue by reducing competition for those resources, providing much-needed relief in a historically tight RA market.

Given the history of IRP reliability procurement to date, the marginal avoided IRP resource would most likely be utility-scale 4-hour batteries.⁴⁵ Tariff-based compensation in the CRE program up to the avoided cost of procuring an equivalent amount of capacity from utility-scale storage is a reasonable way to value the real-world cost savings that would be passed on to ratepayers due to the deployment of load-modifying solar plus storage. The Commission’s existing methodology for estimating the avoided cost of new battery procurement is the Real Economic Carrying Charge (“RECC”) approach, which uses a deferral methodology that accounts for the expected future technological progress and associated cost declines for new

⁴³ Presentation summarizing 2023 PSP SERVM and RESOLVE analysis, Slide 24: <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2023-irp-cycle-events-and-materials/2024-01-12-presentation-summarizing-updated-servm-and-resolve-analysis.pdf>.

⁴⁴ D.22-02-004, at p. 153: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M451/K412/451412947.PDF>.

⁴⁵ The vast majority of resources being procured to meet existing IRP reliability procurement orders is either Hybrid resources (solar+battery) or stand-alone batteries: <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/publicirpcomplianceport080123.pdf>.

resources. The RECC approach calculates the difference between the cost of an investment versus the cost of deferring the investment by one year and accounts for declining technology costs in calculating the deferral value to obtain the annual avoided cost of the investment.

The RECC approach is currently embedded in the CPUC's Avoided Cost Calculator. CCSA recommends adapting it to compensate solar paired with storage CRE projects that achieve load-modifier status for their value in terms of avoided reliability procurement. Requiring that projects achieve load modifier status as an eligibility criterion for receiving capacity-based compensation provides a key safeguard to ensure that CRE projects only receive compensation for avoided generation capacity value that they demonstrably deliver to ratepayers. A CRE project that achieves load-modifier status would provide a tangible reduction in the need for procurement through other programs, reducing the associated program costs borne by ratepayers. This approach does not require the CPUC to decide whether any specific CRE project is a load modifier. That authority would rest with the CEC – the agency already responsible for developing load forecasts and load modifier determinations. We simply request that the CPUC provide a mechanism for CRE projects to share in the real-world value of load modifier deployment (*i.e.*, lower RA and IRP procurement needs) if the CEC makes a positive load modifier determination.

Alternatively, avoided reliability procurement value for load-modifying projects could be based on estimated RA prices – Local RA prices if the project is in a Local Reliability Area, System RA prices if located elsewhere in the CAISO. However, as noted, the RA Program requires contracting for capacity needs in the near term, providing incentives for existing resources to stay online, and providing reliable services within CAISO markets. The RA program does not provide incentives for developing new resources in the medium-to-long term, which is why the RCPPP is necessary. Valuing load-modifying CRE projects based just on their RA program value would capture avoided RA program costs but leave on the table the higher-value avoided procurement of new resources under the RCPPP, which is best approximated using the RECC approach in the CPUC's Avoided Cost Calculator.

Further, to ensure that projects deployed in the CRE program provide maximum value through avoided capacity procurement costs, the Commission could implement a locational requirement in the CRE program that will promote the construction of projects that provide benefits to the grid and increase the likelihood projects realize the benefits of avoided reliability

procurement, in addition to providing renewable electricity to low-income customers. One method to ensure these benefits is to require that CRE projects be located in Local Reliability Areas. The Commission could also require projects to be located in the same LRA as the project's customer serves to enhance local reliability. However, this approach would mean that many Californians, including low-income subscribers, would be excluded from the program since not all ratepayers reside within an LRA. Excluding such customers would have the unintended consequence of limiting the CRE program's ability to "provide reliability, resiliency, and affordability benefits for California – specifically to some of California's most vulnerable populations."⁴⁶ Therefore, a more equitable solution may be to require CRE projects, but not their subscribers, to be located in an LRA.

To be clear, CCSA recommends that a prerequisite for a CRE project to receive compensation for avoided costs is to achieve load modifier status and meet any potential locational requirements the Commission determines necessary. This requirement establishes more guardrails to prevent cost shifts by ensuring that projects can only receive increased compensation by demonstrating the ability to deliver avoided cost savings according to Commission-approved criteria. CCSA would not support implementing locational requirements on CRE projects if projects are not compensated for the additional value they provide.

F. Modified ReMAT: CRE Transmission and Distribution Benefits

One potential option the Commission could consider to strengthen the CRE program's foundation and enable limited non-ratepayer funding to benefit more subscribers is to implement locational requirements on CRE projects, as discussed above. In Decision 24-05-065, the Commission found that absent project siting requirements beyond being in the same service territory as the subscribers, the Commission could not determine whether a project would avoid any transmission or distribution costs, much less what those avoided costs may be. Without the certainty that the community renewable projects would be located close to subscribers, the Commission was unable to confirm that there would be avoided costs of transmission and distribution.⁴⁷ CCSA maintains that these benefits accrue when electricity is generated in proximity to load, regardless of where the subscriber is located. Power flows to the nearest load

⁴⁶ Concurrence and Dissent of Commissioner Darcie L. Houck, at p. 1.

⁴⁷ D.24-05-065, Findings of Fact 14 and 15.

and will offset wear and tear on the infrastructure serving that location. This benefit will accrue to the utility system as a whole, and if it is not attributed to subscribers in their compensation mechanism, then it will accrue to the utility's bottom line. However, CCSA is cognizant of the Commission's concerns, and a siting requirement will not reduce these benefits.

During the implementation phase of this proceeding, the Commission has the option of considering locational criteria that enable projects to provide beneficial grid services that lower short-term and long-term T&D costs. Project-related cost reduction impacts include deferring transmission investments when projects reduce upstream coincident peak transmission loads, deferring ongoing distribution system investment needs by reducing peak load growth on distribution feeders and substations, and reducing transmission energy losses by reducing upstream congestion.⁴⁸ These cost reductions can be realized by all ratepayers, –not just project subscribers,–in the form of lower T&D costs in the near term by reducing peak loading on upstream substations, and deferred T&D upgrades in the medium-to-long term.

