



## Single-family Affordable Solar Homes (SASH) Program

### Q3 2010 Program Status Report

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The SASH Program is part of the California Solar Initiative and funded by California utility ratepayers under the auspices of the California Public Utilities Commission.

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# Single-family Affordable Solar Homes (SASH) Program

## 1. Program Overview

The Single-family Affordable Solar Homes (SASH) Program is one of the California Solar Initiative's two low-income programs. GRID Alternatives, a non-profit solar contractor, is the statewide Program Manager for the SASH Program. The SASH PV-solar incentive is available to qualifying low-income homeowners in the Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas and Electric territory (SDG&E) service territories.

The SASH Program is uniquely designed to be a comprehensive low-income solar program. In addition to providing aggressive incentives, SASH is structured to promote or provide energy efficiency, workforce development and green jobs training opportunities, and broad community engagement with low-income communities. There is no other low-income solar program in California that has such a diverse range of benefits for low-income communities. It is truly a first-of-its-kind solar program.

The SASH incentive provides low-income families with free or low-cost PV-solar systems which significantly reduces household energy expenses and allows families to direct those savings toward other basic needs. GRID Alternatives' volunteer-based installation model has proven to be a highly efficient and low-cost model that makes solar even more affordable for low-income homeowners. In addition to being the primary installer for SASH, GRID provides education on and access to energy efficiency programs which further reduces a household's energy consumption and expenses.



In implementing the SASH Program, GRID Alternatives provides opportunities for local volunteers to assist with installations, to engage their communities, and to share their diverse experiences. Currently, GRID has thousands of volunteers statewide to help promote and install solar in low-income communities. GRID requires its volunteers to participate in a solar orientation program that educates these potential solar adopters about PV-solar and energy efficiency. This basic consumer education program will help further the broader CSI goals of promoting the use of PV-solar technology statewide and helping build broad-based community support for solar electric technologies and energy efficiency.

Finally, SASH provides a foundation for promoting and building a sustainable solar industry in California by incorporating a workforce development and job training component into the program. GRID partners with local job training programs to give their trainees an opportunity to get hands-on installation experience. The SASH Program also promotes partnerships between solar contractors and local workforce development programs by including a job training requirement for all sub-contracted SASH projects. This becomes a double benefit to low-

income communities since many green-collar job trainees come from the same communities that the SASH Program aims to serve.

## 2. Background

In D.06-01-024, the California Public Utilities Commission (“the Commission”) adopted the Staff proposal to set aside a minimum of 10% of CSI Program funds for projects installed by low-income residential customers and affordable housing projects. In 2006, the California Legislature codified this requirement in Senate Bill (SB) 1 and Assembly Bill (AB) 2723. Subsequently, in D.06-12-033, the Commission directed the Program Administrators (PAs) to conform the CSI Program to SB 1<sup>1</sup> and AB 2723<sup>2</sup> requirements and directed that 10% of the total ten-year CSI budget would be reserved for the low-income residential solar incentive programs that are now referred to as the Single-family Affordable Solar Homes (SASH) and Multifamily Affordable Solar Housing (MASH) Programs. GRID Alternatives was selected as the statewide Program Manager for the SASH Program.

In D.07-11-045, the Commission established the \$108.34 million SASH Program as a component of the CSI Program. The SASH Program provides incentives “for homeowners who occupy their homes and meet the definition of low-income residential housing established in Public Utilities Code Section 2852.”<sup>3</sup> The Commission adopted an incentive structure that provides a fully-subsidized 1kW PV-solar system to “very-low income” households, and a partial-subsidy to qualified “low-income” households.

The overall goal of the SASH program is “to provide existing low-income single family homes with access to photovoltaic (PV) systems to decrease electricity usage and bills without increasing monthly household expenses.”<sup>4</sup>

The SASH Program will operate either until December 31, 2015, or when all funds available from the program’s incentive budget have been allocated, whichever event occurs first. Public Utilities Code Section 2852(c)(3) requires that any program dollars remaining unspent or unencumbered on January 1, 2016, are to be used for Low Income Energy Efficiency programs.

### 2.1. Incentive Structure

SASH installations will be provided a one-time payment under the Expected Performance Based Buydown (EPBB) structure to help reduce the homeowner’s upfront cost their PV-solar installation. The SASH Program only offers the EPBB incentive and does not offer the Performance Based Incentive (PBI).

