



Single-family Affordable Solar Homes (SASH) Program

Q4 2009 SASH Program Status Report for CPUC

January 20, 2010



Table of Contents

Table of Contents.....	1
1. Executive Summary.....	2
2. Background	3
2.1. Incentive Structure.....	3
Table 2.1: SASH Incentive Rates in \$/W	
2.2. Eligibility.....	4
2.3. Budget.....	5
Table 2.2: SASH Budget Allocations by Utility Territory.....	5
Table 2.3: SASH Budget Allocations by Program Functions.....	5
Table 2.4: SASH Program Expenditures to December 31, 2009.....	6
3. Q4 2009 Program Status.....	6
3.1. Applications, Installations, Incentives.....	6
Table 3.1: SASH Applications by Status and Service Territory (2009).....	6
Chart 3.1: SASH Applications per Quarter (2009).....	7
3.2. Sub-Contractor Partnership Program (SPP).....	6
3.3. Volunteer and Workforce Development.....	8
3.4. Energy Efficiency.....	8
Table 3.2: LIEE Enrollment.....	9
3.5. Marketing and Outreach.....	9
3.6. Affordable Housing Database.....	9
Table 3.3: Affordable Housing Data.....	10
4. Other Program Considerations.....	10
4.1. 95% Design Factor Requirement.....	10
4.2. Gap Financing.....	11

Single-family Affordable Solar Homes

1. Executive Summary

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 and to provide energy efficiency, workforce development, green jobs training, 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 over 9,000 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 SASH Program. GRID partners with local job training programs to give their trainees an opportunity to get on-the-roof, hands-on experience installing PV-solar. 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 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 1¹ and AB 2723² 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.”³ 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.”⁴

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 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).

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.

¹ 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

² 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.

³ D.07-11-045, Appendix A, p.1

⁴ D.07-11-045, Appendix A, p.1

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 2.1: Incentive Rates, \$/W

Federal Income Tax liability	CARE-eligible	Not CARE-eligible
\$0	\$7.00	\$5.75
\$1 to \$1,000	\$6.50	\$5.25
>\$1,000	\$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 2.2: SASH Budget Allocations by Utility Territory

	PG&E	SCE	SDG&E	Total
Budget %	43.7%	46%	10.3%	100%
Total Budget (\$ in millions)	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 2.3: SASH Budget Allocations by Program Functions

Administration	10%
Marketing and Outreach	4%
Evaluation	1%
Incentives	85%

The following table breaks down SASH expenses through December 31, 2009 by Task:

Task 1: Develop & Implement a final program implementation plan

Task 2: Identify, establish, and generate partnerships with stakeholders

Continue developing program relationships with statewide housing departments, affordable housing non-profits, program inspectors, IOUs, installer community, equipment suppliers, and organizations providing homeowner funding assistance.

Task 3: Create & execute a targeted marketing and outreach campaign

Continue working with marketing subcontractor to develop statewide marketing strategy and program branding. Continue direct homeowner outreach. Work with CHPC to identify eligible affordable housing.

Task 4: Develop and regularly update a system for program monitoring and evaluation.

Establish overall project tracking tools and financial accounting procedures and reports.

Update client/project database regularly.

Table 2.4: SASH Program Expenditures to December 31, 2009

Administration (Tasks 1, 2, 4)	\$851,542
Marketing and Outreach (Task 3)	\$179,719
Incentives	\$1,371,464

3. Q4 2009 Program Status

In Q4 2009, the SASH Program experienced incredible structural growth and made significant progress in key areas including the Sub-Contractor Partnership Program; marketing and outreach efficiency; volunteer and job training/workforce development; increasing the affordable housing client database; the successful completion of all third-party inspections, and, completing the first installations in GRID's Central Valley office. There were considerable improvements to public access of program information; energy efficiency auditing; LIEE qualification and enrollment, and overall program implementation. Throughout the expansion of services to low income homeowners, GRID Alternatives remained committed to building California's solar industry through its comprehensive, community oriented approach, best exemplified by GRID's increasing volunteer base (9,000+) and by the multiple awards and recognition from homeowners and local organizations. The following Q4 2009 Status Report provides further overview of the program's implementation, achievements, challenges, and forecasts.