The Commission has two tools at its disposal to overcome concerns with compensating CRE projects for avoided transmission and distribution value:

- Consistent with the discussion above related to avoided procurement costs, a project's compensation for avoided T&D would be contingent on receiving load modifier status from the CEC. If the CEC determines that a project would consistently reshape and reduce load such that it would back the project's generation profile out of its baseline energy forecast, then that should provide the Commission with the assurance it seeks that a project would be serving subscribers or other ratepayers within close proximity. A project would have to be located near the load for the CEC to determine that it modifies the load.
- As explained in CCSA's comments on the Proposed Decision, CCSA could support CalAdvocates' recommendation to require that projects be built within the same CAISO LRA as the customers they serve.

If the Commission were to revisit its determinations on CRE projects and avoided Transmission and Distribution Capacity value, value CCSA could support requiring subscribing

⁴⁸ See, National Standard Practice Manual For Benefit-Cost Analysis of Distributed Energy Resources, at XI. (August 2020)

customers to reside in the same CAISO LRA as the project they subscribe to if those projects were compensated for the additional value they provide. However, this requirement could inadvertently undercut the Commission's equity objectives.

Consistent with our recommendation, a CRE project would only be eligible to be compensated for avoided costs if it achieves load modifier status and/or meets any locational requirements established by the Commission. This requirement ensures that projects can only receive increased compensation by demonstrating the ability to deliver avoided cost savings according to Commission-approved criteria. In light of the Commission's findings in D.24-05-065, CCSA presents its proposed CRE program tariff with and without T&D benefits for the Commission's consideration. Consistent with the discussion above, CCSA would not support implementing locational requirements on CRE projects absent compensation for the additional value they provide.

G. Modified ReMAT: Recommendation

As discussed above, modifications can be made to the existing ReMAT that will make significant strides toward providing a solid foundation for the CRE program. First, enabling projects up to 5 MW to participate in the CRE program will allow projects to take advantage of economies of scale and lower a project's cost on a ¢/kWh basis. Second, applying meaningful TOD factors will help incentivize the deployment and efficient dispatch of energy storage to provide increased value to the grid. Third, requiring CRE projects to be deemed a load modifier by the CEC to qualify for avoided cost compensation will further promote the development of projects that provide benefits to the grid. Compensating CRE projects paired with storage for the added value they provide to the system will provide a viable pathway for these projects with significantly increased grid value to be commercially viable while enabling limited federal and state grant funding to be spread across more projects.

To address the deficiencies in the foundational tariff, CCSA has recommended several potential modifications to demonstrate the impact of various policy outcomes on the CRE program. While CCSA presents these proposed policy modifications in isolation, the Commission can adopt any combination of these design elements to establish a stronger foundation for the CRE program. As such, CCSA recommends the Commission establish a CRE program tariff using the existing ReMAT as a foundation with CRE-specific enhancements to support program success. CCSA details our proposed CRE program in Section VII below.

VI. Non-Ratepayer Funding

In establishing the CRE program, the Commission determined that the foundational tariffs may not be sufficient to “create and grow” subscriber or developer interest.⁴⁹ Further, as The Utility Reform Network (“TURN”) noted, “[t]he ReMAT program has only resulted in contracts with eight projects (totaling 12.4 MW) since 2017, and none since the program reopened in 2020, and the PURPA Standard Offer Contract program has only yielded a single new project (20 MW solar) in the last five years.”⁵⁰

Decision 24-05-065 specifically identified funds appropriated to the Commission through AB 102 and funding awarded to the state of California through the EPA’s SFA program. Notably, there are restrictions on the use of these funds. The Commission did not identify any additional external funding sources available to sustain the CRE program, nor is CCSA aware of any such potential funding. Therefore, CCSA does not consider any possible future uncommitted funding as a viable funding source for the CRE Program. Notwithstanding, CCSA believes the Commission has additional funding sources or program modifications it can make to improve the funding landscape for projects, including allocating AB102 funding according to statute and complying with EPA’s SFA guidance.

A. AB 102 Appropriation

AB 102, Budget Act of 2023, Section 244 appropriated \$33 million to the Commission with certain requirements.⁵¹ Decision 24-05-065 directed “the use of \$33 million appropriated to the Commission for community energy renewable program usage and storage-backed renewable generation programs.”⁵² The Commission also directed that “only low-income households are eligible for the \$33 million funds appropriated to the Commission through AB 102.”⁵³ However, restricting the use of these funds to low-income households goes beyond the statutory requirements. Specifically, AB 102, Section 244 states:

⁴⁹ D.24-05-065, at p. 118.

⁵⁰ TURN Opening Comments, at pp. 3-4.

⁵¹ D.24-05-065 at p. 118, footnote 326.

⁵² *Id.*, at p.118.

⁵³ *Id.*, Finding of Fact 52, at p. 159.

“Of the funds appropriated in this item, \$33,000,000 shall be used by the Public Utilities Commission to support **disadvantaged community** renewable generation and storage-backed renewable generation programs, including, but not limited to any decision issued by the Public Utilities Commission implementing Section 769.3 of the Public Utilities Code, the Self Generation Incentive Program (SGIP), Disadvantaged Communities – Single-Family Solar Homes (DAC-SASH) program, Disadvantaged Communities – Green Tariff (DAC-GT) and Community Solar Green Tariff (CSGT) programs pursuant to Public Utilities Commission Decision 18-06-027, or renewable generation and storage-backed renewable generation projects funded by the United States Environmental Protection Agency Solar For All program. Any resultant effort should realize the benefits of **disadvantaged community** renewable generation through a cost-effective program that provides benefits to all ratepayers.”⁵⁴

Based on the statute's plain language, AB 102 intends to support renewable generation and storage-backed renewable generation programs in disadvantaged communities. Therefore, restricting funding eligibility to low-income households with no funding for community renewable generation projects in disadvantaged communities may inadvertently limit the deployment of projects in those communities. Locating CRE program projects in these communities can provide local air quality improvements, quality local jobs, and other elements that will positively impact the community and its residents, whether they participate in the program or not. Therefore, CCSA recommends that the Commission clarify its interpretation of the instruction in Decision 24-05-065 to ensure that AB 102 funding eligibility can be expanded to disadvantaged communities consistent with the Statute.

