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**Response of GRID Alternatives to the California Energy
Commission (CEC) Solar For All Program Request for Information**

Additional submitted attachment is included below.



March 14, 2025

California Energy Commission
Docket Unit, 25-SOLAR-01
1516 Ninth Street
Sacramento, CA 95814-5512

VIA DOCKET

Energy Commission Docket 25-SOLAR-01

Re: Response of GRID Alternatives to the California Energy Commission (CEC) Solar For All Program Request for Information

Dear Commissioners and Energy Commission Staff:

GRID Alternatives (GRID) is the country's leading nonprofit provider of community-powered solutions to advance economic and environmental justice through renewable energy. Since 2004, we've installed clean energy technologies for over 30,000 income-qualified households across the country. In California, GRID and its eight regional offices statewide administer and implement equity-focused distributed energy resource programs including the Disadvantaged Communities - Single-family Solar Homes (DAC-SASH) program and the Solar On Multifamily Affordable Housing (SOMAH) program. Workforce development and job training is also integral to GRID's approach.

In April of 2024, GRID was selected to receive two Solar for All program grants from the U.S. Environmental Protection Agency (EPA). GRID's Solar Access for Nationwide Affordable Housing (SANAH) program proposal has been provisionally awarded \$249,800,000 to serve Americans living in rented and owned affordable housing across the nation, and its Tribal Program's Western Indigenous Network Solar for All program proposal will be awarded \$62,450,000 to partner with Tribal Nations with a focus on five states. GRID has already begun planning and design work, in collaboration with EPA, towards the launch of these programs.

This program design experience, in combination with the organization's decades of experience administering programs that deliver clean energy access and benefits to

low-income and disadvantaged communities, informs GRID's comments in response to the following questions raised by the Commission in its Request for Information (RFI) regarding the California Energy Commission (CEC) Solar For All Program.

(1) Program Structure

1. The Solar for All grants must benefit low-income and disadvantaged communities and California Native American tribal residents located in publicly owned utility (POU) territories. Funding must be disbursed by May 2029. What are examples of existing or planned projects/programs that can utilize these funds by the deadline? If possible, provide solar nameplate capacities (kW or MW) or storage nameplate capacities (kWh or MWh).

An example of an existing project, GRID's Inland Empire office partnered with Anza Electric Cooperative and the Santa Rosa Band of Cahuilla Indians to construct California's first exclusively low-income community solar project.¹ It serves all the homes on the reservation on which it's located, supporting their energy sovereignty, providing workforce opportunities to tribal members, and, thanks to a close partnership with the utility throughout the project lifecycle, was interconnected in what we believe to be record time for a project of this size. The project received recognition from the U.S. Department of Energy, won a Sunny Award, and was featured in a panel presentation on best practices at the RE+ Community Energy Conference in 2023. Relevant media coverage included articles in Solar Builder² and Solar Power World³. While this project is complete and would not be eligible for Solar for All funds now, it represents one category of projects that could move forward with these funds in the future.

For future projects, GRID Alternatives' regional offices across the state have relevant relationships with tribal governments, and we are excited to explore opportunities to bring these resources to bear to replicate these kinds of success stories statewide. For example, the Toiyabe Indian Health Project (TIHP) is seeking support for two single-campus solar microgrid installation

¹ GRID Alternatives, "Santa Rosa Band of Cahuilla Indians Community Solar Project". September 23, 2019. Web:

<https://gridalternatives.org/regions/ie/news/santa-rosa-band-cahuilla-indians-community-solar-project>.

² Chris Crowell, Solar Builder, "GRID Alternatives awarded \$4.4 million in funding for California's first low-income community solar projects". June 11, 2019. Web:

<https://solarbuildermag.com/news/grid-alternatives-awarded-funding-for-californias-first-low-income-community-solar-projects/>.

³ Kelsey Misbrener, Solar Power World, "GRID Alternatives Inland Empire completes California's first low-income community solar project". March 30, 2021. Web:

<https://www.solarpowerworldonline.com/2021/03/grid-alternatives-inland-empire-completes-californias-first-low-income-community-solar-project/>.

projects serving our Bishop and Lone Pine clinics in partnership with the Bishop Paiute Tribe, Lone Pine Paiute-Shoshone Tribe, and GRID Alternatives Inland Empire (GRID IE).

- Bishop Clinic Project: The TIHP Bishop Clinic is a 55,000 sq. ft. facility located on Bishop Paiute tribal lands, operating under a land lease agreement with the Bishop Paiute government. This project will feature a 482kWdc photovoltaic (PV) system and a 300kW 558kWh Lithium Iron Phosphate (LFP) battery energy storage system (BESS). The PV system will be installed on lightweight steel carport structures, providing the community with 119 shaded, weather-protected parking spaces, ten of which are designated as accessible parking.
- Lone Pine Clinic Project: The Toiyabe Lone Pine Clinic is a 4,681 sq. ft. community health center providing comprehensive health and dental care for adults and children. This project includes a 44kWdc photovoltaic (PV) system and a 60kW 120kWh Lithium Iron Phosphate (LFP) battery energy storage system (BESS). The BESS will support “islanding” capabilities, allowing it to operate independently or in parallel with the utility grid. During power outages, circuits connected to the main distribution panel will be backed up based on priority.

