

# SOLAR FOR ALL

Playbook



# Solar for All Playbook

States, cities, territories and tribes that are awarded federal **Solar for All** grants will need to launch programs that rapidly deliver on the promise of expanding equitable access to solar power and energy storage in their communities.

These programs will need to be expertly designed to fully engage stakeholder input and efficiently implemented with accountability and transparency on results.

To help, **Center for Sustainable Energy**<sup>®</sup>, a leader in solar equity program administration, and **Clean Power Research**<sup>®</sup>, maker of the widely used PowerClerk<sup>®</sup> cloud-based program automation package, offer this playbook of recommended best practices.

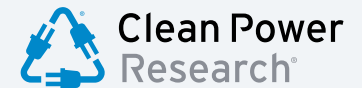
## Center for Sustainable Energy (CSE)

is a national nonprofit that accelerates the adoption of solar energy, energy storage, home electrification and clean transportation through effective and equitable program design and administration. CSE manages over \$5 billion in program value for state agencies and utilities in more than a dozen states nationwide, including the \$1 billion Solar on Multifamily Affordable Housing (SOMAH) Program. As a fee-for-service-funded 501(c)(3) nonprofit, CSE has no shareholders, members or donors and focuses 100% on its clients and one-word mission: **Decarbonize**<sup>®</sup>.



## Clean Power Research

is a trusted partner of leading utilities, state agencies and energy enterprises. Its industry-leading, cloud-based service, PowerClerk, streamlines, automates and scales the deployment and operation of distributed energy resource (DER) programs at utilities and energy agencies. PowerClerk provides transparency and ease of use for customers and stakeholders with straightforward IT integration, responsive and mobile-friendly user interfaces and built-in reporting. Forms and workflows in PowerClerk can be designed and modified by program administrators themselves, without code, ensuring rapid adaptability.



# Key Elements of an Effective Solar for All Program

Center for Sustainable Energy and Clean Power Research offer these best practices based on nearly 50 years of combined experience designing, administering and creating software for large-scale solar and energy storage programs nationwide.

- 1 **Start with inclusive, data-driven design**
- 2 **Clearly communicate to intended participants**
- 3 **Create a streamlined application process**
- 4 **Leverage community-based organizations**
- 5 **Ensure tenants receive program benefits**
- 6 **Integrate workforce development**
- 7 **Continually engage contractors**
- 8 **Support applicants with no-cost technical assistance**
- 9 **Increase impact by layering other programs and financing**
- 10 **Maintain momentum through a construction progress tracker**
- 11 **Ensure robust, transparent data reporting and analysis**
- 12 **For a successful program, seek an experienced third-party program administrator**

KEY ELEMENT

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## Start with inclusive, data-driven design

A program to equitably expand access to solar needs to put the community at the center from the start and continue engaging community stakeholders throughout implementation.

A transparent, collaborative process to engage stakeholders ensures community needs are built-in, yielding better program design and more invested program participants. CSE has found that data is critical to inform decision-making on which geographic areas to target, what income-eligibility standards to use and how to set incentive amounts that will move applicants to action and activate the market.





**BEST PRACTICES**

**Involve the community.** Design a program in collaboration with community stakeholders, contractors, utilities and governments and continue to involve stakeholders in program iteration.

**Focus on key geographic areas.** While *Solar for All* prescribes income and geographic areas, this can be refined further to identify disadvantaged and low-income communities and households at greater risk from climate change impacts or with historically higher total energy burdens (power, heat and transportation).

**Streamline income eligibility.** For income-based programs, avoid complex and sensitive income tax verification. Instead, base eligibility on enrollment in federal income-eligible programs such as the Supplemental Nutrition Assistance Program (SNAP) or Low-Income Energy Assistance Program (LIHEAP). Also, avoid confusing, restrictive deed requirements.

**Determine inclusive incentive levels and application processes.** Incentives should cover most material and installation costs. Consider ways to expand access for hard-to-engage households through higher incentive amounts and/or an earlier, longer or special application window.



**EXPERTISE & IMPACTS**

## San Diego Solar Equity Program

- \$10 million program launched in 2022 to provide solar energy systems at little to no cost to income-qualified homeowners in climate-risk neighborhoods.
- Designed and administered by Center for Sustainable Energy (CSE).
  - 36 active projects in Year 1, totaling 183 kW.
  - Over 80% of participants with incomes of 80% area median income (AMI) or less.
  - Potential for 300+ solar installations over the life of the program.