B. Solar For All

On April 22, 2024, the U.S. EPA selected California to receive \$249.8 million in grant funding from the SFA competition. As highlighted in Decision 24-05-065, EPA anticipates finalizing the award during summer 2024. The Commission signaled its intent to use “some portion of” the \$249,800. million in grant funding from the EPA’s SFA program “to support the community renewable energy program.”⁵⁵

The SFA grant funding is a tremendous opportunity to drive transformational change throughout California by spurring “the deployment of distributed solar energy to lower energy

⁵⁴ AB 102, Budget Act of 2023, Section 244. (emphasis added)

⁵⁵ D.24-05-065, at 118.

bills for millions of Americans and catalyze transformation in markets serving low-income and disadvantaged communities.⁵⁶ However, this money is not simply a blank check to support low-income solar deployment. EPA has established rigorous requirements that a SFA recipient's program must meet. If the CRE program relies on these funds, it must comply with EPA's program guidance.

First, as previously stated, EPA requires SFA funding to “create a strong **foundation** for a low-income solar program that is **sustainable and long-lasting and fundamentally reshapes local solar markets** to better serve low-income and disadvantaged communities.”⁵⁷ Thus, it will be vital for the Commission to ensure that the CRE program provides the necessary foundation for “**long-lasting solar programs** that enable low-income and disadvantaged communities to deploy and benefit from distributed residential solar, lowering energy costs for families, creating good-quality jobs in communities that have been left behind, advancing environmental justice and tackling climate change.”⁵⁸

Second, EPA requires that “[a]ll activities funded with the initial grant award must be completed within the negotiated program performance period of up to five years, meaning all program grant funds must be deployed as described in the application.”⁵⁹ Therefore, all SFA funding must be spent within five years of an entity receiving an award. Project development takes time, and project financing requires certainty. California's current regulatory landscape is unlikely to enable rapid community solar deployment in the next 12-18 months without clear and immediate Commission action on program design.

Third, EPA requires a community solar facility to be 5 MW or less and deliver at least 50% of the power generated from that facility to multiple residential customers within the same utility territory as the facility.⁶⁰ Additionally, facilities receiving SFA funding must provide subscribers with at least 20% electricity bill savings. EPA defines bill savings as “[d]elivering a

⁵⁶ U.S. EPA, Office of the Greenhouse Gas Reduction Fund, Funding Opportunity Number EPA-R-HQ-SFA-23-01, at p. 5.

⁵⁷ *Id.* (emphasis added).

⁵⁸ <https://www.epa.gov/greenhouse-gas-reduction-fund/solar-all>; <https://www.epa.gov/newsreleases/biden-harris-administration-announces-7-billion-solar-all-grants-deliver-residential>.(emphasis added)

⁵⁹ U.S. EPA, Office of the Greenhouse Gas Reduction Fund, Funding Opportunity Number EPA-R-HQ-SFA-23-01, at p. 27.

⁶⁰ *Id.*, at p. 9.

minimum of 20% household savings to all households served under the program, including households in multi-family, master-metered buildings; 20% household savings is defined as 20% of the average household electricity bill in the utility territory. Household savings can be delivered as a direct financial benefit or, for households without an individual utility bill, a direct non-financial benefit equivalent in value to the program’s household savings target in the utility territory.”⁶¹

SFA funding requires any program receiving funding to be transformational and sustainable, provide at least 50% of the output to low-income customers, and provide at least 20% electricity bill savings to low-income subscribers. As noted above, CCSA’s modeling used a conservative interpretation of this requirement. There is potential for a program that provides a customer-specific 20% savings or a savings rate based on existing low-income rates. However, these options are only speculative as benefiting from Solar For All funding the savings requirement. If a proposed or rescore the application, resulting in changes to the award. In applying for the SFA grant, California committed to meeting these requirements in its program design and deployment. Throughout the implementation phase of this proceeding, it will be essential to understand and address SFA requirements.

VII. CCSA’s Proposed CRE Program

As demonstrated throughout these comments, ReMAT, as it exists today, cannot sustain the Commission’s CRE program. CCSA has provided several potential modifications that can be made to appropriately value the benefits that CRE program projects will provide to the grid, subscribers, and all ratepayers. CCSA’s proposal would establish a ReMAT-based CRE program tariff paired with a streamlined non-ratepayer incentive structure. These combined funding structures would provide a solid foundation for the Commission to build the CRE program.

A. CRE Program Tariff

CCSA envisions a CRE program tariff with sufficient terms and length that incentivizes the deployment of community solar projects paired with energy storage by compensating these resources for the benefits they provide. In addition, building on the existing ReMAT rate with compensation for known benefits of distributed generation will allow CA to extend the reach of

⁶¹ *Id.*, at p. 12.

its SFA monies to benefit more households. These households bear the brunt of climate impacts, regressive utility rates, and overall statewide inequities. As noted above, community solar is inherently more equitable and one of the only ways for many low and moderate-income customers, particularly multifamily residents and renters, to participate in and receive the benefits of the clean energy transition. Taken together, the suggestions below will establish project compensation that begins to close the gap between the costs of a financeable project and allows participating low- and moderate-income customers to receive the benefits of program participation and the existing ReMAT rate. At a minimum, the CRE program tariff should contain the following elements:

- Have a minimum 20-year term;
- Allow participation of community renewable projects with a maximum capacity of 5 MWs with the option to include storage;
- Include a meaningful TOD factor to help incentivize the deployment and efficient utilization of storage facilities to meet peak grid needs and;
- Provide compensation to the generation resource for its ability to contribute to local reliability enhancements by avoiding generation capacity procurement costs if the resource qualifies as a load modifier and/or meets any locational requirements.

Also, CCSA provides an alternative tariff rate structure that includes a locational T&D component based on the following requirement:

- Provide compensation to the generation resources for a demonstrated ability to avoid T&D costs if the resource qualifies as a load modifier and/or meets any locational requirements.

As discussed, CCSA has developed an example CRE Program tariff structure using the CREST model based on our recommendations above. Table 3 represents one potential CRE tariff rate structure that, when combined with external, non-ratepayer funding, could lead to projects successfully obtaining financing and reaching commercial operation. This option includes compensation for demonstrated avoided capacity procurement costs. As noted above, the tariff values may need to be updated with California-specific inputs and calculations to determine the

final tariff rate. CCSA is committed to working with parties to establish final tariff values based on the Commission’s final tariff design to ensure a viable community solar market.

Table 3: Example CRE Program Tariff Rate - Energy plus Avoided Capacity (¢/kWh)

Energy (based on ReMAT w/TOD)	Locational Benefits - Avoided Capacity Procurement	Total
7.4	7.0	14.4

For comparison purposes, CCSA also developed an example CRE Program tariff rate structure that provides a compensation mechanism for demonstrated avoided T&D costs. As explained below, Table 4 shows that including compensation for demonstrated avoided T&D costs has an appreciable impact on the necessary outside funding support for projects in each service territory. Similar to the illustrative tariff in Table 3, these tariff values will require additional development to reflect California-specific data and values.