GRID encourages the Commission to include third-party community solar ownership models in its program design. Enabling participation for third-party-owned projects, including both for-profit and nonprofit-led projects, will improve funding accessibility, enhance local control and energy choice, maximize ratepayer benefits, and ensure that a wide variety of project developers are able to contribute to the program’s success.

2. What is the range of costs that are common for residential solar (single- and multi-family), community solar, or associated energy storage systems that serve low-income and disadvantaged communities? This could be expressed as total installed cost or \$/kW installed cost, along with describing the associated solar/storage nameplate capacities. Please specify if the information provided is California-based and, if not, what region it is based on.

National studies and reports – such as the Solar Energy Industries Association’s (SEIA’s) *Solar Market Insight* report series,⁴ the National Renewable Energy Lab’s (NREL’s) solar cost benchmarking,⁵ and the

⁴ Wood Mackenzie & Solar Energy Industries Association, *Solar Market Insight Report: 2024 Year in Review*. March 11, 2025. Web: <https://seia.org/research-resources/us-solar-market-insight/>.

⁵ National Renewable Energy Lab, Solar Installed System Cost Analysis. Multiple Publications. Web: <https://www.nrel.gov/solar/market-research-analysis/solar-installed-system-cost.html>.

Lawrence Berkeley National Laboratory's annual *Tracking the Sun* report,⁶ to name a few – provide helpful cost benchmarks for market-rate solar installations and development. However, it is also essential to consider the context of additive costs due to federal program requirements and best practices for serving income-qualified, disadvantaged (DAC), and tribal communities. Such additive costs include but are not limited to:

- Higher customer acquisition costs by targeting specific populations and cultural and linguistic accessibility;
- Higher costs associated with serving populations in more rural areas and parts of the state with relatively underdeveloped solar markets, given the limited number of solar installers that currently service those areas and the need for funding to support additional travel and lodging costs where applicable;
- Additive funding for workforce development and other community-level benefits;
- Compliance costs associated with prevailing wage (Davis-Bacon) and Buy America Build America (BABA) requirements where applicable;
- A greater level of need for additional touchpoints or support services to educate target communities about solar in general and walk customers through the process; and
- Administrative costs associated with engaging program administrators, submitting required paperwork, and more.

GRID's experience as the state's only nonprofit solar installer focused exclusively on serving income-qualified Californians, including in DACs and on tribal lands, provides us with a uniquely specific window into installed costs across these market segments. Notably, our cost estimates (below) generally also include, in addition to the cost considerations outlined above, costs associated with providing key community-level benefits, such as workforce development opportunities.

For single-family installed projects, GRID's average project cost from 2024 for single-family projects is \$6.58/W DC. According to the forthcoming Q3 - Q4 2024 DAC-SASH semi-annual report, the cost per watt (\$/W CEC-AC) surged in 2024, reaching \$5.85, the highest recorded in recent years. This increase is likely due to rising material costs, supply chain disruptions, and labor constraints. System size trends continued to show that larger installations

⁶ Galen Barbose et al, Lawrence Berkeley National Laboratory. *Tracking the Sun: Pricing and Design Trends for Distributed Photovoltaic Systems in the United States*, 2024 Edition. August 2024. Web: <https://emp.lbl.gov/tracking-the-sun>.

(4.5-5 kW CEC-AC) offered the lowest cost per watt at \$4.86, reinforcing the economic benefits of larger solar systems.

For multifamily installed projects without prevailing wage requirements, GRID sees costs currently ranging from \$2.96 to \$5.33 per W in California. Note that the upper end of this range includes smaller (around 15 kW) projects as well as larger carport projects, while the lower end includes larger simple photovoltaic installs.

Finally, GRID's experience serving low-income and disadvantaged communities through community solar provides us with a unique perspective on costs for community solar projects that cater to these populations. In Colorado, GRID has seen an installed cost range of \$2,540-\$2,560 per kW for 1500 kW DC projects, including BABA and Davis-Bacon compliance costs. We would expect subscription costs to add approximately \$650 per kW. Given the comparatively higher prevailing wages in California compared to Colorado, prices for similar projects in California may come in between 20 and 30 percent higher.

3. Given the CEC's Solar for All program has \$25 million to award, what program funding allocation structure would be most effective in supporting access to solar and storage for the targeted LIDAC communities and California Native American tribes?
 - Competitive solicitation. Eligible program participants submit applications for a competitive grant funding opportunity where applications are evaluated and scored based on criteria pre-specified in the solicitation and the highest scoring applications are awarded.
 - First-come, first-served application period. Applications are selected based on passing minimum criteria and funding is awarded based on submittal order until exhausted.
 - Segmented funding. Total funding is divided into separate or segmented funding pools based on applicant type (e.g., large POUs, small POUs, California Native American tribes, or some other recommended basis). Grants in each segmented funding pool can be awarded to eligible applicants within that pool using either a competitive or first-come, first-served process as described above.

