

Appendix D: Single-Family Affordable Solar Homes (SASH) 2.0 PROGRAM HANDBOOK

SASH Handbook for “SASH 2.0” program under reauthorized funding from AB 217¹

¹ The SASH Program’s funding was reauthorized with Assembly Bill 217 (AB 217) in 2013; this extended the SASH Program timeline from its intended sunset date in 2016 until 2022. While most of the SASH Program remains the same with the extended funding, there are some changes with the extended funding. “SASH 1.0” and “SASH 2.0” are used to distinguish between the original SASH program funding (SASH 1.0) and the reallocated funding under AB 217 (SASH 2.0). As of Q2 2016, all of the SASH 1.0 funding has been exhausted or encumbered in each IOU territory, and the SASH 2.0 funding is being utilized.

Table of Contents

1. Introduction		
1.1	Overview of SASH 2.0 Program	p. 2
1.2	Program Manager	p. 2
1.3	Program Budget	p. 2
1.4	Primary Differences between SASH 2.0 and CSI general market program	p. 2
2. Program Requirements		
2.1	The Participants in the CSI SASH 2.0 Program	p. 3
2.2	Generator System Requirements	p. 4
2.3	Energy Efficiency Requirements	p. 4
2.4	Permanency Requirements	p. 4
2.5	Installation Standards	p. 4
2.6	Inspection Requirements	p. 5
2.7	Job Training/Workforce Development Requirements	p. 5
3. SASH 2.0 Program Incentive Structure		p. 7
4. Application Process for SASH 2.0 Projects		
4.1	Applicant	p. 7
4.2	Applicant Eligibility and Application Process	p. 7
5. Incentive Payment Process		
5.1	Incentive Payments	p. 9
5.2	Assignment of Incentive Payment to Another Party	p. 10
5.3	Existing PV Systems	p. 10
6. Attachments		
Exhibit A	Modified Design Factor Calculation (example)	p. 11

1. INTRODUCTION: CALIFORNIA SOLAR INITIATIVE – SASH 2.0 PROGRAM

This section of the CSI SASH Program Handbook is intended to provide SASH 2.0-specific program information. The information provided in the SASH 2.0 Program Handbook supersedes the specific information in the CSI Program Handbook as it relates to the general market program. If the SASH 2.0 Program Handbook does not address a specific subject area, then the general market program's provisions and program requirements contained in the CSI Program Handbook apply.

1.1 Overview of SASH 2.0 Program

The goal of the SASH 2.0 Program is to provide low-income single-family homeowners with access to photovoltaic (PV) systems totaling at least 15MW (CEC-AC), and to decrease electricity usage and bills without increasing monthly household expenses. In addition to providing low-income homeowners with reduced electricity bills, the SASH Program will also benefit the communities it serves by leveraging local green-job training and workforce development programs to assist with installing the solar systems.

To decrease the expense burden for low-income homeowners, the SASH 2.0 Program provides eligible homeowners with incentives to help offset the upfront cost of a solar electric system. (see SASH 2.0 Handbook Section 3 for incentive details).

1.2 Program Manager

The SASH 2.0 Program Manager is GRID Alternatives. GRID Alternatives is the single state-wide Program Manager for the SASH 2.0 Program in the three Investor-Owned Utility ("IOU") territories: Pacific Gas & Electric Company (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric Company (SDG&E).

1.3 Program Budget

The SASH 2.0 Program budget is \$54 million.