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<sup>1</sup> SB 1 (Murray & Levine), *Chapter 132, Statutes of 2006*, sets forth specific CSI program requirements regarding program budget, conditions for solar incentives, and eligibility criteria

<sup>2</sup> AB 2723 (Pavley), Chapter 864, Statutes 2006, required the Commission to ensure that not less than 10% of the CSI funds are used for the installation of solar energy systems on low-income residential housing and authorized the Commission to incorporate a revolving loan or loan guarantee program for this purpose.

<sup>3</sup> D.07-11-045, Appendix A, p.1

<sup>4</sup> D.07-11-045, Appendix A, p.1

The SASH Program has seven incentive payment levels based on the applicant’s income compared to the area median income (AMI), tax liability, and CARE-eligibility. The incentive levels will remain constant throughout the life of the SASH Program and will not decrease with program demand like the CSI general market program incentive structure.

Fully Subsidized (Free) Systems

A maximum of twenty percent (\$21,668,000) of the total SASH Program funds are available for full-subsidies to qualifying households. The SASH Program provides a full-subsidy for 1 - 1.2 kW systems to owner-occupied households that qualify as “extremely low income” or “very low income” (i.e., up to 50% of area median income per the Health and Safety Code definitions referenced in P.U. Code 2852). This subsidy is capped at a maximum of \$10,000 per qualifying household. A household that qualifies for a full subsidy can either take the full subsidy for a 1– 1.2 kW system or take a partial subsidy, as described below, for a larger system.

Partially Subsidized Systems

The partial-subsidy is available to customers whose total household income is below 80% of the area median income. The partial-subsidy is calculated on a sliding-scale that is based on the homeowner’s tax liability and the customer’s eligibility in the California Alternative Rates for Energy (CARE) program. If the Applicant qualifies for the CARE program but is not currently enrolled, the Program Manager will work with the Applicant to enroll them into CARE. The table below exhibits the sliding-scale incentive rates:

**Table 1: Incentive Rates, \$/W**

| <b>Federal Income Tax liability</b> | <b>CARE-eligible</b> | <b>Not CARE-eligible</b> |
|-------------------------------------|----------------------|--------------------------|
| <b>\$0</b>                          | \$7.00               | \$5.75                   |
| <b>\$1 to \$1,000</b>               | \$6.50               | \$5.25                   |
| <b>&gt;\$1,000</b>                  | \$6.00               | \$4.75                   |

**2.2. Eligibility**

To qualify for the SASH 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, **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 held with a public entity or a qualifying 501(c)(3) 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 held with a public entity or a qualifying 501(c)(3) nonprofit affordable housing provider.

### 2.3. Budget

The SASH Program budget is \$108.34 million. The program will be funded by Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) according to the following percentages:

**Table 2: SASH Budget Allocations by Utility Territory**

|                                      | PG&E  | SCE  | SDG&E | Total  |
|--------------------------------------|-------|------|-------|--------|
| <b>Budget %</b>                      | 43.7% | 46%  | 10.3% | 100%   |
| <b>Total Budget (\$ in millions)</b> | 47.34 | 49.8 | 11.2  | 108.34 |

The Program Manager shall ensure that the \$108.34 million is allocated as follows across program functions:

**Table 3: SASH Budget Allocations by Program Functions**

|                               | Budget, % | Budget, \$    | Expensed / Encumbered thru Q3 2010 |
|-------------------------------|-----------|---------------|------------------------------------|
| <b>Incentives</b>             | 85%       | \$92,089,000  | \$10,520,000                       |
| <b>Administration</b>         | 10%       | \$10,830,000  | \$1,810,008                        |
| <b>Marketing and Outreach</b> | 4%        | \$4,330,000   | \$363,951                          |
| <b>Evaluation</b>             | 1%        | \$1,091,000   | Budget resides w/ CPUC             |
| <b>Total</b>                  | 100%      | \$108,340,000 | <b>\$13,784,959</b>                |

### 3. Program Status – to date

By the end of 2010, GRID anticipates that the SASH Program will have installed or reserved a total of 400-450 solar installations totaling around \$7.8M in incentives and ~1.2MW (CEC-AC). These targets were established in the SASH Implementation Plan. **At the end of Q3 2010, over 600 SASH applications total over 1.6MW and over \$10M in incentives, which exceed the Program’s annual 2010 targets.**

In Q3 2010, the SASH Program experienced steadfast growth as demonstrated by significant increases in the number of clients served, the amount of incentives utilized, and the volume of kilowatts installed throughout the state. Some of the noteworthy progress in Q3 2010 can be attributed to the following achievements: increasing installations through the Sub-Contractor Partnership Program; improving marketing and outreach efficiency; expanding regional capacity by adding staff for new offices; fostering new relationships and strengthening existing partnerships with volunteers, job training programs, and municipalities; and broadening the affordable housing client database.