GRID recognizes that each of the aforementioned approaches comes with pros and cons. The approach we see as least appropriate for this program is a simple first-come, first-served application process. This approach tends to favor large installers, which may eat up program funding before others are

able to participate. This challenge could be addressed through caps on funding for single developers. However, first-come, first-served models typically do not deliver the deepest possible equity benefits compared to other funding allocation structures, even with developer caps in place.

Competitive solicitation can help increase equity benefits, but is generally associated with greater administrative burdens and longer processing timelines, which are important factors to consider. In addition, a one-time application window is unlikely to accommodate project timelines for all project types. For example, this model would be problematic for single-family projects.

Well-structured, segmented funding can help ensure distribution of funds and provide appropriate carve out for priority populations and could be awarded by competitive solicitation or via a first-come, first-served process, as noted.

To balance these various benefits and challenges, GRID encourages the Commission to consider a combination of approaches. For example, an initial application window, which would enable all project proposals that meet clearly defined eligibility criteria and are submitted ahead of a predetermined deadline to be considered on equal footing, would help reduce the risk of concentrating funding among a small number of large installers with more resources that enable them to move quickly. If more proposals are received than can be funded during this initial application window, a competitive process emphasizing equity characteristics could be used to identify projects that will deliver the greatest benefits for selection. This initial application window could then be followed by a rolling, first-come, first-served application period to allocate remaining program funding, providing flexibility for projects that need to operate on alternative timelines. During the implementation phase of such a rolling application period, transparency into real-time remaining funding availability and rapid application turnaround time will both be critical. Segmenting funds available during both application windows by category would help ensure a more equitable distribution of funds, and to that end, GRID encourages the Commission to consider a segment dedicated to Tribal lands.

4. The primary goals of the Solar for All program are to deliver savings to LIDAC and tribal communities and reduce greenhouse gas emissions (GHG). What should the program prioritize for disbursing awards to help achieve the primary

goals? For example, maximize solar megawatt (MW)/\$, promote resiliency, or strive for proportional funding distribution?

A focus on maximizing solar megawatts installed per dollar risks deprioritizing important equity goals of the Solar for All program. GRID encourages the Commission to instead prioritize equity in its approach, concentrating funding where it is most needed and will be most impactful. A well-structured offering prioritizing equity will best advance multiple program goals simultaneously.

In order to maximize the impact of bill savings delivered through the program, the Commission should seek to focus program investments in utility territories where electricity rates, and demand charges in particular, are highest. Projects in these areas will deliver the greatest bang for the buck in terms of reducing energy burden for Californians facing the highest energy costs.

To further ensure equitable access to program funds, the Commission should also seek to focus program investment in areas with relatively limited solar deployment compared to other parts of the state. This can be done on a geographic basis and would lead to more equitable distribution than simply allocating funds proportionally to population size alone. Additionally, the Commission should consider the potential for projects sited in DACs to alleviate peaker plant activation in those communities, making program investments in DACs especially impactful and worth prioritizing. Peaker activation typically results in hefty demand charges – often above \$30 per kW-month – which have outsized effects on DAC utility bill affordability. Peaker plants are also commonly sited in or near DACs, resulting in disproportionate negative health impacts, which could be reduced through targeted program investment at scale.

5. Should CEC's Solar for All program be required to ensure that distributed solar deployment is incremental to California Energy Code requirements so that the program avoids subsidizing the cost of meeting existing code?

GRID appreciates the context and spirit with which the Commission poses this question. While the state is interested in maximizing the impact of these resources, there may be a misconception that allowing Solar for All dollars to support compliance would mean the resources will not have an additive impact above and beyond getting properties to code. In the multifamily context, GRID encourages the state to allow program funding to support *better* implementation of Title 21.

Affordable housing is already scarce and difficult to develop given the extraordinarily thin margins in this space, so there is a need for greater state support of the sector in general. Title 21, currently existing as an unfunded mandate, exacerbates the ongoing twin housing and energy affordability crises. Title 21 compliance for multi-family projects will often mean low-to-no tenant-specific savings, since systems are generally sized to meet but not exceed what is required by code, rather than being sized large enough to maximize tenant energy bill offsets or savings. Solar sized to offset common area loads alone provide very limited benefits to tenants. So, if allowed to support Title 21 compliance, California's program would need mechanisms in place to ensure tenant economic benefits. For example, affidavits attesting that property owners may not detrimentally adjust rents or utility allowance, otherwise recapture tenant benefits, or pass along costs related to solar installation can fairly and effectively ensure that tenants benefit financially from multifamily solar projects required by Title 21 and/or funded through Solar for All. The U.S. Department of Housing and Urban Development (HUD) has also provided guidance on tenant benefits for residents of master-metered buildings with solar that the Commission can consult.⁷ The Solar on Multifamily Affordable Housing (SOMAH) program has some such mechanisms in place and could serve as a useful model.