Table 4: Example CRE Program Tariff Rate - Energy plus Avoided Capacity and T&D (¢/kWh)

Energy (based on ReMAT w/TOD)	Locational Benefits - Avoided Capacity Procurement	Locational Benefits - Avoided T&D ⁶²	Total
7.4	7.0	3.9	18.3

Establishing a CRE program tariff will provide a firmer foundation for the CRE program by properly valuing the benefits these resources provide to the grid. While the CRE program tariff ultimately adopted by the Commission will likely require non-ratepayer support for project development, providing additional tariffed compensation for the added benefits provided by solar paired with storage projects will enable more efficient utilization of the once-in-a-generation federal funding available through the SFA program. This will ultimately allow the limited funding to support more projects and benefit more customers through subscriptions to these projects. If the Commission declines to adopt CCSA’s proposed enhancements to the existing ReMAT tariff, the

⁶² Avoided T&D values vary by utility. CCSA has included the value for SCE’s service territory for the purposes of the example tariff.

non-ratepayer-funded project incentive adder will need to be increased for each project, which will more quickly exhaust the funding available and limit the number of projects and subscribers.

B. Non-Ratepayer Funded Project Development Incentive

In D.24-05-065, the Commission laid out its vision of a community renewable energy program that would deliver value by combining a ratepayer-funded tariff with an external, non-ratepayer-funded project incentive adder. As discussed in more detail in response to Question 4, CCSA recommends that, consistent with ReMAT, the CRE program disburse the project incentive adder on a first-ready-first-served basis founded upon maturity requirements. CCSA further recommends that the project incentive adder partially offset the development and operational costs of projects and the lifetime costs of providing bill credits as an upfront (lump sum) grant. An upfront grant aligns with the SFA program's requirements that all funding is spent within a 5-year timeframe. As a condition of receiving these funds, the project will have a portion of its PPA revenues withheld in a balancing account and distributed to customers as bill credits throughout its 20-year contract with the LSE.

Consistent with CCSA's approach to derive an example CRE program tariff, CREST was utilized to develop an estimated project development incentive adder that will supplement the tariff revenues a project receives. Table 5 below utilizes one of CCSA's examples which includes a ReMAT-based energy component, an avoided capacity compensation mechanism, but *excludes* compensation for avoided T&D costs. The results show that a project taking service on this example CRE tariff will need to rely on non-ratepayer funds ranging from \$770/kW to \$1120/kW to obtain financing and reach commercial operation.⁶³ Table 5 also provides the estimated project development incentives that will be necessary if the Commission declines to implement a CRE tariff that appropriately values the benefits that solar plus storage resources provide. Those project development incentives range from \$2410/kW to \$2740/kW. Notably, in this scenario, the 5 MW solar plus storage projects continue to require a lower project incentive adder on a \$/kW basis.

⁶³ The estimated project development incentive values may need to be updated with California-specific inputs and calculations to determine the final tariff rate.

Table 5: Estimated Project Development Incentives, \$/kW-AC⁶⁴

3 MW AC, single axis with storage			
	SCE	PG&E	SDG&E
Base ReMAT	\$2540	\$2740	\$2640
CRE tariff (excluding T&D)	\$890	\$1120	\$1120
5 MW AC Single Axis tracking with storage			
	SCE	PG&E	SDG&E
Base ReMAT	\$2410	\$2610	\$2540
CRE tariff (excluding T&D)	\$770	\$990	\$1020

For comparison purposes, CCSA also developed an estimated project development incentive utilizing CCSA’s proposed example CRE tariff, which includes a ReMAT-based energy component, an avoided capacity compensation mechanism, and *includes* compensation for avoided T&D costs. Table 6 below demonstrates that including compensation for demonstrated avoided T&D costs has an appreciable impact on the necessary outside funding support for projects in each service territory. CCSA provides this illustrative comparison to demonstrate that the Commission could design a CRE program tariff that compensates CRE resources for the value they provide to the grid while maximizing the reach of external funds.

Table 6: Estimated Project Development Incentives, \$/kW-AC

3 MW AC, single axis with storage			
	SCE	PG&E	SDG&E

⁶⁴ The CREST model utilized in this analysis is available at: <https://drive.google.com/file/d/1h2w0y8-KyXz0gRbVmb77yOgs8qRxW7o3/view?usp=sharing>

Base ReMAT	\$2540	\$2740	\$2640
CRE tariff (including T&D)	\$390	\$780	\$360
5 MW AC Single Axis tracking with storage			
	SCE	PG&E	SDG&E
Base ReMAT	\$2410	\$2610	\$2540
CRE tariff (including T&D)	\$260	\$670	\$240

The Commission has multiple tools at its disposal to establish a CRE program tariff that provides a solid foundation for the CRE program to deliver significant benefits to the grid, subscribers, and all ratepayers. As demonstrated throughout these comments, the existing ReMAT is only able to serve as the foundation for the CRE program with significant modifications or heavy reliance on external funding to support project development and subscriber benefits. CCSA urges the Commission to establish a CRE program tariff that appropriately values the benefits that CRE projects provide and allows those benefits to accrue to subscribing customers.

VIII. CCSA Response to ALJ Ruling Questions

Question No. 1:

The new community renewable energy program is designed to deliver value through two streams of funding: (i) the stable but moderately adjusting compensation from wholesale tariffs and (ii) the external, non-ratepayer funding or “adder” that is managed through investor-owned utility (Utility) balancing accounts. How should these streams of funding be applied to provide both developer compensation and subscriber savings or revenue share (i.e., percentage split of total revenue from a project between the developer or generator account and benefiting or subscriber accounts)?

CCSA proposes that the non-ratepayer funding, a crucial resource based on the current CRE program design, be distributed amongst the participating CPUC-jurisdictional Load Serving Entities (“LSEs”) based on the ratio of each participating LSE’s load share in the state. As

discussed previously, CCSA recommends that the non-ratepayer funds partially offset the development and operational costs of projects and the costs of providing bill credits in the CRE program as an upfront \$/kW grant. This strategic use of funds will enhance program efficiency and facilitate project financing, allowing them to progress through the permitting and interconnection phases and become operational. Additionally, an upfront grant will more closely align with the SFA program’s requirement that all funding is spent within a 5-year timeframe.⁶⁵ As a condition of receiving these funds, the project will have a portion of its PPA revenues withheld in a balancing account and distributed to subscribers as a bill credit over the duration of the project’s 20-year tariff with the LSE.

