Single-family Affordable Solar Homes (SASH) Program

Q4 2010 Program Status Report

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GRID Alternatives

GO solar CALIFORNIA

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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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[1] and AB 2723[2] 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 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).

[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

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

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: 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 3: SASH Budget Allocations by Program Functions

	Budget, %	Budget, $	**Expensed / Encumbered thru Q4 2010**
Incentives	85%	$92,089,000	$13,280,000
Administration	10%	$10,830,000	$2,134,242
Marketing and Outreach	4%	$4,330,000	$493,278
Evaluation	1%	$1,091,000	Budget resides w/ CPUC
Total	100%	$108,340,000	**$15,907,520**

3. Program Status – to date

For 2010, the targets established in the SASH Implementation Plan include applications totaling 400-450 solar projects, around $7.8 million in incentives, and ~1.2 MW (CEC-AC). **At the end of Q4 2010, over 800 SASH applications have been received, totaling over 2.1MW and over $13 million in incentives, which exceed the annual 2010 targets by 60%.**

In Q4 2010, the SASH Program built upon the steady growth of previous quarters, and continued steadfast expansion as demonstrated by significant increases in the number of applications received, the amount of incentives utilized, and the volume of kilowatts installed throughout the state. Some of the noteworthy progress in Q4 2010 can be attributed to the following achievements: improving overall administrative efficiencies of the Sub-Contractor Partnership Program; expanding marketing and outreach scope; boosting regional capacity by opening a new office; fostering new relationships and strengthening existing partnerships with volunteers, job training programs, and municipalities; and amplifying communication and media capacities.

At the end of Q4 2010, 331 PV-systems have been installed and interconnected, 144 projects have been reserved and awaiting installation or interconnection, and another 325 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 our clients and responded to the slow recovery in the economy by making nearly all 331 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 Q4 2010, GRID continued to develop new partnerships with municipalities to incorporate gap financing options into home improvement and redevelopment loans in the Inland Empire region. GRID also expanded its internal fundraising efforts and received significant corporate and individual donations and new sponsorships, and hired additional development staff throughout the state to focus on individual and corporate giving. In Q4 2010, GRID augmented its website to include an individual giving section, where donors can contribute directly to the purchase of a solar panel for a family and track the savings the family experiences after receiving their generous gift. 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 Q4 2010.

Table 4: SASH Applications by Status and Service Territory

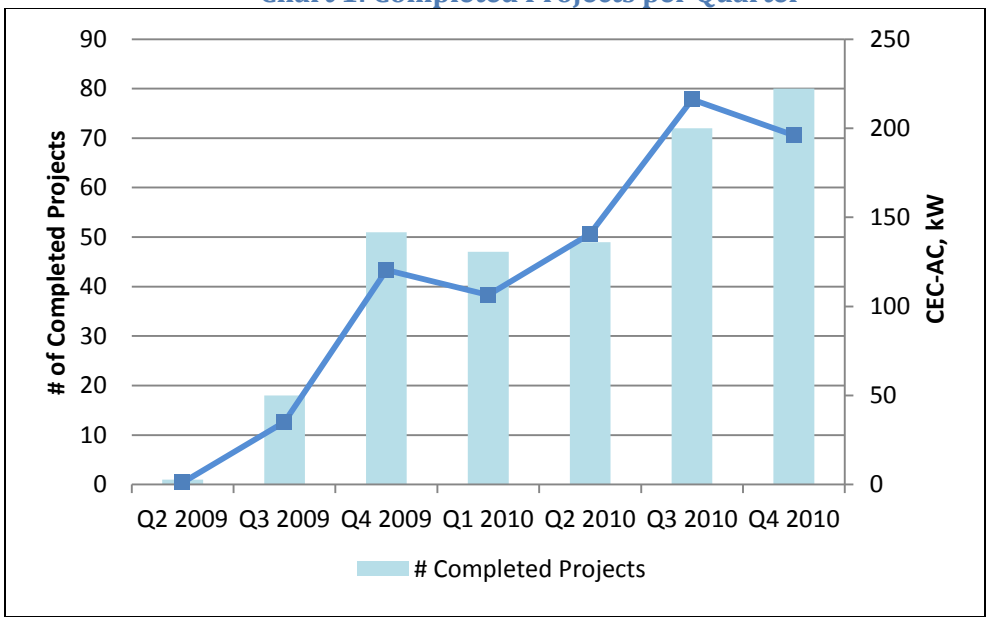
Application Status	Number of Applications				Total kW, (CEC-AC)	Total Incentives, $ millions	Avg # Days from current step to Step 3
	PG&E	SCE	SDG&E	Totals			
STEP 1: Applications under review	143	162	20	325	812.5*	4.88*	108
STEP 2: Confirmed Applications/Reservations	63	65	16	144	444.8	2.87	52
STEP 3: Completed/Installed	171	96	64	331	841.6	5.53	--