6. What level of match funding should an applicant be expected to contribute towards the total project cost (e.g. 0%, 10%, 20%, 30%, or higher), with the remaining portion funded by CEC's Solar for All program? - Respond/reframe based on question we'd prefer to respond to (no match requirement except for CS (ITC should be taken into consideration, but not first)

GRIDs' suggestions for matching fund requirements vary by market segment:

For single-family solar, GRID recommends no match requirement. This aligns with the approach we plan to take through our Solar for All funded nationwide SANAH program. While providing free solar with no funding match requirement, our SANAH program will and CEC's Solar for All program could also still take the opportunity to stack grant funding with the federal Investment Tax Credit (ITC) into account. It is important to note that not all funding recipients will be able to monetize any or all of the ITC though, given expected low tax appetites. For this reason, enabling third-party ownership models for single-family solar in

⁷ Office of Housing, U.S. Department of Housing and Urban Development. Memorandum re: Treatment of Solar Benefits for Residents in Master-metered Buildings. May 11, 2023. Web: <https://www.novoco.com/public-media/documents/hud-memo-solar-credits-mm-buildings-05112023.pdf>.

addition to community solar will be an important tool for maximizing the program's ability to leverage federal incentive dollars.

GRID's extensive experience providing no-cost single-family solar through state incentive programs has demonstrated that, simply put, it is already hard enough to reach relevant income-qualified customers with these funds when the solar is provided at no cost. Even with offering completely free solar, GRID's conversion rate is just 4%. Requiring matching funding for these projects would make it even more challenging to reach the program goals and would be less effective in filling access gaps left by California's existing solar incentive programs (e.g., DAC-SASH and SGIP). No matching fund requirements would also sidestep potential consumer protection risks. The DAC-SASH program is cited as a model in California's Consumer Protection Guide for this very reason.⁸

For multifamily solar, some amount of matching fund requirement could be successful. GRID has seen this model play out successfully in the SOMAH program, where the system cost to the property owner does not have to be zero, so long as the system supports lower common area operating costs and provides net financial benefit to the owner. The level of matching fund requirement would need to be set such that net owner savings would be assured to effectively attract participation.

Finally, requiring some amount of matching funds could make sense for community solar projects. As an illustrative example, GRID's SANAH plans include requiring an 80% match to 20% sub-grant funds for construction and a 30% match to 70% sub-grant funds for subscriptions.

7. Which applicant types should the program work with to maximize deployment/benefits at the lowest cost (including program administration, compliance, etc.)? For example, applicant types could be POUs and tribes, project developers, third-party program administrators, or a mix.

Similar to the response provided to question four, GRID urges against optimizing for cost alone. The Commission should instead design this program to maximize savings and greenhouse gas reduction benefits, while also supporting equitable access. At times, these priorities may conflict with one another as well as with the goal of minimizing costs. Depending on which priority takes precedence, the

⁸ California Public Utilities Commission, *California Solar Consumer Protection Guide*. March 2022. Web: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/solar-guide/solarguid e22_011922.pdf.

answers to this question can vary significantly. For example, working with solar project installers and developers would likely achieve the lowest overall cost. However, that does not mean that only these applicant types should have access to the program, nor does it mean these applicant types would deliver the greatest benefits. Further, these applicant types are least likely to need technical assistance.

For these reasons, GRID recommends flexibility in terms of program access for various applicant types while targeting technical assistance resources towards non-installer and non-developer applicants (e.g., Tribes and POU's). The SOMAH program, for example, allows both solar installers and housing owners to apply directly. A similarly inclusive approach would make sense for the Solar for All program.

8. As initially defined by the US EPA, LIDAC eligibility will be based on census tract-level data, properties providing affordable housing, and geographically dispersed low-income households that meet area median income (AMI) or Federal Poverty Level thresholds. In cases where household income is used to meet eligibility, what documentation should be required? What are best practices for verifying eligibility for low-income utility programs?

Some utility programs rely on self-attestation of income eligibility, with periodic spot-checks or audits. This approach is least burdensome for households and creates the lowest barrier to access, but may not be adequate in this case under Environmental Protection Agency (EPA) program rules.

EPA also provided for categorical eligibility, which supports program efficiency and limits barriers to participation while still providing eligibility assurance and documentation. This model is encouraged by the CEC's SB 350 Barriers Study and Final Report.⁹ The Commission may wish to consider whether participation in other state-based income-qualified programs within a reasonable time frame is functionally equivalent to demonstrating income eligibility and, therefore, an acceptable alternative for this program.

⁹ California Energy Commission, *Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities*. December 2016. Available for download: <https://www.energy.ca.gov/rules-and-regulations/energy-suppliers-reporting/clean-energy-and-pollution-reduction-act-sb-350-3>.