Question No. 2:

Decision (D.)24-05-065 states, “The Commission finds that a minimum 20 percent revenue share for low-income subscribers is reasonable and provides protection for subscribers. However, the record of this proceeding does not contain adequate details on a specific percentage credit.” What should the revenue share for low-income subscribers be, and how should it be calculated? Comments should consider that some external funding types may have certain conditions to ensure the funding benefits low-income customers.

Decision 24-05-065 determined that “a minimum 20 percent revenue share for low-income subscribers is reasonable.”⁶⁶ For illustrative purposes, assuming the *existing* ReMAT tariff is the basis for project compensation, the generation resource’s revenue would equal \$71.94/MWh, or 7.194 cents/kWh.⁶⁷ Therefore, the low-income subscriber revenue share would equal 20 percent of 7.194 cents/kWh, approximately 1.4388 cents/kWh ($7.194 \times 0.2 = 1.4388$). This will be insufficient for subscribers who are served using SFA funding.

However, as explained above, based on CCSA’s review of EPA’s SFA program Notice of Funding Opportunity (“NOFO”), all projects receiving funding must provide 50% of the project’s output to low-income subscribers, and those subscribers must receive savings of at least “20% of

⁶⁵ U.S. EPA, Office of the Greenhouse Gas Reduction Fund, Funding Opportunity Number EPA-R-HQ-SFA-23-01, at p. 14.

⁶⁶ D.24-05-065, at p. 120. CCSA notes that the terms “revenue share” and “bill credit” appear to be used interchangeably in the Decision. For the purposes of these comments, CCSA considers the terms to be synonymous.

⁶⁷ Resolution E-5323, Adoption of 2024 updated administratively set fixed avoided-cost rates for the Renewable Market Adjusting Tariff (ReMAT) Program pursuant to Commission Decision 20-10-005. (June 20, 2024).

the average household electricity bill in the utility territory.”⁶⁸ CCSA bases its understanding of the SFA requirements on the plain language of the NOFO. CCSA submits that the required savings could be interpreted as the “average” low-income customer’s bill in the service territory. Additionally, the NOFO is not specific to the data source that should serve as the basis for determining the average household savings of 20%. Therefore, stakeholders may have differing views on determining the savings required under the program.

In designing the use of SFA funding, the CA implementing organizations may be able to work with EPA on savings rates that are more tailored. For example, a customer-specific 20% savings rate would prevent any customers who "over" or "under" save based on their actual usage and would align with Treasury's guidance on the requirements of the Low-Income Communities Bonus Credit. Alternatively, applying the 20% discount to a lower average utility bill baseline and fixing that discount amount over the life of the project would allow the finite funding to reach significantly more LMI customers. This tradeoff between the number of enrolled LMI customers and the savings amount provided per customer will need to be considered during program design. Ultimately, the design of the SFA program is subject to ongoing discussions between EPA and California’s SFA implementing organizations. Either approach is likely to yield greater LMI customer savings than what was originally proposed under the “revenue share” requirement in D.24-05-065.

Low-income subscriber bill credits should be funded by tariff/PPA revenues earned by the generator over the project's life. The respective utility can distribute subscriber credits through a flat monthly \$/kWh credit on the subscriber’s bill, reconciled annually.

Section VI above discusses the restrictions the Commission placed on AB 102 funds and the requirements EPA has placed on projects receiving SFA grants. These restrictions do not prevent developers from receiving an upfront grant to offset a portion of capital and operational expenses in exchange for the ability to fund subscriber credits from tariff/PPA revenues.

Question No. 3:

D.24-05-065 states “With respect to bill credits, the Commission finds the [Southern California Edison (SCE)] proposal to use the simplified Shared Savings Model using balancing accounts to provide a flat monetary credit on subscriber bills is reasonable...The

⁶⁸ U.S. EPA, Office of the Greenhouse Gas Reduction Fund, Funding Opportunity Number EPA-R-HQ-SFA-23-01, at p. 12.

Commission finds that a minimum 20 percent revenue share for low-income subscribers is reasonable and provides protection for subscribers. However, the record of this proceeding does not contain adequate details on a specific percentage credit. A future ruling in this proceeding will allow for additional record development. The Commission also declines to specify a minimum revenue share for -non-low-income- subscribers as they will not receive a subsidy through external funding.”⁶⁹ Propose, in detail, how a low-income and non-low-income bill credit should be applied, including billing presentment.

Given the program's structure, CCSA does not recommend the Commission establish a minimum bill savings for non-low-income subscribers. As currently constructed, the foundational tariffs make it extremely challenging to develop community solar projects, let alone pair them with the storage facilities California’s grid needs. Requiring a specific minimum bill credit for non-low-income subscribers will exacerbate these challenges and may increase the likelihood that no projects will reach commercialization. In that situation, the CRE program will fail to benefit low-income subscribers. Therefore, CCSA recommends that the Commission provide flexibility to project developers/Subscriber Organizations to customize product offerings for non-low-income subscribers. By enabling this flexibility, the Commission will empower community renewable project developers and subscriber organizations to offer customized solutions to meet the needs of these subscribers and potentially use revenues from customers or businesses who value equitable, renewable energy to support the additional savings required under SFA.

Subscriber bill credits should apply as a flat \$/kWh line item credit on the subscriber’s bill. Highlighting bill credits on a subscriber’s bill will enable the customer to clearly determine the benefit of being a community solar subscriber and easily determine the accuracy of their bill credits. The utility can facilitate subscriber credits by setting aside the subscribing customer’s (or meter’s) share of the generation resource’s compensation in a balancing account. As discussed in more detail in response to Question No. 10, participation in the CRE program should not be limited to individual customer accounts; all physical utility meters should be eligible. Tying the subscription to a meter will be particularly important for enabling cost-effective Title 24 compliance.

Question No. 4:

⁶⁹ D.24-05-065 at p. 158.

What should be the developer incentive or adder per project and how should it be calculated? Potential funding sources include the Environmental Protection Agency’s (EPA) Solar for All grant funding, General Funds allocated to the Commission, and others to be determined.