## Clearly communicate to intended participants

People living in disadvantaged and low-income communities, contractors, property owners and community groups have unique perspectives that require thoughtful communication strategies.

A program administrator experienced in both solar equity program administration and marketing, education and outreach (ME&O) to equity communities can seamlessly bridge communication gaps to raise awareness of **Solar for All** programs and make it easy to apply.



**BEST PRACTICES**

**Develop a strategic marketing plan.** Engaging hard-to-reach audiences requires targeted communications built on data and experience. A detailed ME&O plan, informed by local stakeholders, should outline strategies for raising program awareness and encouraging participation.

**Create an easy-to-navigate program website** tailored to meet the needs of multiple types of participants, including property owners, contractors, tenants and job seekers.

**Provide an abundance of resources.** In addition to a program handbook, provide a variety of educational toolkits, checklists, how-to videos and maps. CSE created an online **Eligible Property Map** for SOMAH that can be filtered by disadvantaged community status, utility service territory and legislative district to make it easy for property owners to see if they qualify, for contractors to find potential customers and for stakeholders to see the program's reach.



**EXPERTISE & IMPACTS**

## California's Solar on Multifamily Affordable Housing (SOMAH) Program

- \$1 billion solar equity program, largest statewide solar program in the U.S.
- Administered since 2019 by CSE with team of partners.
- Uses PowerClerk as the web- and mobile-accessible application processing platform.
- Incentives for solar installations on multifamily residential rental properties in low-income and disadvantaged communities or owned by tribes or public housing authorities/agencies.

**Over 850** applications processed

**85%** of solar system production on average is allocated to tenants through virtual metering credits (VNEM)

**530** projects reserved or installed

**Nearly 40,000** tenant units served

**70+** megawatts of solar energy installed or reserved

**Over 14,000** job training hours completed

**178** solar contractors completed eligibility requirements

## Create a streamlined application process

An integrated, end-to-end process avoids process errors, delays and stakeholder dissatisfaction and supports program success.

Agencies distributing solar rebates should prioritize workflow automation software to efficiently administer their programs, comprehensively track and report on applications, facilitate transparent communication, meet deadlines and maintain auditability. **PowerClerk** is used by over 75 utilities and energy agencies across 36 states and has processed more than 2.5 million energy applications, including more solar rebates than any other software platform.







**Successful program automation solutions deliver:**

- Easy-to-use, intuitive forms with conditional logic to guide applicants through the process, automated communications, transparent views and integrated eSignatures.
- Systematic project workflows with built-in milestone tracking, automated notifications and transparent reporting dashboards to show incentive program progress against allocated budgets.
- Flexible, out-of-the-box workflow capabilities and self-service, “no-code” design features to quickly launch and update programs without IT involvement and role-based access controls to ensure data security and compliance.

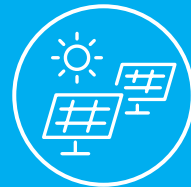
**BEST PRACTICES**

**Create an easy-to-navigate applicant portal** informed by successful solutions used by similar programs.

**Incorporate stakeholder input** when designing application and documentation requirements, ensuring an intuitive experience and maximum program participation.

**Take advantage of workflow automation** to streamline the solar rebate process from end to end.

**Implement flexible software tools** to quickly launch and update programs and ensure change management is cost-effective and straightforward.



**EXPERTISE & IMPACTS**

## Jacksonville Electric Authority (JEA): Streamlining solar interconnection

**Challenge:** JEA’s solar DG interconnection program was buckling under inefficient, manual processes.

**Solution:** Using PowerClerk, the JEA team developed and launched a new, online solar interconnection application process in less than three months, with the following results:

- Resolved a 9-week project backlog in two weeks.
- Slashed application approval timelines by 70% (from weeks to days).
- Improved customer satisfaction and installer relationships.

## Leverage community-based organizations (CBOs)

Ensuring Solar for All success will require collaborative and continual two-way communication with low-income, disadvantaged and tribal communities.

CSE enlists community-based organizations (CBOs) to ensure the challenges of people in impacted communities are reflected in program design and to raise awareness of program benefits. CBOs are trusted by their communities and share information in ways that connect and resonate. By providing guidance and resources to CBOs — and truly listening to their experiences — CSE has developed community networks that continue to support the adoption of clean technologies even after programs conclude.