Data collected 1/10/11

* 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 quarter since the beginning of the Program. GRID anticipates that growth will continue through 2011 with quarterly totals doubling by the same time next year.

Chart 1: Completed Projects per Quarter

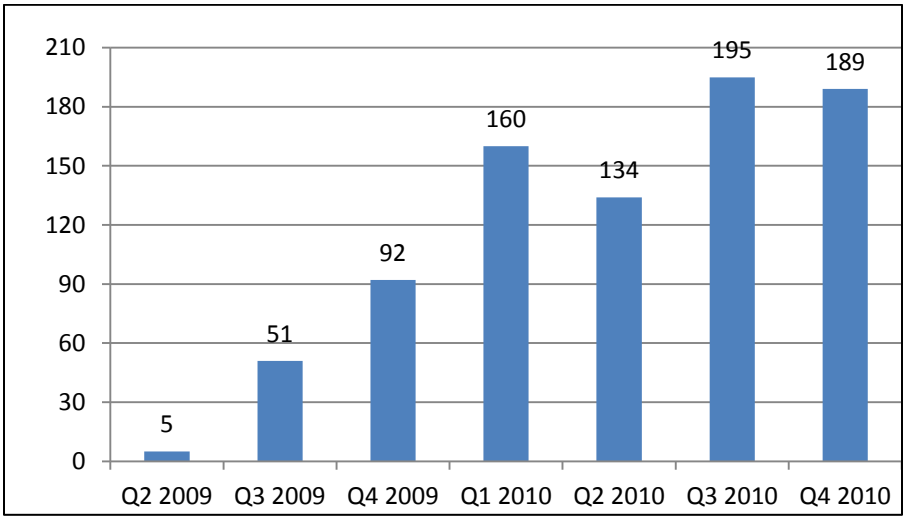


3.1. Marketing and Outreach

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 by the end of Q4, had fully staffed the office with Outreach and Construction teams. Though the majority of projects in the Central Coast area are being orchestrated

through the Sub-Contractor Partnership Program, the new San Luis Obispo office installed its first 2 in-house projects in Q4 2010. Most projects reserved in the Inland Empire will be installed through the Sub-Contractor Partnership Program until GRID establishes construction teams in this new region.

Chart 2: Applications Received per Quarter



In Q4 2010, GRID received 189 applications bringing the total number of SASH applications to 826 – a sufficient pool of applicants to not only exceed the 2010 installation targets, but also to propel the SASH Program into 2011 on-track to meet its robust installation targets for the next year as well. GRID continued to receive a high volume of SASH applications in Q4 2010, and from disparate geographic areas -- indicating both that the marketing and outreach strategies continue to be effective; and, that SASH is gaining exposure and expanding its scope throughout the state.

GRID continued to utilize many of the marketing and outreach methods proven to be effective for recruiting SASH clients and building SASH brand recognition in Q4 2010. These activities included: leveraging partnerships with organizations trusted by low-income homeowners, offering consumer education sessions, and increasing community exposure to the SASH program through events, media and marketing collateral. As in the past, GRID extended partnerships with city and municipal housing departments to connect with homeowners. At GRID's request, housing departments send letters of introduction for the SASH program to local eligible homeowners. This builds the perception of legitimacy of the SASH program within the targeted community. To illustrate, in Q4 2010 GRID's Outreach Staff in the Inland Empire region worked with municipality of Cathedral City to send such letters of endorsement, and the response from eligible homeowners in the area has been tremendous.