SFA requires that all funds awarded to the state of California must be spent within five years. Therefore, CCSA recommends that the non-ratepayer funds partially offset project development and operational costs and the lifetime costs of providing bill credits in the CRE program as an upfront \$/kW grant. As a condition of receiving these funds, the project will have a portion of its PPA revenues withheld in a balancing account and distributed to customers as bill credit over the duration of the project’s 20-year contract with the LSE. CCSA provides its recommended project development adder in Tables 4 and 5, above.

The project development adder represents the additional funding necessary to support project deployment and any required customer savings minus the market revenue the project may receive during commercial operation (i.e., from CCSA’s recommended CRE program tariff).⁷⁰ However, these numbers are based on a model using generally available, public inputs which may or may not be appropriate for estimating the actual costs in the California market. CCSA is committed to working with parties to establish appropriate California-specific values for any necessary inputs based on the Commission’s guidance to utilities in designing the CRE tariff. CCSA’s recommended project development adder will likely depend upon the final design of the CRE program tariff, California-specific values, and any additional compensation for grid benefits that a project may receive.

The Commission encourages but does not require energy storage to be paired with solar to be eligible for CRE program participation. The Commission noted that “voluntary inclusion of storage will likely result in more costly projects, but the cost is balanced with the additional value to the grid that resources combined with storage will provide.”⁷¹ President Reynolds expressed that she expects “that all developers will propose storage together with solar

⁷⁰ Since these will be new generation facilities, the energy production can be estimated using the National Renewable Energy Laboratory’s PVWATTS calculator tool. PVWATTS is a web-based tool that allows users to estimate the energy production of grid-connected solar energy systems anywhere throughout the world. Available from NYSERDA at: <https://www.nyserda.ny.gov/All-Programs/NY-Sun/Contractors/Value-of-Distributed-Energy-Resources/Solar-Value-Stack-Calculator>.

⁷¹ D.24-05-065, Findings of Fact 66.

systems.”⁷² Compared with President Reynolds’ stated expectations, without modifications to the existing tariff, there is a high likelihood that projects without storage are more likely to seek to participate in the program, absent tariff modifications. Therefore, it may be necessary for the Commission to establish two project incentives - one for solar-only projects and one for solar paired with storage. Additionally, the Commission should continually monitor and adjust incentives as necessary to encourage project deployment.

Should the incentives for developers be based on dollars per watt, dollars per kilowatt-hour, a lump sum, or some other scheme? Explain why.

As stated above, CCSA recommends that the project development incentive be provided to the project as an upfront (lump sum) \$/kW grant to partially offset a portion of the development and operational costs and the lifetime costs of providing bill credits to subscribers.

Partially offsetting a project’s capital and operations costs with an upfront grant will enhance program efficiency and facilitate project financing, allowing them to progress through the permitting and interconnection phases and become operational. Additionally, an upfront grant will more closely align with the SFA program’s requirement that all funding is spent within a 5-year timeframe.⁷³

What process should the Commission use for determining the incentive or adder? Should the Commission set the incentive or adder price administratively or should it require the utilities to use a method such as a reverse auction that would introduce price discovery? If you recommend a price discovery method, specify the method you propose and the justification for using that method.

CCSA strongly recommends a first-ready, first-served process founded upon project maturity requirements, which will be the most efficient and effective process for selecting projects to participate in and receive a project incentive in the CRE program. A first-ready, first-served process that prioritizes shovel-ready projects that are ready to deploy will best deliver both the program’s generation and customer benefit goals and avoid unnecessary delays in program implementation. CCSA recommends that projects be able to apply into the program

⁷² CPUC Voting Meeting, May 30, 2024. A recording of the meeting is available here: https://www.adminmonitor.com/ca/cpuc/voting_meeting/20240530/.

⁷³ U.S. EPA, Office of the Greenhouse Gas Reduction Fund, Funding Opportunity Number EPA-R-HQ-SFA-23-01, at p. 14.

queue only after they have cleared several hurdles that often cause projects to fail. These project readiness milestones are:

- Proof of legally binding site control (i.e., a lease or some other document showing landowner consent),
- Non-ministerial permits in hand, including any permits that require a subjective decision by a planning board or other agency,
- Payment of any necessary non-refundable project performance deposits and
- A signed Interconnection Agreement with the utility shows that the developer understands the necessary interconnection upgrade costs, if any, and has committed to pay them.

CCSA recommends against a reverse auction mechanism because such a mechanism may not yield projects with the benefits subscribers want or that California’s grid needs. As highlighted throughout this proceeding, deploying community renewable resources has several benefits. Community renewable resources are smaller in scale than utility-scale projects, enabling them to be interconnected to the distribution grid and sited close to load centers. Being able to site resources in this manner improves local air quality, reduces losses, reduces grid congestion, and avoids the need for long transmission lines, among other benefits. Additionally, President Reynolds has stated her expectation “that all developers will propose storage together with solar systems.”⁷⁴ However, the Commission has admitted that “voluntary inclusion of storage will likely result in more costly projects, but the cost is balanced with the additional value to the grid that resources combined with storage will provide.”⁷⁵ A reverse auction seeking to minimize the incentive a developer may need to receive for a project to be commercially viable will lead developers to seek out the lowest-cost solar-only projects on inexpensive land potentially located outside of LRAs and far from load centers and subscribers, thereby eschewing the benefits community renewables provide to subscribers and the grid.

As previously discussed, CCSA developed an estimated project development incentive adder utilizing the CREST model to determine the project development incentive necessary for

⁷⁴ CPUC Voting Meeting, May 30, 2024. A recording of the meeting is available here: https://www.adminmonitor.com/ca/cpuc/voting_meeting/20240530/.

⁷⁵ D.24-05-065, Findings of Fact 66.

projects to reach commercial operation and provide subscriber benefits in the CRE program. The CREST model is a publicly accessible tool published by the National Renewable Energy Laboratory and introduced in this proceeding in January 2023. Parties have had over a year to become familiar with the tool. Additionally, CREST has been used by Maine (on behalf of the Governor’s Energy Office), Massachusetts (on behalf of the Massachusetts Department of Energy Resources), New Jersey (on behalf of the New Jersey Board of Public Utilities), New York (on behalf of the New York State Energy Research and Development Authority), and Rhode Island (on behalf of the Rhode Island Office of Energy Resources and Distributed Generation Board).⁷⁶

Should the incentive or adder be based on a minimum dollar amount per customer or a minimum percentage of project revenue share? Should the incentive or adder increase if more low-income customers are signed up beyond the 51 percent per project minimum threshold?