Finally, in cases that are not appropriate for categorical eligibility and income documentation is required, GRID encourages the Commission to allow for maximum flexibility and accept a wide variety of supporting documentation as proof of eligibility, including but not limited to paycheck stubs and tax returns. The Commission could also consider providing an application program interface (API) with the Internal Revenue Service (IRS), allowing the state to access income data directly, for example, via Veritax.

9. What are best practices for conducting outreach to LIDAC communities and/or California Native American tribes? How can Community-Based Organizations (CBOs) best assist with outreach?

GRID encourages the Commission to consider contracting with a third-party administrator to manage outreach engagements. This both supports and taps into existing trusting relationships, while agencies often struggle to work with LIDAC communities, Tribes, and CBOs directly. Additional best practices include:

- Robust outreach to CBOs to ensure access and funding distribution across utility territories, demographics, and other variables;
- Sufficient CBO compensation;
- Complementary funding to support CBO capacity building, which may be necessary to enable participation in some cases;
- Non-onerous participation, keeping in mind that CBOs are often not well-resourced to jump through bureaucratic hoops and high complexity may prohibit their participation; and
- Easy reporting processes, minimizing compliance burdens.

10. Are there challenges or needs that are particular to LIDAC communities or California Native American tribes that CEC should consider to inform program design and structure?

Please see the best practices listed in the answer provided to question nine (above). Additional strategies to simplify the procurement process may be especially important for LIDAC communities and Tribes. The general applicability public interest waiver of BABA requirements for tribes issued by joint federal agencies is a prime example.¹⁰

¹⁰ Department of the Interior et al, “General Applicability Public Interest Waiver to Indian Tribes”. January 10, 2025. Web: www.doi.gov/sites/default/files/documents/2025-01/doi-multi-agency-tribal-public-interest-waiver.pdf.

11. What types of technical assistance would help support successful projects benefiting rural, tribal, and other communities that experience access barriers?

GRID anticipates a wide range of technical assistance (TA) needs to support projects benefiting rural, tribal, and other communities with unique barriers to access. The Commission should seek to provide TA with the following areas: Pre-feasibility, pre-design, prospective financial reports (including costs, program incentives or financial assistance, potential tax credit and bonus credit utilization, and connections to bridge or gap funding for larger projects), BABA and Davis-Bacon compliance process support and resources, bidding portal use, approved installer or vendor lists, and a system to match installers with projects or otherwise facilitating contractor selection.

GRID also advises the Commission to consider pre-TA needs. TA assumes the capacity and resources to utilize that assistance, which is often a bad assumption when it comes to LIDAC, Tribal, and rural communities. This is, unfortunately, an often overlooked aspect of program design, which leaves behind communities or participants needing more intensive support. Put another way, TA represents a “come to us and we’ll help you” kind of offering, whereas these communities may need support before they are even capable of coming to you to leverage your TA. Targeted educational resources, planning grants, participant assistance, and other similar supportive offerings can enable more priority communities to leverage TA, and should also be considered during program design.

12. Certain projects under the Solar for All award will be subject to “Build America, Buy America” domestic sourcing requirements for iron and steel, manufactured products, and construction materials. What, if any, barriers may this cause? How can those barriers be mitigated and addressed?

GRID appreciates the spirit of both the BABA requirements for Solar for All projects, for which there is currently a limited general waiver for photovoltaic (PV) modules, and the domestic content minimums required by relevant tax credit programs, such as the low-income bonus credit that can be applied to community solar projects. These requirements do, however, present certain barriers to different types of projects.

Single-family projects are and should remain exempt from BABA compliance. Multifamily and community solar projects, however, are not categorically exempt. The primary challenge for these projects is limited, or sometimes entirely lacking, access to compliant supplies. To mitigate this challenge, the Commission might

consider a combination of project-specific waivers and timeline adjustments to account for related delays.

Beyond the previously mentioned BABA waiver for Tribes, the only currently available BABA waiver is for PV modules, which is set to expire in 2026. While GRID hopes to see increased availability of BABA compliant panels after that expiration date, uncertainty remains. Based on GRID's experience to date, we expect BABA-compliant trackers, inverters, and transformers to be increasingly available throughout 2025 and beyond but anticipate supply bottlenecks that may make procuring these components difficult. The availability of compliant batteries and certain balance-of-system components is also uncertain. GRID anticipates a need for waivers for projects containing each of these components.

As procurement delays and waiver applicants can add significant time to project completion, larger projects require longer development pipelines. With this in mind, GRID suggests adjusted sub-grant schedule requirements. GRID has been seeing delays of 6-10 months from order placement to delivery for procurement of community-scale BABA-compliance equipment, and the timeline may increase further when transformers are required. This timeframe could also increase as developers rush to place orders among a limited number of BABA-compliant suppliers. Sub-grant schedule requirements should adjust for these factors and provide adequate time and/or no-penalty extensions for developers to work through bottlenecks.