BEST PRACTICES

**Seek an experienced program administrator** aligned with an equity mission and CBO partner expertise.

**Incorporate compensation for CBOs** into program budgets to pay for their expertise informing program design and implementation and for conducting outreach to potential program applicants, contractors, community solar subscribers and job trainees and apprentices.

**Consider having a paid advisory council** that represents environmental justice, affordable housing, tenants, labor and workforce development, tribal communities and government.



## California Solar Initiative

- **10-year program** administered by CSE to provide rebates for solar for residential and commercial utility customers.
- Program automation provided by PowerClerk.
- **214 MW** of installed solar power.



Awarded over  
**19,300**  
rebates  
totaling over  
**\$191 million**  
from 2006-2016 to help  
businesses, nonprofits, public  
agencies and homeowners  
lower energy costs

## Ensure tenants receive program benefits

When property owners install solar, tenants may pay a price through increased rent or other fees or receive a small allocation of the system's overall production.

A well-designed **Solar for All** program should ensure that all property residents equitably benefit from the advantages of solar.

CSE has found success in requiring at least 51% of the solar energy system's electric output directly offset tenant load through virtual net energy metering (VNEM). This is a mechanism for distributing solar benefits to tenants by allowing solar credits to be applied to individual tenants' electricity bills in multifamily housing. Since the Solar on Multifamily Affordable Housing (SOMAH) Program launched in 2019, the allocation for tenants has averaged at least 85%.

Villa Loma apartment residents save \$60 per month on average from solar



## BEST PRACTICES

**Include tenant protections** to ensure current and future tenants do not bear any portion of the cost of the solar energy system, for example, by having host customers sign an affidavit ensuring tenants will benefit from reduced costs through VNEM bill credits.

**Clarify property owner requirements.** Require property owners to exclude solar credits from utility allowance calculations. Require that property owners not assume control of tenant utility accounts, nor increase rents in relation to program-funded solar installation.

**Explore other means of providing economic benefit to tenants.** In jurisdictions without VNEM or for master metered properties, explore options such as direct cash benefits or additional amenities such as a shuttle service, reduced cost internet, wellness programs, etc. (See U.S. Department of Housing and Urban Development [notice](#).)



## Multifamily Affordable Solar Housing Program

CSE-administered program from 2008-2015 to offset the costs of installing solar in multifamily, affordable housing developments.

**\$10 million**  
in incentives distributed and  
**6 MW**  
of solar

## Integrate workforce development

Solar for All program success will depend on a robust local solar contractor network with a motivated, readily available workforce.

This critical and sometimes overlooked need can be supported through training and apprenticeship programs that create a path to earn a family-sustaining wage as solar installers, system designers, project managers or in other green economy careers.

Ideally, programs should partner with job training organizations. Another step toward advancing equitable economic opportunity, which CSE has taken, is to require job training for all program-funded projects and encourage contractors to hire from within the community or property where the installation is taking place.



See a **Job Training Portal**



## BEST PRACTICES

**Make it easy for contractors** to understand and comply with **Solar for All** prevailing wage and job apprenticeship requirements by providing contractor training, guidance and resources.

**Include an optional extra incentive** for contractors who conduct on-the-job training and ensure that training opportunities are paid.