The Commission should not base project incentives on a minimum dollar amount per customer or a minimum percentage of project revenue share. It should reflect the minimum compensation necessary minus the market revenue the project may receive during commercial operation.

Question No. 5:

Some CCAs who administer the Disadvantaged Communities Green Tariff (DAC-GT) have successfully negotiated lower Power Purchase Agreement contract prices with selected developers if a project receives the federal Investment Tax Credit (ITC) Low-Income Community Bonus Credit. Similarly, the Solar on Multifamily Affordable Housing program also set a precedent for aligning incentives, such as the federal ITC, with incentives provided for the installation of solar. Should the new community renewable energy program follow a similar process for leveraging the federal incentives available in the Inflation Reduction Act including the Low-Income Community Bonus Credit and other new and available tax credits?

The existing foundational tariffs have not proven commercially viable for solar projects, much less the solar paired with storage projects that California’s grid needs. As such, federal incentives will be fundamental to a project reaching commercial operation. However, as outlined above, the proposed foundational tariffs would not support the customer savings necessary to

⁷⁶ Exhibit CCSA-003 (Kennerly) at, pp. 19-20.

satisfy the federal incentive requirements. Discounting the proposed foundational tariffs to account for potential federal incentives would be counterproductive and further exacerbate the challenging economics developers face in the program described by the Commission in Decision 24-05-046. For example, assuming the *existing* ReMAT tariff is the basis for project compensation, the generation resource's revenue would equal \$71.94/MWh.⁷⁷ In nearly all scenarios, CCSA's modeling demonstrates a revenue shortfall over the project's life. Reducing the revenues a participating resource could receive would increase the revenue shortfall and the upfront grant necessary for a project to move forward. Discounting revenue because a project receives federal tax incentives simply increases the need for other state or federal incentives, resulting in the deployment of fewer projects under the program. Therefore, CCSA strongly recommends that the Commission not allow utilities to suppress tariff rates if a project succeeds in securing any federal incentives in the Inflation Reduction Act, including the Low-Income Community Bonus Credit and other new and available tax credits. Indeed, projects will likely require the support of state and federal incentives to fill the significant shortfall between project costs and the revenues under the proposed foundational tariffs to provide the proposed 20% revenue sharing, let alone the higher savings required by existing federal programs.

Question No. 6:

D.24-05-065 states “Utilities would have the role of fiscal agents and apply monetary credits to the generation, *i.e.*, benefiting, and customer, *i.e.*, subscriber, accounts. The Commission finds that it is reasonable to direct Utilities to establish a balancing account to track the subscriber revenue shares and distribute the appropriate shares through the bill credit. Further, changes to the credits based on facility performance and credit distribution can be easily updated through an annual true-up process.”⁷⁸ How should the external funding be disbursed to the projects and participating customers of Utilities and CCAs?

Subscriber bill credits should apply as a flat \$/kWh line item credit on the subscriber's monthly bill. Highlighting bill credits on a subscriber's bill will enable the customer to clearly determine the benefit of being a community solar subscriber and easily determine the accuracy of their bill credits. The utility can facilitate subscriber credits by setting aside the subscribing

⁷⁷ Resolution E-5323, Adoption of 2024 updated administratively set fixed avoided-cost rates for the Renewable Market Adjusting Tariff (ReMAT) Program pursuant to Commission Decision 20-10-005. (June 20, 2024).

⁷⁸ D.24-05-065, at p. 128.

customer's (or meter) share of the generation resource's compensation in a balancing account. Distributing subscriber credits through a flat monthly \$/kWh credit on the subscriber's bill provides an opportunity to reconcile credits annually based on the generation resource's performance.

Consistent with CCSA's previous recommendations, project development incentives should be distributed as an upfront grant to partially offset the development and operational costs of projects and the lifetime costs of providing bill credits in the CRE program as an upfront \$/kW grant. Receipt of the upfront grant shall be conditioned on the project having a portion of its PPA revenues withheld in a balancing account and distributed to customers as bill credit over the duration of the project's 20-year contract with the LSE.

Question No. 7:

What funding source should be used to pay for start-up costs and program administration and what process should be used for cost recovery? This may include costs associated with billing system updates, the customer enrollment process buildout, ongoing subscription management and development of a new solar and storage contract (if needed).

CCSA submits that it is reasonable for utilities to recover prudently incurred costs of administering the CRE program from base rates. This would be consistent with current practice for customers taking service under the NEM and NBT tariffs. The administrative costs of the existing low-income community solar programs are also funded from general rates. There is no reason to treat the CRE program differently.

Question No. 10:

Should Utility-facilitated or CCA-facilitated auto-enrollment be the only enrollment pathway for low-income customers in DAC-GT and the new community renewable energy program? What other enrollment options are available? What are the benefits or drawbacks of either approach? Comments should consider potential administrative cost, alignment with other low-income programs like the California Alternate Rates for Energy (CARE) program, compatibility with Title 24, the customer enrollment experience, ease of customer understanding billing/crediting, and consumer protections.

Utility or Community Choice Aggregator (“CCA”)-facilitated auto-enrollment should not be the only enrollment pathway for low-income customers to participate in the new community renewable energy program. Instead, the Commission’s CRE program should enable multiple pathways for subscriber participation. A hallmark of effective community renewable programs across the country is the ability of Subscriber Organizations and developers to directly engage with current and potential subscribers to explain the benefits of community renewable subscriptions. Subscriber Organizations have decades of experience with community engagement, customer education, and outreach, which will be invaluable to the program's success. Project developers and Subscriber Organizations also invest directly in communities through workforce development efforts that benefit residents beyond the project itself.

Regarding the remaining 49% of eligible subscriptions, the CRE program should provide multiple pathways to ensure a project remains fully subscribed. First, CCSA recommends that the project developer be able to partner with a Subscriber Organization to subscribe customers. These customers could be qualified low-income customers or non-low-income customers. As stated above, subscriber organizations specialize in customer education and outreach and engage directly with customers to explain subscription benefits and address any questions or concerns a customer may have. As such, a robust third-party customer subscription component will improve the overall subscriber experience while increasing customer subscriptions. Second, at its sole discretion, the project developer should be able to engage the utility or CCA for auto-enrollment of the entire project.