By the end of Q3 2010, 245 PV-systems have been installed and interconnected, 129 projects have been reserved and awaiting installation or interconnection, and another 267 applications statewide are under review by GRID’s construction staff and sub-contracting partners to determine if a system design meets the 95% Design Factor requirement.

Because GRID Alternatives is a mission based non-profit organization with strong ties to the low-income communities that SASH aims to serve, we have listened to the needs of families and responded to the downturn in the economy by making nearly all 245 completed SASH installations free to the homeowners. GRID accomplished this by creatively leveraging funding from local jurisdictions, project sponsorships, and general fundraising. For example, in Q3 2010, GRID began developing exciting new partnerships with municipalities to incorporate gap financing options into home improvement and redevelopment loans in the Inland Empire region. Since the SASH incentive does not cover 100% of installation costs, identifying gap financing options remains critical to achieving the long term goals of SASH.

The table below summarizes the status of all SASH applications through Q3 2010.

**Table 4: SASH Applications by Status and Service Territory**

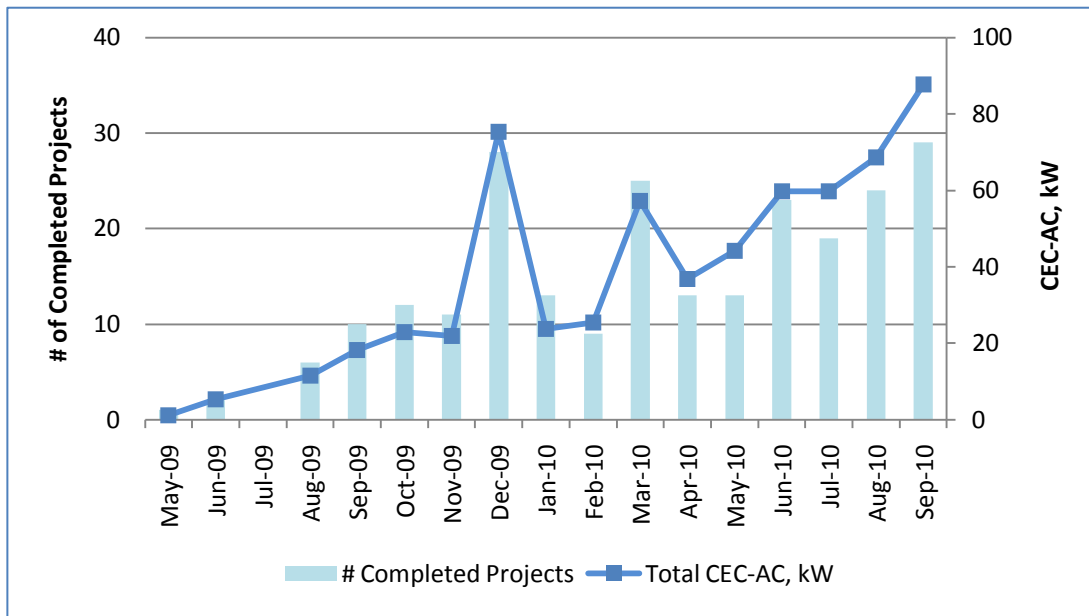
| Application Status                             | Number of Applications |     |       |        | Total kW, (CEC-AC) | Total Incentives, \$ millions | Avg # Days from current step to Step 3 |
|--|------------------------|-----|-------|--------|--------------------|-------------------------------|--|
|  | PG&E                   | SCE | SDG&E | Totals |                    |                               |  |
| STEP 1:<br>Applications under review           | 122                    | 124 | 21    | 267    | 667.5*             | 4.01*                         | 106                                    |
| STEP 2: Confirmed<br>Applications/Reservations | 57                     | 54  | 18    | 129    | 369.46             | 2.39                          | 58                                     |
| STEP 3:<br>Completed/Installed                 | 128                    | 64  | 53    | 245    | 632.57             | 4.12                          | --                                     |

Data collected 10/12/10

\* Step 1 system sizing (kW) and incentives (\$) are estimates based on an average system size of 2.5kW and incentive level of \$6.00/W. System designs are not completed until the Applicant is confirmed to meet all other program requirements. The majority (80-90%) of projects in Step 1 will receive Step 2 reservations.

Chart 1 below shows the steady and incremental growth of interconnected projects each month since the beginning of the Program. GRID anticipates that growth will continue through 2010 and 2011 with monthly totals doubling by the same time next year.