**Engage tenants and CBOs** in recruiting job training candidates.

**Maintain resources** on job training opportunities and share success stories.

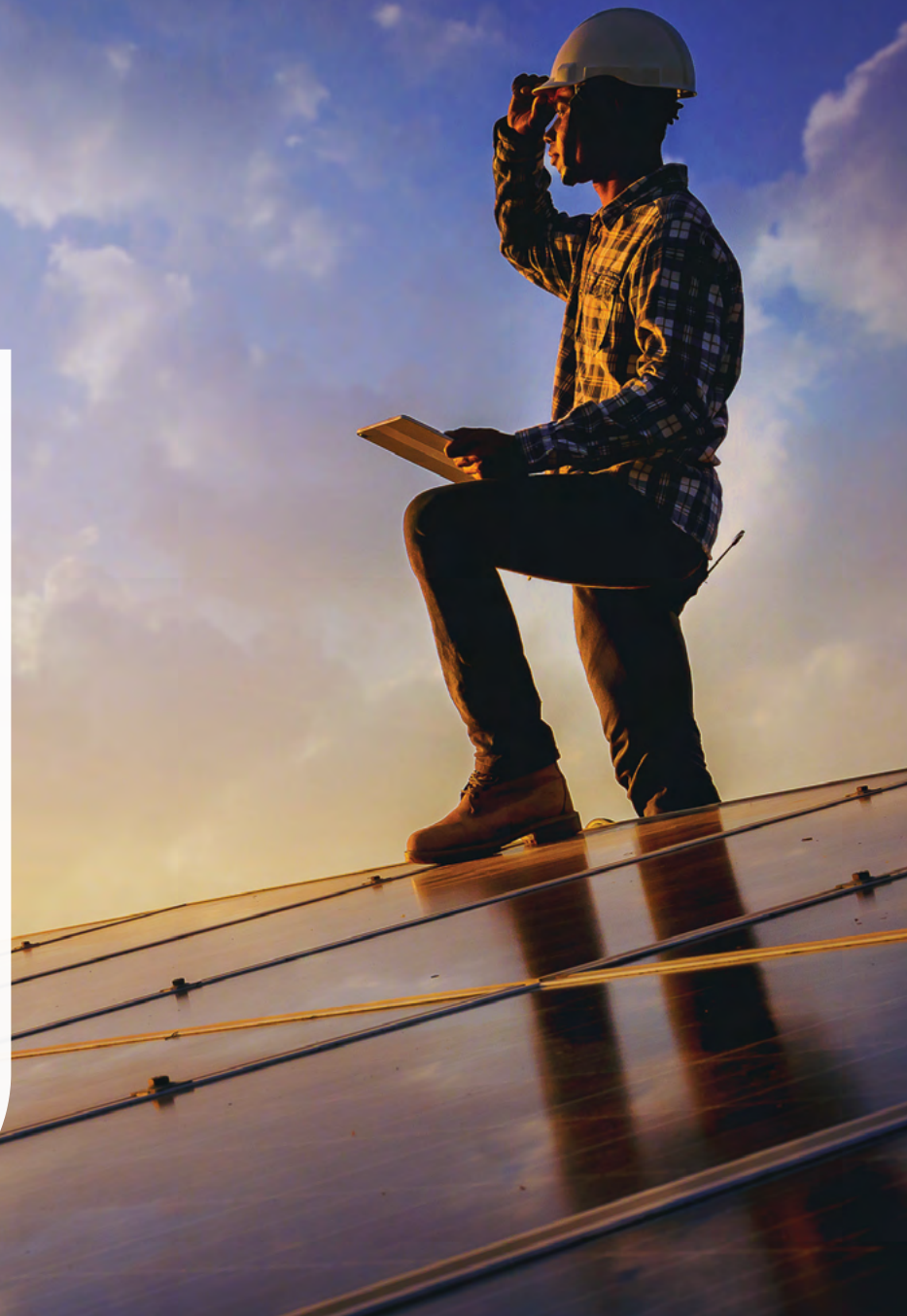


## Continually engage contractors

Knowledgeable and engaged contractors are critical to supporting Solar for All programs and driving participation.

Compelling outreach and marketing are needed to attract and engage a diverse pool of contractors in the program. Simple eligibility requirements and training will ensure contractors are ready to participate. And ongoing engagement can quickly surface problems and challenges the program administrator needs to address.

CSE has found that multiunit affordable housing property owners and small- to medium-sized contracting firms may not have sufficient cash to complete a long project if the incentive payout doesn't come until the very end. Financing options such as power purchase agreements, bridge financing or milestone payments can address this issue.







BEST PRACTICES

**Conduct marketing, outreach and regular training**

to develop a diverse pool of eligible contractors.

**Enlist CBOs** to recruit local contractors.

**Address known barriers** to contractor participation, such as reducing program complexity and offering bridge financing.