1.4 Primary differences between SASH 2.0 Program and CSI general market program

- Program Budget – see SASH 2.0 Handbook Section 1.3
- The SASH 2.0 Program has a permanent incentive structure and does not decrease with demand. See Section 3 of the SASH 2.0 Handbook for incentive level details.
- The SASH 2.0 Program only offers an Expected Performance Based Buydown (EPBB) incentive and not the Performance Based Incentive (PBI). Any CSI Handbook reference to PBI does not apply to the SASH 2.0 Program.
- Application Process – see SASH 2.0 Handbook Section 4.
- Program Participants – see SASH 2.0 Handbook Section 2.1
- Non-PV systems are not allowed in the SASH 2.0 Program. Any reference to non-PV systems throughout the CSI Handbook are excluded from the SASH 2.0 Program.
- System Size – see SASH 2.0 Handbook Section 2.2.1
- Energy Efficiency requirements – see SASH 2.0 Handbook 2.3
- Self-installed systems are not allowed in the SASH 2.0 Program. Any CSI Handbook reference to self-installed systems does not apply to the SASH 2.0 Program.
- Performance and Permanency Requirements – see SASH 2.0 Handbook Section 2.4
- Inspection Requirements – see SASH 2.0 Handbook Section 2.6
- Incentive Structure – see SASH 2.0 Handbook Section 3
- SASH 2.0 Program statistics are available on California Solar Statistics
- Incentive Payment Process – see SASH 2.0 Handbook Section 5
- Field Inspections – see SASH 2.0 Handbook Section 2.6

2. PROGRAM REQUIREMENTS

2.1 The Participants in the CSI SASH 2.0 Program

Within the nomenclature of the SASH 2.0 Program, the person who applies for an incentive will be referred to as an Applicant. GRID Alternatives is the SASH 2.0 Program Manager and will be responsible for client outreach and system installation.

2.1.1 Applicant

The Applicant completes and submits the SASH 2.0 Program application and serves as the main contact person for the Program Manager throughout the application process. The SASH 2.0 Program Manager will work directly with the Applicant to assist them in filling out the application and collect the required documentation. Applications and submissions from outside parties will not be accepted by the Program Manager.

The SASH 2.0 Program incentive is only available to low-income homeowners and is not available to commercial or any other non-residential projects.

See Section 4 for eligibility requirements.

2.1.2 System Owner

In the SASH 2.0 Program the Applicant may or may not be the System Owner, the party who owns the generating equipment. After Commission approval of a Third-party ownership (TPO) model for SASH in June 2015, the Applicant may enter into a TPO arrangement with a Commission-approved third-party System Owner. The SASH Program also allows Host-Customer owned systems. The SASH TPO model maximizes benefits to the homeowner and assures consumer protection. Only GRID Alternatives, as the SASH Program Manager, is authorized to develop, market and contract the CPUC-approved TPO model for SASH participants.

2.1.3 Licensed Solar Contractor / Installer

The SASH 2.0 Program Manager will be responsible for the installation of systems funded through the SASH 2.0 program. The SASH 2.0 Program Manager will either install the systems under its C-10 or C-46 contractor license or hire a third party solar contractor through the SASH 2.0 Program's Sub-Contractor Partnership Program (SPP) to do the installation.

All systems must be installed by appropriately licensed California contractors in accordance with rules and regulations adopted by the State of California Contractors State Licensing Board (CSLB). Installation contractors must have an active C-10, or a C-46 license for photovoltaic (PV) systems. All systems must be installed in conformance with the manufacturers' specifications and with all applicable electrical and building codes and standards. Unlike the CSI general market program, self-installations will not be permitted in the SASH 2.0 Program.

GRID Alternatives has established partnerships with contractors in the SPP program. GRID will work with the existing network of contractors to install SASH systems. Dependent on future need, GRID may open the SPP program to accept applications for new sub-contractors by publishing a solicitation notice on GRID Alternatives' SASH website.

The SASH Program is uniquely designed to incorporate job training programs intended to promote green-collar jobs in low-income communities and to develop a trained workforce that will help foster a sustainable solar industry in California. Both GRID's volunteer-based installation model and the sub-contractor program incorporate this workforce development

component. For additional details on job training requirements see Section 2.7 Job Training/Workforce Development Requirements.

2.2 Generator System Requirements

PV systems (i.e., systems that cause direct conversion of sunlight to electricity) are the only technologies eligible to receive incentives from the SASH 2.0 Program. Non-PV technologies, including solar hot water systems, are not eligible for the SASH 2.0 Program incentive.

2.2.1 System size

The system size eligible for SASH 2.0 Program incentives will be optimized for electric bill impact. The system size will be capped at 5kW (CEC-AC). The minimum system size is 1kW CEC-AC.