3.1. Applications, Installations, Incentives

By the end of Q4 2009, GRID approved and reserved 95 applications with 74 of those projects completed as installed. GRID has another 94 applications statewide that are under review by either the third-party Application Inspector or by GRID's construction staff to determine if a system design meets the 95% Design Factor requirement. Fifteen percent of all accepted applications were reviewed by a third-party Application Inspector (CCSE). To date 100% of the applications have passed inspection.

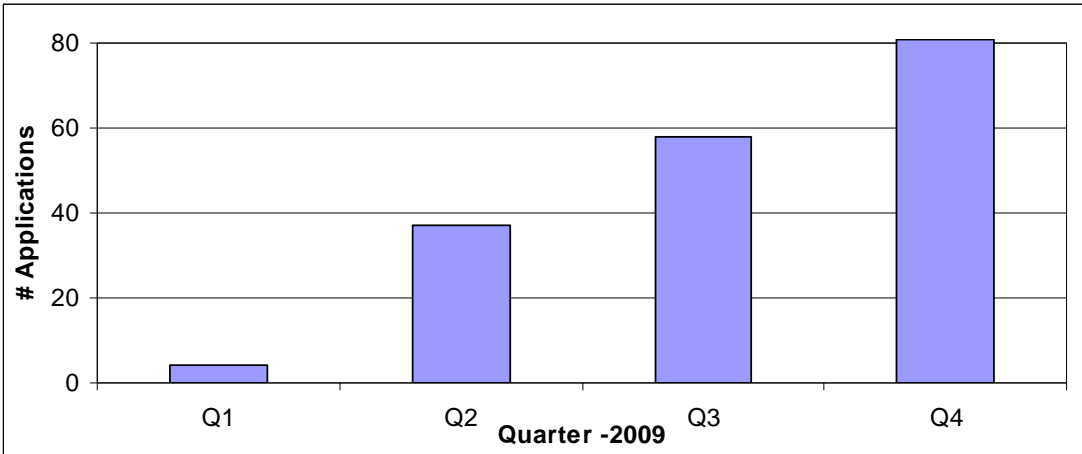
Because GRID Alternatives is a mission based non-profit organization with strong ties to the low-income communities that SASH aims to serve, we have listened to the needs of families and responded to the downturn in the economy by making nearly all 74 completed SASH installations free to the homeowners. GRID accomplished this by leveraging funding from local jurisdictions, project sponsorships, and general fundraising. Sixteen installations qualified for the fully subsidized 1kW system. From GRID’s experience, the non-CARE incentive levels rarely lead to reserved projects since these levels do not provide enough incentive to make solar affordable to the low-income homeowners. These projects are put on hold until gap financing is identified.

Table 3.1: SASH Applications by Status and Service Territory (2009)

Application Status	Number of Applications				Total kW, (CEC-AC)	Total Incentive
	PG&E	SCE	SDG&E	Totals		
STEP 1: Applications under review	53	32	9	94	N/A*	N/A*
STEP 2: Confirmed Applications/Reservations	16	3	2	21	46.92	\$312,009
STEP 3: Completed/Installed	39	17	18	74	162.52	\$1,059,455
All Confirmed Projects	55	20	20	95	209	\$1,371,464
All Active Projects	108	52	29	189	209	\$1,371,464

* System designs are not completed until the Applicant is confirmed to meet all other program requirements.

Chart 3.1: SASH Applications per Quarter (2009)



3.2. Sub-Contractor Partnership Program

GRID Alternatives continued developing the Sub-Contractor Partnership Program (SPP) in Q4 2009 and has created a strong foundation for the future of the program. Contractors are able to apply to the SPP program through GRID’s website.