Additional mitigation strategies that the state may consider include leveraging other dollars to support in-state solar component manufacturing, if available, and helping applicants understand compliance requirements and calculations and listing compliant products through its solar equipment list team.

13. Is there other information or topics the CEC should consider regarding program design and structure that haven't been covered in the previous questions?

(2) Benefits

14. As a condition of receiving funding from CEC's Solar for All program, awardees must deliver a minimum 20% average household electricity bill savings to all LIDAC households served under the program, including households in master-metered, multi-family buildings.
- a. What are effective mechanisms to apply bill savings that do not affect resident income levels and ensure residents' eligibility for other low-income programs is unaffected?

For individually metered sites, non-monetary solar credits (treated as discounts or coupons rather than income) – as described in the HUD memo re. Treatment of Community Solar Credits on Tenant Utility Bills¹¹ – would be most appropriate.

For master-metered buildings, the Community Benefits Agreement construct would be appropriate, and the HUD memo re. Treatment of Solar Benefits for Residents in Master-metered Buildings describes multiple types of benefits that could be offered to residents as a result of receiving utility savings from participating in community solar or investing in rooftop solar, without impacting household income or program eligibility.¹²

- b. Should the bill savings calculation be based on an average monthly or annual percentage of a customer's electrical usage?

The simplest approach to this calculation would be a percentage savings versus the applicable utility rate (in \$/kWh). The alternative of applying savings as a percentage of an individual's average bill, either monthly or annual, will require significant administrative work for the individual to submit their bill history and then the sub-grantee to calculate savings for each individual beneficiary.

- c. What are best practices to ensure households that do not receive individual electricity bills (e.g. master-metered, multi-family buildings) receive the savings?

See paragraph two of the response provided to part a. of this question, including the HUD memo cited.

- d. How should bill savings be verified? By whom and when?

PA audits of select utility bills to verify savings may be a useful strategy, though GRID remains open to suggestions from other parties. Verification of savings compared to previous bills would be highly labor

¹¹ Office of Housing, U.S. Department of Housing and Urban Development. Memorandum re: Treatment of Community Solar Credits on Tenant Utility Bills. July 15, 2022. Web:

https://www.hud.gov/sites/dfiles/Housing/documents/MF_Memo_Community_Solar_Credits_signed.pdf.

¹² Office of Housing, U.S. Department of Housing and Urban Development. Memorandum re: Treatment of Solar Benefits for Residents in Master-metered Buildings. May 11, 2023. Web:

<https://www.novoco.com/public-media/documents/hud-memo-solar-credits-mm-buildings-05112023.pdf>.

intensive, but verification of savings on a \$/kWh basis would be much easier.

15. As initially defined by US EPA, community solar funded by the CEC Solar for All program must meet the following definition: 1) nameplate capacity of 5 MWAC or less, 2) deliver at least 50% of the electricity generated from the system to multiple residential customers within the same utility territory as the facility, and 3) verify that at least 50% of the benefits and/or credits of the power generated from a community solar system be delivered to residential customers in the same service territory.

- a. How do existing POU community solar projects verify delivery of benefits and/or credits to residential customers?

This is pretty standard across the community solar industry. Since the utility is responsible for applying the bill credits through the utility billing system, subscriber location within the service territory is ensured. The subscription management entity typically maintains records of subscriber's utility account numbers along with any supporting documentation for program eligibility.

- b. What verification processes for benefits and/or credits should be used for the CEC Solar for All program?

Community solar bill savings could be verified through annual reporting by POUs, based on data from on-bill savings enabled through consolidated billing. Additionally, the Commission could consider a post-program audit of subscribers' utility bills to ensure that credits are being applied correctly.

16. What process should be used to ensure community solar bill discounts are linked with the customer even if the customer moves to a new location within the same service territory?

Most utility billing systems have some form of Customer ID in addition to a Location ID and a Meter ID. By tying the bill credit to the Customer ID, the credits should continue to process normally even if the Location ID or Meter ID is changed.

(3) *Siting, Permitting, and Interconnection*

17. What tools, processes, or best practices should CEC require/encourage to streamline permitting and interconnection of solar and storage, and community solar projects? Are there technical assistance tools or examples of existing programs that can be leveraged?

Multiple existing resources are available to support streamlining permitting and interconnection, and encouraging participating communities to take advantage of these resources will enhance program efficiency and impact.

Key resources include:

- SolSmart - The SolSmart program, funded by the U.S. Department of Energy (DOE) Solar Energy Technologies Office, provides free TA to local governments to help clear solar barriers in their purview. This includes permitting, inspection, planning and zoning, and more. The Commission should consider referring local governments to SolSmart TA as a part of Solar for All program activities.
- SolarAPP+ - SolarAPP+ is another federally funded resource that has since matured into a standalone organization supporting streamlined or instant online automated solar permitting for smaller systems that meet specific parameters. California state law requires that most cities and counties implement SolarAPP+ or a similar online, automated permitting system for residential solar projects, but the Commission might still consider referring local governments that have not yet implemented such a system to SolarAPP+ as a part of Solar for All program activities.