2.3 Energy Efficiency Requirements

Energy efficiency education and referral to energy-efficiency providers is an integral part of the SASH 2.0 program. GRID Alternatives' staff conducts energy efficiency training with every participating household. Applicants must enroll into the utilities' low-income energy efficiency program, referred to as the Energy Savings Assistance Program (ESAP), if eligible. The ESAP program is administered by the IOUs. The Program Manager will report bi-annually on the number of SASH 2.0 participants who have been referred to, and enrolled in, the ESAP program.

The Program Manager will ensure incentives are not paid until feasible ESAP program measures are completed, the applicant is on a waiting list for ESAP program completion, or an energy efficiency training and education session is completed.

2.4 Permanency Requirements

Equipment installed under the CSI Program is intended to be in place for the duration of its useful life. Only permanently installed systems are eligible for incentives. This means that the solar system must demonstrate to the satisfaction of the Program Manager adequate assurances of both physical and contractual permanence prior to receiving an incentive.

Physical permanence is to be demonstrated in accordance with industry practice for permanently installed equipment. Equipment must be secured to a permanent surface. Any indication of portability, including but not limited to temporary structures, quick disconnects, unsecured equipment, wheels, carrying handles, dolly, trailer, or platform, will deem the system ineligible. These requirements are in accordance with the CSI Program requirements and will automatically reference any changes to the CSI general market program's requirements.

2.5 Installation Standards

To qualify for SASH 2.0 Program incentives, an installation must meet a minimum performance requirement, which is 85% of the Design Factor (DF) based on a modified Estimated Performance Based Buydown (EPBB) calculation. If the modified Design Factor is less than 85%, the system does not qualify for the SASH 2.0 Program incentive. The Design Factor does not affect the rebate amount.

The modified EPBB Design Factor calculation for the SASH 2.0 Program must be calculated without the geographic correction (i.e. the geographic correction will always be 100%). Since the current online EPBB calculator auto-fills the geographic correction based on the Site's zip code and may be less than 100%, the SASH 2.0 Program's modified Design Factor may need to be re-calculated manually using the formula in Exhibit A.

2.6 Inspection Requirements

2.6.1 System Inspections

The SASH 2.0 Program Manager will ensure that 1 in 12 SASH 2.0 system installations are inspected for proper installation and operability by an independent third party. The sampling rate of 1 in 12 is based on the current general market CSI sampling rate. The field inspectors will be approved by the CPUC and the CPUC may directly contact the inspectors at any time. Incentives will be paid only after the system has passed this field inspection.

The system inspection will include but may not be limited to the verification of the following information:

- System size and nameplates of equipment used;
- Design considerations: tilt, azimuth, standoff height, shading analysis;
- 85% Design Factor, minimum requirement;
- Address and location of system;
- Operability; on-site inverter production reading

If the field inspector finds that an installed system does not comply with program and inspection guidelines no incentive payment will be made for that system until the system is modified to meet SASH Program guidelines or the incentive amount is recalculated.

It is highly recommended, but not required, that the applicant attend the inspection. However,

- If the applicant is not present for the inspection, the inspector will not conduct the inspection unless permission was previously obtained in writing or via e-mail allowing the inspector to conduct the inspection without the applicant present, and;
- Access to all of the equipment must be provided or the inspector will not conduct the inspection.

2.7 Job Training/Workforce Development Requirements

The SASH 2.0 Program is uniquely designed to incorporate job training programs intended to promote green-collar jobs in low-income communities and to develop a trained workforce that will help foster a sustainable solar industry in California. The SASH 2.0 Program is legislatively mandated to include a job training opportunity at every installation. In 2010, GRID Alternatives launched the Sub-contractor Partnership Program (SPP) to work alongside the GRID volunteer installation model in order to meet installation targets within the SASH program and provide paid job trainee workdays. If the project is installed in the SPP program, the sub-contractor must hire at least one eligible job trainee² to work on the installation. Both the sub-contractor and the job trainee must complete the SASH 2.0 SPP affidavit certifying the job training opportunity was provided.

In order to align with the industry standards, the below categories from the Affidavit are broken into the NABCEP job task analysis categories:

² Eligible job trainees come from PV installation and design training programs including those offered by a California Community College or other PV-training programs offered to the public by local government workforce development programs, community nonprofits, private enterprises or the electrical workers union with 40+ hours of instruction and/or hands-on PV installation and design training.