**Maintain ongoing engagement** to ensure contractor pain points are addressed as the program evolves.

**Ensure software support** for financing options in the underlying program automation system.



## California Utility PV Interconnection Program

- Large investor-owned utility PV interconnection program
- Deployed PowerClerk as highly scalable and flexible portal

Over  
**650,000**  
applications processed since  
2015 with as many as

**8,500**  
applications processed on peak days

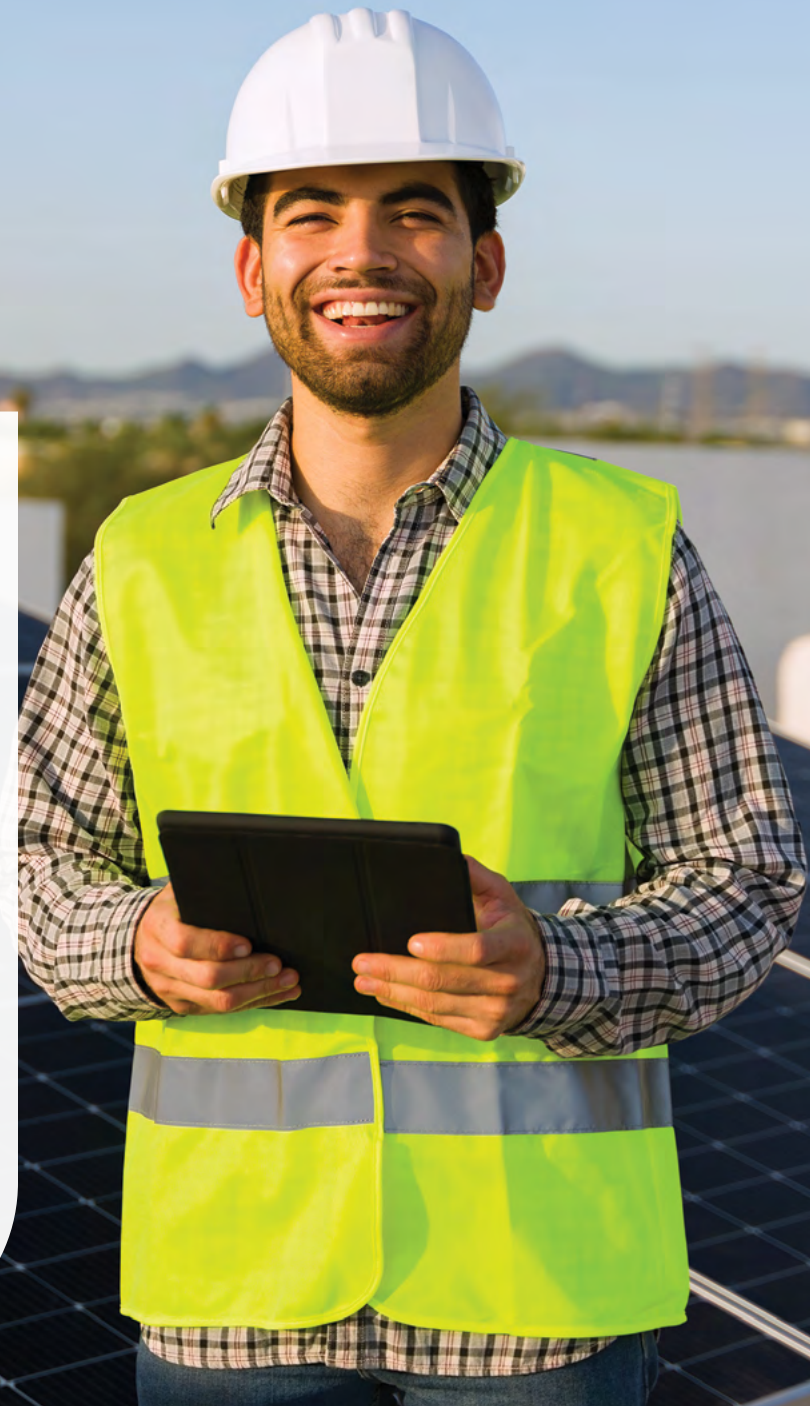
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Over  
**2,000**  
**solar contractors**  
have submitted project applications

## Support applicants with no-cost technical assistance

The complexities of lining up financing, choosing a contractor and applying for rebates can dissuade property owners from even considering solar.

That is why a **Solar for All** program should help property owners understand the benefits of installing solar and explain the process before they are required to invest. This support can be offered at no cost or via loans or grants. In CSE's experience, technical assistance services, including cost/benefit analyses, assessment of a property's solar viability and identification of cost-effective energy efficiency upgrades, reduce the resources property owners need to expend to adopt solar.