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

The SPP 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 the low-income community since many solar job trainees come from the same communities that the SASH Program aims to serve. This requirement also has a broader benefit to California's solar industry since it bridges an existing gap between contractors and job training programs and encourages them to form stronger partnerships.

The SPP program is crucial to the success of the SASH program and GRID is taking great care in developing the appropriate procedure for issuing bids and calculating cost standards. The initial SPP projects will be subject to considerable scrutiny and adjustment as the process is evaluated and made more effective. GRID will begin implementing the SPP program beginning with a few pilot projects in early Q1 2010. If any problems arise from these pilot projects, GRID will make the necessary adjustments and will then host a public informational webinar for contractors interested in the SPP program. The webinar will provide a great opportunity for the installer community to learn about the SASH program and its unique structure, to gather information on the SPP program and its guidelines, and to gain a better understanding of the low-income communities SASH serves.

3.3. Volunteer and Workforce Development

Volunteers, job training and workforce development programs are the backbone to GRID Alternatives and the overall success of the SASH program. In 2009, over 11,000 hours of volunteer labor were applied directly to SASH installations. Since GRID reserves 20% of its in-house installations exclusively for workforce development programs, the SASH Program has provided over 2,200 hours of hands-on experience to solar job trainees and California's solar industry. While the volunteer labor is crucial to keeping our installation and homeowner out-of-pocket costs at a minimum, we recognize it is difficult to quantify the experiential and educational value given to the future solar employees, passionate advocates, and these potential solar adopters.

GRID's statewide volunteer pool is currently over 9,000 individuals. In 2009, over 1500 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.

The Sub-Contractor Partnership Program requires all contractors to use 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 program lifecycles.

3.4. Energy Efficiency

Energy efficiency (EE) remains an important part of the SASH program and the overall mission of GRID Alternatives. We have improved our energy efficiency audit practices and now deliver a comprehensive report based on the EE audit tools provided by the IOUs. The audit is conducted regardless of the clients' enrollment in CARE or LIEE. In Q4, 66 SASH-eligible homeowners qualified

and were signed up for LIEE. GRID also signed up additional homeowners for LIEE though they were found to be ineligible for SASH. Though not a requirement for SASH, we are also investigating ways to ensure every SASH system is installed on a client's home that has received or will receive energy efficiency services. This effort will include developing partnership with EE contractors and non-profits to help deliver services to non-LIEE eligible clients.

Table 3.2: LIEE Enrollment

Utility	Q4 2009	Total
PG&E	29	55
SCE	33	46
SDG&E	4	19

3.5. Marketing and Outreach

GRID is taking a multi-pronged approach to educating low-income communities about the benefits of the SASH Program, solar energy, solar jobs and energy efficiency. Whenever possible, GRID is partnering with city agencies, affordable housing developers, job training organizations and homeowners associations to jointly introduce the SASH Program within a particular community. The program infrastructure has become vastly more efficient in Q4, especially in regards to outreach time management and automated tasks in client processing.

GRID continues to proactively examine different models for homeowner outreach. Though GRID's internal outreach capacity can effectively and efficiently serve the SASH Program, GRID is piloting a project with Northern California Indian Tribes that allows a third party to conduct the outreach and installations on the tribes' reserved lands. Since many of the tribes have comprehensive job training programs and installation partnerships in place that will serve their low income communities, GRID's partnership with the tribes is essential to effectively serve these communities. GRID anticipates upwards of 400-500 installations from this partnership.

Before GRID opens its affiliate office in the Inland Empire region, GRID has begun remote outreaching in this area. This will help GRID incorporate rural regions into the program and effectively serve the entire state of California. The majority of these applicants will initially be served through the Sub-contractor Partnership Program (see Section IV below).

GRID recognizes that a comprehensive SASH marketing campaign must reach eligible low-income homeowners, as well as, other stakeholders of the program including contractors, local officials, decision makers, and the general public. In Q1 2010 GRID and the CPUC will work together to develop this comprehensive M&O strategy. Since the first SASH installation, GRID and several SASH projects have been featured in local television news and print media stories and one of our staff was featured on Good Morning America's Jefferson Awards for her dedicated work with low-income families.