- Directly work on solar installation
 - Installing Electrical Components
 - Installing Mechanical Components
 - Completing System Installation
 - Conducting Maintenance and Troubleshooting Activities
- Project Design/Project Engineering
 - Designing Systems
- Project management/coordination
 - Managing the Project

If the project is installed using GRID Alternatives' volunteer-based installation model, the project must include an opportunity for either a Team Leader, a SolarCorps, or at least three individuals from a specified job training organization or program to participate as volunteers. Below are brief definitions of each eligible group and Additional information on these programs and requirements can be found at: www.gridalternatives.org/programs/workforce-development.

- Team Leader: GRID Alternatives' Team Leader Program offers experienced volunteers more comprehensive, in-depth training to further develop their skills and increase employment opportunities in the growing solar jobs market. In addition to building their own skills, Team Leaders provide guidance for other volunteers, ensure all participants have a positive and safe experience, and supervise all work to make sure it meets quality standards. Team Leaders log a minimum of 40 hours on GRID Alternatives' installations, complete a suite of six certifications on technical skills, attend a leadership skills workshop, and complete two installations to sign-off on skills with a GRID installation supervisor.
- SolarCorps: SolarCorps opportunities at GRID Alternatives include fellowships in project management, system design, marketing and outreach, communications, job trainee and volunteer management, market development, construction, and fundraising. These are one-year paid fellowships that are based on the Americorps program and are sometimes combined with additional funding from the Corporation for National and Community Service.
- Job training organization groups: Some of GRID Alternatives' in-house installations are reserved for job training groups of students from job training programs. These are students from community colleges, vocational high schools, or community job training programs that generally have completed a PV-classroom component, but utilize GRID's installation as the hands-on, real-world application of the skills they are learning in a classroom.³ Volunteers in GRID's Installer Basic Training (IBT) Certificate Program can count for the group job training requirement if they have attended a volunteer orientation, completed at least one skill in the IBT Certification Program, and are actively working on attaining more skill certifications in the program. A minimum of three (3) students from a job training organization group must participate on the installation to meet the requirement.

³ In September 2016, GRID launched an in-house Installation Basics Training (IBT) Certification Program that includes twelve specialized certifications on technical skills divided into Array IBT and Electrical IBT. The program is designed to provide formal evidence of skilled volunteer work and training akin to a job training program offered outside of GRID volunteer installations.

3. SASH 2.0 PROGRAM INCENTIVE STRUCTURE

This section provides a general overview of the SASH 2.0 Program Incentive structure. Installations will be provided a one-time payment under the Expected Performance Based Buydown (EPBB) structure to help reduce the cost of installation. The SASH 2.0 Program only offers the EPBB incentive and does not offer the Performance Based Incentive (PBI).

The SASH 2.0 Program offers one non-declining incentive level of \$3/W, CEC-AC. The incentive level is the same for all Applicants.

4. APPLICATION PROCESS FOR SASH 2.0 PROJECTS

4.1 Applicant

The Applicant that completes and submits the SASH 2.0 Program application and serves as the main contact person for the Program Manager throughout the application process. The SASH 2.0 Program Manager will work directly with the Applicant to assist them in filling out the application and collect the required documentation.

4.2 Applicant Eligibility and Application Process

The following section describes in detail the processes for applying for the SASH 2.0 Program. The SASH 2.0 Program Manager will be the sole entity that reviews and accepts/rejects applications.

4.2.1 Applicant Eligibility

To qualify for the SASH 2.0 Program, the Applicant must meet the following minimum requirements:

- A. Must be a customer of PG&E, SCE, or SDG&E.

The project's Site must be within the service territory of, and receive electric service from PG&E, SCE, or SDG&E.

- B. The residence must be occupied by the homeowner/applicant.

- C. The household's total income must be 80% of the area median income (AMI) or less based on the most recent available income tax return.

Area Median Income is subject to annual changes based upon Housing and Urban Development's income guidelines.