As a part of CEC's Integrated Energy Policy Report (IEPR) or related processes, it might also consider the interconnection adjacent question of how the state can address longstanding hosting capacity barriers that have equity implications for which neighborhoods and zip codes can deploy distributed solar and pursue electrification and which cannot. Closing feeders to new solar is often done based on back-of-the-envelope calculations that can ignore the mitigating role of energy storage in making a feeder suitable to additional solar capacity, and this practice can amplify existing grid disparities.

18. Should CEC's Solar for All program require energy storage with solar development? What are the potential impacts of energy storage on solar project development in terms of cost, timeline, permitting, or other factors?

In addressing this question, the Commission can consider what share of the program installed solar capacity target necessitates storage attachment and where that storage would be most beneficial.

To prioritize storage according to resilience benefits, if limited funds are unable to support storage attachment for all projects by providing financial assistance at scale for storage, the Commission should consider prioritizing storage for:

- Medical baseline customers or others with an elevated need for stable electricity supply;
- Communities where distribution system reliability metrics, such as System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) scores, are worst; and
- Where POUs are implementing Public Safety Power ShutOff (PSPS)-like outages to mitigate fire risk, or where ratepayers are otherwise frequently impacted by weather events.

To prioritize storage according to economic benefits, the Commission should consider where storage may be the highest priority as it relates to net energy metering (NEM) offerings by POUs to meet or exceed savings floor targets.

Finally, to prioritize storage according to grid benefits, consider that there might be elevated needs for resilience or grid support in order to mitigate exacerbating the so-called duck curve in certain areas. Some utility territories or other geographies may need storage more than others for grid support reasons.

19. How can a community solar development be structured to support resiliency by delivering energy to benefitting residents during grid outages?

When islanding a project is permitted, the solar generation can continue to provide power to residents even when the grid is down. While many utilities prohibit islanding due to concerns about lineman safety, this is less of a concern for behind-the-meter (i.e., single-family and multifamily) solar. Islanding for these projects can be enabled using an automatic transfer switch.

For front-of-the-meter solar, including community solar, islanding would need to take place at a larger scale using a microgrid structure. While microgrids

can offer substantial resilience benefits, they are also more costly than traditional community solar projects and require close utility collaboration.

(4) Consumer Protection

20. What existing consumer protections are currently provided by residential solar, community solar, and energy storage programs?

The following general consumer protections and resources are common practice and relevant for all market segments and project types:

- Distributing the California Public Utilities Commission's (CPUC's) California Solar Consumer Protection Guide, which the CPUC encourages solar installers to provide to all potential customers upon first contact;¹³
- Requiring that contracts include permanence, performance, warranty, operations and maintenance, monitoring, and other provisions ensuring the system remains installed and in good working condition for its entire useful life;
- Vetting of installers and developers, including requiring a valid contractors license. The Commission could also consider instituting a Better Business Bureau (BBB) rating minimum as well as a safety rating requirement (such as an Experience Modification Rating or Xmod score limit) for onsite work; and
- Requiring adherence to a code of conduct or code of ethics, which generally includes a prohibition against misleading marketing similar to that included in Section 391 of the California Public Utilities Code, as well as other basic consumer protections.

In addition, various consumer protection measures modeled after specific programs may be useful for some, but not all, project types. For example, California's DAC-SASH and SOMAH programs both make solar free for the recipient household – the homeowner in the case of DAC-SASH and the tenant in the case of SOMAH. Providing solar at no cost is an easy and comprehensive way to circumvent many possible consumer protection concerns. The Commission may consider these programs as models for consumer protection in the single- and multi-family sectors, respectively.

¹³ California Public Utilities Commission, *California Solar Consumer Protection Guide*. March 2022. Web: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/solar-guide/solarguide22_011922.pdf.

Finally, the Commission should consider tools for enforcement to ensure compliance with all consumer protection program requirements. These tools could include incentive clawback measures, system removal, and/or means for reporting and submitting noncompliance complaints to CEC as well as to the Contractors State License Board (CSLB) and the Occupational Safety and Health Administration (OSHA) where relevant.

21. How should the CEC Solar for All program incorporate consumer protection requirements? Are there consumer protection considerations particular to different housing types such as multi-family or single-family rental properties, or for LIDAC communities, that CEC should consider?

Please see the response provided to the previous question.

(5) Quality Jobs

Job training is a cornerstone of GRID's work. As the nation's largest nonprofit solar training provider, we successfully placed 241 training participants into full-time work in 2024. GRID is also the Program Administrator for the Solar on Multifamily Affordable Housing (SOMAH) Program, which has provided 1,212 paid job training opportunities on 706 projects since its inception.¹⁴ As such, many of our responses to the questions in this section will draw from our experience as both a training provider and an administrator of SOMAH.