BEST PRACTICES

**Provide no-cost technical assistance** to help property owners understand the benefits of solar and the program application process.

**Ensure you have a technical assistance team** that fully understands the program and the concerns of property owners and contractors.

**Proactively connect with property owners and contractors** who have expressed interest but haven't applied to see if technical assistance is the missing link to get them to participate.



KEY ELEMENT

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## Increase impact by layering other programs and financing

Will incentives be enough to close the affordability gap for property owners?  
Will financing be available to enable a contractor to take on Solar for All projects?

The answers are yes, if you leverage complementary programs and financing to stretch federal dollars and make a bigger impact.



BEST PRACTICES

**Leverage other funding sources** to expand the reach of the program and clean energy opportunities.

**Coordinate across complementary programs**, including energy efficiency and clean energy, to support applicants and stretch dollars.

**Explore investment tax credit** direct pay options.

**Connect with nonprofit finance entities** to leverage existing finance options and encourage development of new offerings to meet the needs of participants and contractors.

**Integrate with complementary programs at a software level** by using a flexible program platform that will reduce the risk of errors and double data entry while speeding projects toward completion.

## Layering Programs

Identify and coordinate with existing renewable and sustainable energy programs to avoid redundancy and take advantage of similar services. For example, the U.S. Department of Health and Human Services confirmed in a **June 2023 letter** that LIHEAP funds can be used to pay for community solar subscriptions, supporting Solar for All goals.

CSE advocates a “reduce before you produce” approach that implements energy efficiency measures before determining the size of solar system needed.

Also, customers in low-income and disadvantaged communities may need help to be solar-ready. Coordinating across programs can ensure an applicant’s need for an electrical panel upgrade is not a barrier to installing rooftop solar.

## Financing

A nonprofit or public/quasi-public financing entity, such as a green bank, credit union or community development financial institution, can help make projects in underinvested communities financially feasible through bridge loans, loan loss reserves or other gap financing.

Additionally, the federal Investment Tax Credit can be used to benefit residential solar projects by up to 70% of the project cost or can be directed toward other projects, further catalyzing market transformation.

## Maintain momentum through a construction progress tracker

Large-scale solar projects can run into multiple hurdles including supply chain woes, labor shortages, engineering challenges and permit and inspection delays. Any one of these can stall progress and leave funds sitting instead of working to achieve solar equity.

A well-planned program may go beyond simply ensuring project eligibility by including a qualitative and/or quantitative assessment of construction readiness. CSE has found that a tiered application selection process that prioritizes shovel-ready projects is an important program element for the community to see tangible impacts quickly.



Solar for All funding recipients and program administrators need visibility on progress toward construction milestones.

A construction progress tracking feature like the one in **PowerClerk** provides an early warning of projects facing delays as well as insights into recurring pain points to inform technical assistance and program or policy changes. Applicants get visibility of timelines and automated reminders of approaching deadlines, streamlining communication and reducing support volume on the program administrators and sponsoring agency.

**BEST PRACTICES**

**Consider a tiered approach** to application selection to prioritize shovel-ready projects.

**Use an automated system** for closely monitoring project progress through the multistage permitting, construction and interconnection processes.

**Be able to easily identify recurring pain points and reasons for delays** to inform outreach and assistance and potential program or policy changes.



## Ensure robust, transparent data reporting and analysis

Solar for All has numerous data and reporting requirements.

Meeting these and other program requirements, like demonstrating a minimum of 20% savings on a participating household's electric bill, can be accomplished by establishing metrics and planning for data collection upfront. CSE also publicly shares program data through online dashboards that stakeholders can easily explore.







## BEST PRACTICES

**Build in data tracking and reporting requirements**

during the program design phase.

**Base program operation on a thorough, configurable software platform**

that tracks data at a granular level and logs all changes.

**Coordinate with utilities** to confirm final permission to operate a solar system.

**Require a guarantee** from multiunit and community solar project owners that bill savings will continue to be met through the required period.

**Provide transparent reporting** via public charts and dashboards, regular reports or summaries and accessible datasets.

**Use data analysis** to inform program improvements to achieve goals and objectives.



## EXPERTISE &amp; IMPACTS

## Self-Generation Incentive Program (SGIP)

- Helps residents and business owners pay for energy technologies that lower greenhouse gas emissions and reduce electric demand on the grid.
- CSE is the only third-party administrator in California to run the program for a major investor-owned utility.