**Chart 1: Completed Projects per Month**



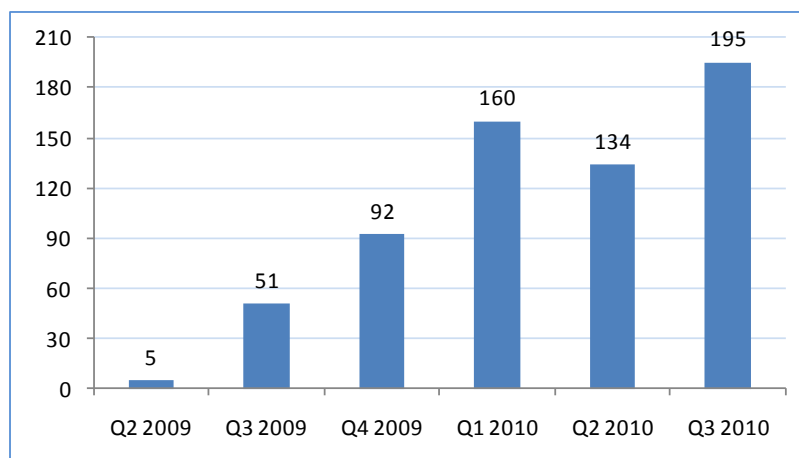
### 3.1. Marketing and Outreach

GRID currently has five offices located in Oakland (PG&E), Carson (SCE), San Diego (SDG&E), Fresno (SCE/PG&E), and San Luis Obispo (SCE/PG&E). GRID also has additional outreach capacity in the Inland Empire region with the full office expected to open in early 2011. Per the SASH Implementation Plan, GRID hired a Central Coast Regional Director in Q3 2010 and anticipates fully staffing the office by the end of the year. Most projects reserved in the Central Coast and Inland Empire will be installed through the Sub-Contractor Partnership Program until GRID establishes construction teams in these new regional offices.





**Chart 2: Applications Received per Quarter**



In Q3 2010, GRID received 195 applications bringing the total number of SASH applications to 636 – a sufficient pool of applicants to ensure SASH’s 2010 target of 400-450 installations/reservations will be met or exceeded. GRID received the most SASH applications of any quarter in Q3 2010, and from the greatest number of different counties -- indicating both that the marketing and outreach strategies GRID has developed through extensive experience working in low-income communities continue to be effective; and, that SASH is gaining exposure and expanding its scope throughout the state.

GRID worked with local housing departments and low-income housing developers to do targeted marketing to qualified P.U. Code 2852 homes. GRID continued to leverage its existing trusted relationships with key community partners to spearhead outreach efforts in low-income communities. This strategy has proven to be successful in these communities where individuals may be predisposed to mistrust new programs or organizations. GRID also continued to garner support and participation from the first-adopters of the SASH Program to influence their neighbors and acquaintances to apply for SASH. To illustrate, after GRID installed nine SASH projects in one day in West Oakland at the Bay Area Solarthon event in July 2010, seven new SASH clients were identified who witnessed their neighbors’ installations, and afterwards applied themselves for a free or low cost PV-solar system through SASH. The three Solarthon events that GRID has orchestrated in each quarter of 2010 also provide broad exposure for SASH and help build the brand recognition requisite for the Program’s long-term success.

GRID’s Oakland office was pleased to host Commissioner Timothy Alan Simon at its Solarthon event and the CPUC Staff at an installation in September. Involving neighbors, volunteers, and civic supporters at SASH installations helps build the SASH brand recognition on-the-ground in low-income communities, and for a wide audience of stakeholders.

### **3.2. Sub-Contractor Partnership Program**

GRID Alternatives continued developing the Sub-Contractor Partnership Program (SPP) in Q3 2010 and has created a strong foundation for the future of the program. In Q3 2010, over 30 SPP installations were completed and over 90 SPP project bids were accepted and currently

await installation. GRID anticipates steady growth in sub-contracted projects throughout 2010, totaling 100-150 SPP installations by the end of 2010.

Due to the overwhelming interest by private contractors to participate in the Sub-Contractor Partnership Program, GRID has opted to temporarily close the Program to new applicants starting 11/01/10. Currently, there is a high level of participation in the program and closing the program to new applicants will allow GRID to work with existing SPP partners to streamline the program and develop the strong partnerships requisite for the program's long-term success. GRID will provide all current sub-contractors in the Program an opportunity to bid on SASH Projects, and potentially re-open the Program to new applicants in the future if needed.

During the SPP process GRID Alternatives will be responsible for all marketing, outreach, application inspection, coordination of third-party system inspection, homeowner training and follow-up. The sub-contractor will be responsible for the PV-solar system design and installation, warranties, permitting and building inspection, and utility interconnection.