22. How can awardees support high-quality jobs for solar and energy storage projects that promote prevailing wage and training opportunities such as apprenticeship programs? What other workforce development, education, and training opportunities are available that should be required/encouraged by CEC's Solar for All program?

It is important for awardees to have the option to utilize a variety of training programs, including but not limited to registered apprenticeships, nonprofit-led training programs, pre-apprenticeship programs, training programs led by community colleges and vocational training schools, etc. Doing so will create a holistic talent pool that develops a broader range of trainees representing various levels of experience. Including trainees at intermediate and entry-level phases of their career and providing them with new skills sets will put them on a pathway to high-quality jobs, apprenticeship programs, and other opportunities that allow for upward mobility. The solar industry is growing rapidly, with

¹⁴ CalSOMAH, *Program Impacts*. Web: <https://calsomah.org/program-impacts>.

installation and project development making up more than 60% of solar industry jobs in 2023.¹⁵ However, the industry continues to face a shortage of skilled workers, and comprehensive workforce development strategies should be adopted to meet the increasing demand for solar energy.¹⁶

GRID has over a decade of experience in offering solar training in the most underserved communities. Our Installation Basics Training (IBT) Program is based on the job task analysis for the North American Board of Certified Energy Practitioners (NABCEP) PV Installer Specialist. The curriculum includes training in array installation, commission, and O&M construction basics, electricity basics, employment readiness, and safety. We partner with several community-based organizations to recruit for our programs and with employers and apprenticeship programs for job placement for our training participants. Our program is a model of the type of training programs awardees can partner with to promote training on Solar for All projects.

SOMAH offers a Job Training Organization (JTO) Directory, which compiles a list of all SOMAH-eligible training programs in one place that contractors can use to connect with training participants. SOMAH Program staff dedicate part of their time to technical assistance, connecting people to jobs, and helping contractors meet job training requirements. The completion rate for SOMAH's job training requirements is 100%, proving that contractors can meet requirements with the right support. The JTO Task Force is another feature of SOMAH that is designed to ensure that JTO's voices and interests are included in the program's training efforts and that trainees have a meaningful experience that helps them advance in their careers. The CEC can consider setting up similar structures within the agency to ensure that Solar for All awardees and training providers can work together to contribute to successful career pathways for training participants.

23. What are the best practices for estimating or reporting on the job opportunities for solar and energy storage projects that should be incorporated in CEC's Solar for All program?

The SOMAH Program requires contractors to hire job trainees on all projects. SOMAH contractors are also required to report on trainee numbers in the application process for the Program. Contractors must submit affidavits reporting trainee opportunities, which the trainees must also sign. SOMAH Program staff attempt to collect data on whether contractors hire trainees after installation;

¹⁵ Interstate Renewable Energy Council, *National Solar Jobs Census 2023*. September 2024. Web: <https://irecusa.org/census-solar-job-trends/>.

¹⁶ *Ibid.*

however, the completion rate of those surveys tends to be low because contractors are not required to submit them.

GRID encourages the CEC to consider making job training and placement reporting a requirement in project applications rather than collecting data through optional surveys. We recognize that this might be an added burden to smaller contractors and encourage making this step in the process as simple as possible.

24. Are there examples of existing community investment plans or agreements that include High Road principles (e.g., Project Labor Agreements, training trust fund contributions, local hire commitments, Disadvantaged Community hiring targets, regional living wage standards)? If so, please describe how CEC can best support.

In addition to the aforementioned job training requirements and infrastructure of SOMAH, the program also contains targeted and local hiring recommendations for contractors. Local hires are defined as an individual who is “domiciled within the county in which the SOMAH project is taking place”. A targeted hire can include residents of disadvantaged communities (as defined by CalEnviroScreen), affordable housing residents, women, people of color, and people who have experienced other barriers to employment, including being homeless, formerly incarcerated, lacking a GED or high school diploma, etc. SOMAH trainees are required to be paid at least 1.4x the minimum wage of the city in which the SOMAH project is located or the contractor’s entry-level wage-whichever is higher. CEC can consider giving priority to applicants who have demonstrated a track record of targeted/local hiring or make a commitment to utilize targeted/local hiring.

25. What other workforce criteria should be considered as part of the CEC Solar for All program?

GRID recommends that the CEC encourage awardees to offer supportive services like transportation, childcare, and other benefits to training participants. This can be built into the funding for SFA awardees and can be provided through the training provider or a partner community-based organization. Barriers such as lack of transportation and childcare can prohibit significant segments of the population, especially from the most underserved communities, from participating in training programs. Being able to provide these services is a huge step in building a sustainable workforce that includes everyone.

Thank you for considering these comments. GRID appreciates the opportunity to provide relevant information and suggestions as this transformative program moves forward and looks forward to continuing to engage with the Commission throughout the development and implementation process.

Sincerely,

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