Title 24

CCSA witness Smithwood's opening testimony provides a detailed description of how community renewable projects provide a Title 24 compliance pathway.⁷⁹ With modifications, the CRE program can still provide a Title 24 compliance pathway. The building code requires that “the facility shall provide benefits to the participating building for at least 20 years.”⁸⁰ However, as discussed previously, the CRE program relies on infusions of limited external funds to support project deployment. Given the unknown amount and duration of the potential non-ratepayer

⁷⁹ Exhibit CCSA-007 (Smithwood), at pp. 81-89.

⁸⁰ See, CEC Building 15 Energy Efficiency Standard available at California Code of Regulations, Title 24, Part 1, available at: <https://ww2.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf>.

funding, a project may not be able to sustain bill credits and, therefore, may not provide a Title 24 compliance pathway. Further, while projects can take service under the existing foundational ReMAT tariff for a 20-year term, the tariff does not provide sufficient revenues to support bill savings for the required period. Therefore, without changes to the foundational tariff, as CCSA explained above, the CRE program may not enable a Title 24 compliance pathway.

The building code also requires that measures remain with the building. In contrast, subscriptions to community solar are typically tied to utility accounts, which change as residents move in and out of properties. To avoid any complications with the building code, CCSA recommends that a CRE subscription could be applied to a specific utility meter rather than a customer account. Enabling a utility meter to “subscribe” to a CRE program provides an easily manageable solution that could simplify Title 24 compliance by ensuring continuity of service without involving subsequent building owners as buildings change hands between owners and utility account numbers change. Assigning subscriptions to meter numbers is already practiced in the Solar on Multifamily Affordable Housing program, where tenant accounts are under the meter number rather than the customer number.

The California Building Industry Association (“CBIA”) estimates that 250 - 400 MW of community solar facilities are needed annually to serve as a compliance option for Title 24 requirements.⁸¹ Additionally, the CEC forecasts that annual Title 24 compliance needs may exceed 500 MW of installed solar annually.⁸² The only two options for Title 24 compliance are rooftop solar or community solar, and the modified CRE program suggested by CCSA would provide compliance at a much lower cost to all ratepayers. Serving a significant portion of this estimated demand with the modified CRE program would be far less costly to ratepayers than enrollment in the Net Billing Tariff (“NBT”), which credits all self-consumption at rapidly escalating retail rates.⁸³ If the CRE program is not modified, Title 24 compliance will likely be met entirely with rooftop projects under the NBT and virtual net metering (“VNEM”) tariffs. As TURN highlighted, “[u]nder NBT and VNEM, a large share of generation output would be treated as residential self-consumption and compensated at retail rates. Exports would be

⁸¹ CBIA Opening Brief, p. 7.

⁸² https://www.energy.ca.gov/sites/default/files/2023-10/Behind-the-Meter_Distributed_Generation_Forecast_Results_ada.pdf.

⁸³ TURN Reply Comments, p. 4.

compensated at the ACC values plus the 9-year adders adopted in Decision 22-12-056 (for NBT) and Decision 23-11-068 (for VNEM and NEMA).”⁸⁴ Without a viable CRE program, thousands of MWs of new rooftop solar would need to be installed under Title 24, locking in decades of compensation at rates that dwarf the costs of implementing CCSA’s recommended CRE program tariff.

Question No. 11:

If you recommend auto-enrollment, describe the criteria that should be used for i) determining which customers would be auto-enrolled in the community renewable energy program and ii) ensuring that customers aren’t enrolled in more than one program (i.e. community renewable energy program and DAC-GT). Additionally, explain which program (i.e. community renewable energy program and DAC-GT) would low-income customers be enrolled in first?

Decision 24-05-065 determines that each CRE program “project shall have a minimum of 51 percent of subscribers’ capacity ascribed to low-income customer subscribers (as defined in Pub. Util. Code Section 769.3).”⁸⁵ The decision further finds that “low-income subscribers meeting each Utility or CCA’s Arrearage Management Program enrollment criteria will be prioritized for automatic enrollment, followed by all other low-income customers (as defined in Pub. Util. Code Section 769.3) who subscribe to the tariff. These low-income customers will be automatically enrolled by their utility or participating CCA but provided an opportunity to opt out of the tariff.”⁸⁶

To the extent that a utility or CCA is auto-enrolling non-low-income subscribers, customers who rent or lease their housing should be prioritized for auto-enrollment. However, as stated earlier, CCSA does not recommend that the Commission direct utilities or CCAs to auto-enroll non-low-income customers.

⁸⁴ TURN Opening Comments, at p. 12.

⁸⁵ D.24-05-065, at p. 118.

⁸⁶ *Id.*, at p. 119.

IX. Conclusion

CCSA appreciates the opportunity to provide these comments and looks forward to continuing to work with all stakeholders to implement a long-term, sustainable community solar program in a manner that benefits the grid and all ratepayers.

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Respectfully submitted,

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Attachment 1

Coalition for Community Solar Access Policy Guidebook



COALITION FOR
COMMUNITY
SOLAR ACCESS

Policy Guidebook

Expanding Solar Access through Informed Policy Decisions



Policy Guidebook

Expanding Solar Access through Informed Policy Decisions

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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	<p>Provider Participation: Third party ownership is the quickest, most efficient and cost-effective path to building a community solar market.</p>
	<p>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.</p> <p>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.</p> <p>Subscribers must be located in the same utility service territory as the community solar facility.</p>
	<p>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.</p>
	<p>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.</p>
	<p>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.</p>
Enhancements	<p>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.</p>
	<p>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.</p>
	<p>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.</p>

Foundational Elements	
Consumer Access	<p>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.</p>
	<p>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.</p>
	<p>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.</p>
Utility Billing Requirement	<p>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.</p>
	<p>Length of Project Term: Bill credits should be provided indefinitely until a project informs the utility that credits should stop accruing.</p>
	<p>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:</p> <ol style="list-style-type: none"> 1. Total amount of generation from the facility; 2. Total value of the bill credits; applied in that cycle 3. Subscriber list including: <ol style="list-style-type: none"> 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
	<p>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.</p>
Program Administration & Application	<p>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.</p>
	<p>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.</p>
	<p>Application Process: The most efficient project application process is a first-ready, first ready process, which should generally follow these steps:</p> <ol style="list-style-type: none"> 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.