The SPP program promotes partnerships between solar contractors and local workforce development programs by incorporating a job training requirement for all sub-contracted SASH projects. This becomes a double benefit to the low-income community since many solar job trainees come from the same communities that the SASH Program aims to serve. GRID encourages sub-contractors to hire from the local communities whenever possible and provides contact lists of eligible local programs to assist in this endeavor.

### 3.3. Volunteer and Workforce Development

GRID's unique volunteer-based installation model has made every SASH project a workforce development opportunity for a broad range of professional interests. These volunteer and training opportunities will help create the solar market transformation sought through the California Solar Initiative. These opportunities also create a well-informed public and proof that the technology can be adopted by everyone in every community within California. Over 3,000 volunteers or job trainees have already participated in a SASH installation and thousands more will help bring the SASH Program and solar energy to low-income families throughout the state and will prove solar is a technology for all communities.

Volunteers and job trainees are the backbone to GRID's installation model and will be an important part of the overall success of the SASH program. GRID reserves 20% of its in-house installations exclusively for workforce development programs, and the SASH Program has provided over 2,700 hours of hands-on experience to solar job trainees, further strengthening California's solar industry. While the volunteer labor is crucial to keeping installation and homeowner out-of-pocket costs at a minimum, there is also an inherent



experiential and educational value that this volunteer experience gives to these potential solar adopters and passionate solar advocates.

GRID Alternatives has incorporated “green job” training and workforce development initiatives into the SASH Program with the following initiatives:

- **Integration of hands-on solar installation experience into low-income job training programs.** GRID Alternatives partners with existing job training organizations to incorporate GRID Alternatives’ volunteer-based installation projects into their construction training curricula. GRID Alternatives dedicates 20% of its internal installations for these trainees to build hands-on experience with real-world solar PV installations that have conditions and requirements comparable to what they would encounter in private industry.
- **GRID Team Leader and ongoing hands-on opportunities of job trainees.** In addition to reserving entire installations for job training partnerships, GRID gives individual job trainees priority to participate on volunteer installations. Additionally, job trainees can participate in GRID’s “Team Leader Program” that provides leadership roles on GRID’s volunteer installations. These opportunities give a job trainee more opportunities to get the critical hands-on PV-installation experience required by most PV-solar contractors.
- **Paid work and job placement opportunities for training program graduates.** Students or graduates of these job training organizations may be provided with short-term paid work and opportunities for long-term job placement in the solar PV industry through our Subcontractor Partnership Program. These trainees will work alongside experienced installers from for-profit companies to install SASH systems, reducing total installation costs for the homeowner while providing the job trainees and the contractors with extended, paid “field interviews” where the trainees can be evaluated for available long-term installer positions with the company.
- **Innovative new partnerships between private industry and community-based job training organizations.** The Sub-Contractor Partnership Program’s job training requirement helps foster new partnerships between for-profit sub-contractors with workforce development programs, thus increasing the breadth and impact of SASH on the solar industry’s job development. For example, one of GRID’s sub-contracting partners is developing an innovative PV-training component for a local youth agency in Monterey County that provides hands-on construction training to disadvantaged youth. Providing these young adults not only a paid job but also one in the rapidly growing CA solar industry creates tangible benefits for the local community and provides opportunities for this future generation of solar installation specialists to gain valuable experience.
- **General volunteering opportunities.** Over 5,200 volunteers have completed GRID’s volunteer/solar orientation. Since the inception of the SASH Program, over 2,800 volunteers participated in GRID’s educational solar orientation program and worked directly on SASH installations. The orientation program allows GRID to promote solar energy and educates volunteers on solar technologies, the importance of energy efficiency, and the CSI incentive programs.

Providing low-income individuals with hands-on solar installation experience and avenues to employment in the growing solar PV installation industry is an important part of GRID Alternatives' mission to empower communities in need through renewable energy. GRID Alternatives currently partners with a growing number of low-income job training organizations interested in providing green-collar job training to their constituents. These programs need to provide real-world, hands-on experience for their trainees. Our volunteer-based installation model lends itself perfectly to this need – our projects serve as a solar PV version of a teaching hospital, where trainees can “learn by doing” in the field and gain valuable exposure, experience and skills that will significantly increase their employability.

The Sub-Contractor Partnership Program requires all contractors to use current or recent solar job trainees on each sub-contracted SASH installation. We hope this will continue to propel the California solar industry forward and provide long lasting benefits beyond the scope of the CSI and SASH programs' lifecycles.