3.6. Affordable Housing Database

Developing a statewide affordable housing database is a unique challenge for SASH. GRID Alternatives and the California Housing Partnership Corporation (CHPC) have made significant progress with collecting this information given our strong ties and history working with the affordable housing community, non-profit organizations, and affordable housing developers throughout California.

To date every jurisdiction in SCE and SDG&E territories has been requested to provide GRID/CHPC with P.U. Code 2852 eligible addresses. The number of addresses received has grown to 4,280, more than tripling the total from Q3 2009. This increase is in large part due to the updated P.U. Code 2852 requirements which took effect in October 2009. We will primarily focus Q1 2010 efforts collecting addresses from the remaining jurisdictions in SCE and SDG&E territories, as well as, conducting targeted outreach to jurisdictions in the PG&E territory.

GRID's capacity to organize and process these address has increased substantially in Q4 2009. New outreach and marketing campaigns will be tracked and managed in the coming year as we receive data on the effectiveness of our strategies in particular developments and communities. CHPC and GRID have also expanded the amount of initial information gathered from the cities in order to save administrative labor and to process reliable data throughout the life of the program.

The update to P.U. Code 2852 affordable housing requirement has had a positive impact on the number of households eligible for SASH, however, this requirement may still present a significant challenge for SASH as exemplified by the "Closed Contacts" chart below. In SCE territory, of the 55 jurisdictions reporting data only 27 jurisdictions have responded with P.U. Code 2852-eligible addresses, and 28 jurisdictions responded that their city has no qualifying addresses.

Table 3.3: Affordable Housing Data

Total Contacts			
Cities contacted by GRID/CHPC			
Territory	Total Jurisdictions in Territory	Total Jurisdictions Contacted	Percent Contacted
SCE	180	180	100.00%
SDGE	20	20	100.00%
PGE	214	55	25.70%
Total	414	255	61.59%

Closed Contacts				
Cities replied to GRID/CHPC request for addresses				
Territory	Jurisdictions with Addresses	Jurisdictions with No Qualifying Units	Total Closed	Number of 2852-eligible Addresses
SCE	27	28	55	1400
SDGE	6	--	6	363
PGE	28	15	24	2517
Total	61	85	108	4280

4. Other Program Considerations

4.1. 95% Design Factor Requirement

As mentioned in the Q3 2009 report, GRID has been tracking the applications that were denied or compromised by the 95% Design Factor requirement. We have found that over 18% of SASH applications either fail outright or require costly design alterations to meet this requirement. GRID recommends that the CPUC reconsider the design factor requirement.

4.2. Gap Financing

GRID Regional Directors located in Oakland (Bay area), Fresno (Central Valley), Carson (Greater Los Angeles), and San Diego continue to work with local jurisdictions, developers, non-profit organizations, and private entities to identify and secure financing options that homeowners can leverage if an expense gap exists between the SASH incentive amount and the actual cost of the system. In the Q2 and Q3 2009 SASH Reports, GRID commented on the importance and challenges of identifying cost effective gap financing in order to make SASH projects cash flow positive from day one of the installation.

This past quarter (Q4), it remained evident that the only gap financing acceptable to a vast majority of low-income homeowners is a grant. Loans, including low-interest loans, are not acceptable options for most homeowners. With today's broader economic challenges and uncertainties, homeowners are less willing to take on any form of additional debt. It is also challenging to identify private loan options since the homeowners typically have limited equity or poor credit history.

This reality may pose a significant challenge to SASH's longer-term implementation goals. To address these challenges, GRID continues to look into creative ways to fund gap expenses including direct fundraising, corporate project sponsorship, grants, and loans.

GRID will continue to monitor and track the effectiveness of the current incentive levels and their ability to meet the funding needs for the narrowly defined SASH-eligible homeowner. This data will help the CPUC make policy-based modifications or revised program guidelines if necessary for the success of the SASH Program.