## In CSE-administered territory:

**\$265m** in rebates awarded

**177** megawatts capacity installed

**8,690** incentives reserved for energy storage projects with a focus on wildfire-prone, low-income or disadvantaged communities

**200+** distributed energy technology projects



## For a successful program, seek an experienced third-party program administrator

Swift action is essential to making the most of Solar for All funding.

With multiple competing priorities and concerns consuming government agencies' time and resources, an experienced third-party program administrator (PA) can provide a turnkey yet customizable solution that efficiently meets program goals and objectives and serves community needs.

Under **Solar for All** grant guidelines, successful applicants will need a competitive request for proposal (RFP) process to select a third-party PA.

# What a PA can bring to your program

**Center for Sustainable Energy** and **Clean Power Research** offer these best practices based on nearly 50 years of combined experience designing, administering and creating software for large-scale solar and energy storage programs nationwide.



## Expertise and experience

A PA with knowledge of similar, pioneering solar and energy storage equity programs allows your program to take advantage of this expertise.



## Resources

A PA can deploy a broad team experienced in program design, marketing and outreach, secure online application portals, customer service and technical assistance, incentive processing, and data tracking and reporting.



## Cost- and time-saving efficiencies

An experienced PA can offer a turnkey program design and administration solution that will streamline and speed up your launch.



## Community partnership

A nonprofit PA experienced in partnering with community-based organizations ensures programs are community- and equity-centered from the start.

For help designing and administering a Solar for All program, contact [consult@energycenter.org](mailto:consult@energycenter.org)

# About Center for Sustainable Energy

Center for Sustainable Energy (CSE) has deep, direct experience and expertise designing and administering programs that meet Solar for All objectives to reduce greenhouse gas emissions and other air pollutants and deliver those benefits to low-income and disadvantaged communities. CSE's solar equity and energy storage portfolio includes the largest statewide solar incentive program in the United States, California's \$1 billion Solar on Multifamily Affordable Housing (SOMAH) Program.

## CSE brings:

- **Deep expertise and experience:** CSE has 28 years of experience advising on, designing and administering solar, energy storage, electric vehicle (EV) and EV infrastructure programs across 11 states. CSE has dedicated teams of in-house subject matter experts to advise on all functions of program administration: planning and design, marketing and outreach, data tracking and analysis, technical assistance and incentive processing.
- **Smart resource management:** CSE allocates and manages resources to streamline operations and meet program goals. As a third-party administrator, CSE upholds its fiduciary responsibility to reduce administrative costs, maintain strict fraud control measures and responsibly distribute funds to meet program objectives.
- **Integrated, turnkey solutions:** CSE's all-inclusive program administration saves time and money. From program marketing, education and outreach to website design, hosting and database management and from application messaging, tracking, processing and incentive issuance to reporting and customer support, CSE provides everything to launch and run a successful program. CSE has partnered with Clean Power Research to use its PowerClerk platform to administer the SOMAH Program and Solar for All programs.
- **Community partnerships:** CSE has established networks of CBOs and trusted partners and works with them to ensure community-centered program design, administration, assistance and outreach across the varied geographies and communities of the states they serve.
- **Shared mission:** CSE shares Solar for All's mission to provide equitable access to solar energy to low-income populations significantly burdened by negative socioeconomic policies and environmental pollution. As a nonprofit, CSE has a well-earned reputation as an independent program administrator. Governments, utilities and the private sector trust CSE for its data-driven and software-enabled approach, deep domain expertise and customer-focused team.

# About Clean Power Research

Clean Power Research is a trusted partner of leading utility and energy enterprises best known for delivering innovative software services that help organizations successfully navigate the energy transformation. For over 25 years, customers have depended on the company to inform, streamline and quantify energy-related decisions and processes. Its software services, including PowerClerk, help solve the energy industry's most challenging problems. PowerClerk helps scale and streamline deployment of energy programs using business process automation software designed for utilities and energy agencies. Flexible, no-code configuration streamlines design and management of DER programs that meet customer satisfaction and process optimization goals. Straightforward IT integration, a responsive, mobile-friendly user interface and built-in reporting provide transparency and ease-of-use for customers and stakeholders.