- D. The residence must be California Public Utilities Code (P.U.) 2852-compliant, defined as one of the following:

- 1) An individual owner-occupied residence sold at an affordable housing cost to a lower income household that is subject to:

- a. a resale restriction,⁴ **or**;
- b. an equity sharing agreement for which the homeowner does not receive a greater share of equity than described in paragraph (2) of subdivision (c) of Section 65915 of the Government Code.

The resale restriction or equity sharing agreement must be between the homeowner and a public entity or a qualifying nonprofit affordable housing provider.

- 2) An owner-occupied residence that is part of a multi-family complex and is financed with low-income housing tax credits, tax-exempt mortgage revenue bonds, general obligation bonds, or local, state, or federal loans or grants, and where the affordable units have been or will be initially sold at an affordable housing cost to a lower income household and those units are subject to a resale restriction or equity sharing agreement pursuant to the terms of the financing or financial assistance.
- 3) An owner-occupied residence that is part of a multi-family complex in which at least 20 percent of the total housing units have been or will be initially sold at an affordable cost to a lower income household and those units are subject to:
 - a. a resale restriction, **or**;
 - b. an equity sharing agreement for which the homeowner does not receive a greater share of equity than described in paragraph (2) of subdivision (c) of Section 65915 of the Government Code.

The resale restriction or equity sharing agreement must be between the homeowner and a public entity or a qualifying nonprofit affordable housing provider.

4.2.2 Application and Reservation Process

Potential applicants can learn more about the SASH 2.0 Program or to find the nearest regional office by visiting www.gridalternatives.org. Applicants may also leave an inquiry at the toll free message line (866)921-4696 or by e-mailing SASH@gridalternatives.org

SASH 2.0 Application process

- 1. After an initial pre-screening phone conversation, the Program Manager will set up a meeting with the Applicant to discuss the details of the SASH 2.0 Program, review the application, and answer any questions from the Applicant.
- 2. The Program Manager will review all applications and ensure their completeness and confirm all required documentation has been provided.

The following documents are required:

- i. Completed SASH 2.0 Application
- ii. Copy of most recent available federal income tax return
- iii. Copy of most recent electricity bill
- iv. Proof that the residence is P.U. Code 2852 compliant.

⁴ Certain and specific “presumed resale restrictions” meet this requirement, such as those found in federally-designated Empowerment Zones, Enterprise Communities, certain Neighborhood Revitalization Areas, Targeted Employment Areas, and Qualified Census Tracts.

3. The Program Manager refers Applicant to the ESAP providers for enrollment into the ESAP program, if eligible.
4. If the Applicant qualifies for the SASH 2.0 program, a Construction site visit will be scheduled to determine if the Site is amenable to a solar installation. A printout of EPBB Tool Calculation (www.csi-epbb.com) is required to ensure the system design meets the 85% Design Factor requirement (see SASH 2.0 Program Handbook Section 2.5).
5. GRID Alternatives will provide SASH applicants with the maximum SASH incentive allowable and their estimated system cost. If the system cost is higher than the incentive, GRID Alternatives will make a good faith effort to identify additional funding resources to apply to the project. Applicants will also be advised of the financing gap and offered the opportunity to pay it out-of-pocket. In a case where GRID Alternatives cannot identify additional funding sources and the applicant cannot contribute, the project may not be able to be reserved and contracted.
6. The Applicant will receive notification from the Program Manager upon completion of the system design and after verifying that all funding is in place to cover the system cost. At this point, the Applicant will set up a contract signing appointment with the Program Manager's staff and confirm the incentive reservation

All reservations must be made prior to December 31, 2021. The Applicant is encouraged to have the installation completed within eighteen months of the reservation date. If the installation is not completed within eighteen months of the reservation, the Applicant may submit a written request for a one-time extension by another six months. All installations must be completed by September 30, 2022, to receive the SASH 2.0 Program incentive payment. Approval of a request for a change in Reservation Expiration Date will not change or modify any other reservation condition.

Incentive funds are not reserved until the SASH 2.0 Program Manager receives all information and documentation required for the Reservation and the project is approved.

5. INCENTIVE PAYMENT PROCESS

SASH 2.0 Program incentive payments are issued by the investor-owned utilities (IOUs) and not by the Program Manager. The three IOUs are PG&E, SCE, and SDG&E. Funding may be reserved for Applicants who have committed to purchase and install an eligible solar energy system at a given Site. A funding reservation provides the purchaser assurance that the reserved funds will be available when the payment claim is made.

5.1 Incentive Payments

The SASH 2.0 Program Manager is the only entity authorized to initiate SASH 2.0 Program incentive payments from the IOUs. The SASH 2.0 Program Manager will track the status of each project and will submit the Applicant's incentive claim to the appropriate IOU only after the solar system is purchased, installed, interconnected, and inspected. Since the Program Manager tracks the status of each project and the incentive payment request is automatically generated upon completion or receipt of all required documentation, the Applicant is not required to submit a formal incentive payment request.

Incentive payments cannot exceed actual equipment and installation costs. The Program Manager will ensure that total incentives do not exceed out-of-pocket expenses for the Applicant. The Program Manager reserves the right to withhold final incentive payment pending review and approval of project cost and receipt of supporting documentation.

The Program Manager will require the completion of all project milestones including the application process, energy efficiency program referral PV-system installation, field inspection, and interconnection. Once completion of these project milestones is confirmed, the SASH 2.0 Program Manager will issue an incentive payment request to the appropriate IOU.

The Applicant or designated payee will receive the incentive payment directly from the IOU. The lump sum EPBB incentive payment issued constitutes final and complete payment.

5.2 Assignment of Incentive Payment to Another Party

The Applicant is automatically the designated payee of the incentive payment. The Applicant may assign his or her right to receive the payment to another party by completing a Payment Assignment Form and submitting it to the SASH 2.0 Program Manager prior to the payment of the incentive. The Payment Assignment Form requires original signatures or electronic signatures with a third-party verification. Payment will be made to the Applicant or assigned party (as designated), as indicated on the Payment Assignment Form, and will be mailed to the address provided. A payment assignment form can be requested from the SASH 2.0 Program Manager.

5.3 Existing PV Systems

The SASH 2.0 Program incentive is only available for qualifying PV systems installed after the initial SASH 2.0 Handbook submission date. Under no circumstances will a SASH 2.0 incentive payment be made to systems installed before this date or under another CSI incentive program, even if the customer may have qualified for the SASH 2.0 Program incentive.

The CSI general market program, the MASH 2.0 Program, and the SASH 2.0 Program are mutually exclusive CSI Programs and incentive payments can be collected from only one CSI Program per installed system.

Exhibit A EPBB – Manual Design Factor Calculation

The SASH 2.0 Program requires a minimum Design Factor of 85%. The Design Factor calculation for the SASH 2.0 Program must be calculated without the geographic correction. The calculation requires multiplying:

- 1) the actual Design Correction [Dcorr]percentage (as calculated by the EPBB calculator)
- 2) a Geographic Correction [Gcorr] of 100% (may be different from EPBB calculator value)
- 3) the actual Installation Correction [Icorr] percentage (as calculated by the EPBB calculator)

***Example:** The following example illustrates how to manually calculate the SASH 2.0 Program Design Factor using data from the EPBB Calculator's results page (see Image 1). Also, note that the incentive rate calculated by the EPBB Calculator does not apply to the SASH 2.0 Program (see Section 3 for SASH Program incentives).*

Manual Calculation for SASH 2.0-approved Design Factor (see Image 1 below):
 0.97046 (actual Dcorr) \times 1.00 (modified Gcorr) \times 0.98840 (actual Icorr) = 95.92% .
Since the Design Factor is over 85%, this system would be eligible for the SASH 2.0 Program incentive.

Summer kWh	1,150 (e)
at optimal tilt	1,185 (f)
facing south at optimal tilt	1,185 (g)
CEC-AC Rating	1.135 kW
Design Correction ²	97.046%
Geographic Correction ³	96.847%
Installation Correction ⁴	98.840%
Design Factor⁵	92.896%
CSI Rating⁶	1.054 kW
Incentive Rate	\$1.55/Watt
Incentive⁷	\$1,634

Dcorr: use actual value

Gcorr: use 100%

Icorr: use actual value

*IMAGE 1: this is a partial screenshot of an EPBB Calculator results page.