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. Individual advocacy for SASH by SASH clients continued to be an important part of GRID recruitment strategy in Q4 2010. GRID's Bay Area office hosted its Volunteer Appreciation Event in December 2010, and several first-adopters of the program shared their experiences and offered support for the SASH Program to the audience of several hundred gathered for the event. The Fresno office held its Solarthon in Q4 2010, and many neighbors who witnessed the SASH installations in their community during the event later applied themselves for the Program. 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 Q4 2010 and has created a strong foundation for the future of the program. In Q4 2010, over 30 SPP installations were completed and over 80 new SPP project bids were accepted and currently await installation. The number of reserved projects exceeds early-2011 projections and will enable 2011 to start off on-track. Also, GRID is confident that recent overarching program changes and improvements in administrative efficiencies will ensure that 2011 will be a successful year for meeting or exceeding SPP installation targets.

Due to the overwhelming interest by private contractors to participate in the Sub-Contractor Partnership Program, GRID temporarily closed the Program to new applicants in November 2010. There is a high level of participation in the program and closing the program to new applicants allows GRID to work with existing SPP partners to streamline the program and develop the strong partnerships requisite for the program's long-term success. If necessary, GRID will re-open the program in the future, but GRID is confident that the existing contractors can handle the volume of projects planned for upcoming quarters.

In Q4 2010, GRID achieved the short-term goal of providing all current sub-contractors in the Program an opportunity to bid on SASH Projects, and those contractors whose prices and designs were accepted have moved into contract stages. After each sub-contractor installs their initial projects, GRID will assess the company in terms of cost competiveness, installation quality, attention to detail, customer service, commitment to workforce development, and overall professionalism, and determine if the sub-contractor meets GRID's standards to remain in the program.

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. Though GRID requires

contractors to hire only one eligible job trainee per installation, some sub-contractors have exceeded this expectation by hiring several eligible trainees per installation. One of GRID's sub-contracting partners has even developed an innovative PV-training component for a local youth agency in Monterey County that provides hands-on construction training to disadvantaged youth. An auxiliary benefit of limiting the number of contractors in the program is that remaining contractors will be awarded more projects, and have an opportunity to hire job trainees for extended periods of time, thereby increasing the workforce development impact of SPP and creating valuable long-term employment opportunities for new hires in CA's solar industry.

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. Nearly 4, 000 individual 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.

GRID ensures that the volunteers on SASH projects are adequately trained in safety and installation techniques and understand the SASH Program, the California Solar Initiative, and the benefits of PV-solar by requiring all volunteers to attend a mandatory 2-hour volunteer orientation. Volunteer orientations are held by each GRID office twice a month, in which attendees learn the basics of solar electric installations, the benefits of solar and general information about the CSI's rebate structure. In Q4 2010, GRID's five offices held 30 orientations and, as customary, the classes were full, and the available spaces on the installations reserved for volunteers filled up quickly and had waiting lists. GRID's five offices also offered team leader trainings in Q4 2010. These sessions are geared toward more experienced volunteers, and many team leaders participate in order to gain valuable resume-building experience that will aid them in their job search in CA's solar industry. These classes educate participants about more advanced PV installation techniques. Participants leave with enhanced awareness of PV, and additional skills for the SASH Program and the solar industry in CA.

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 80% of SASH installations for volunteers and reserves 20% of its in-house installations exclusively for workforce development programs. Through Q4 2010, the SASH Program has provided over 8,000 opportunities for volunteers to become involved and over 1,700 opportunities for hands-on experience to solar job trainees, further strengthening California's solar industry. While the volunteer labor is one factor in 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.

- **Team Leaders may apply their experience toward NABCEP certification.** The North American Board of Certified Energy Practitioners (NABCEP) is widely recognized and accepted as the definitive certification for solar energy professionals. An individual pursuing NABCEP's PV solar installer certification must meet the Board's requirement of having completed two PV solar installations as part of their application. One of the auxiliary benefits for a GRID Team Leader to become "Certified" to lead volunteer SASH installations by completing various GRID Team Leader requirements is that the experience can be applied toward meeting NABCEP's requisite installations. Several of GRID's standout "Certified" Team Leaders have applied their GRID experience toward their successful pursuit of their NABCEP certification, thereby improving their resume for prospective employers and making them more competitive in the job market.

- **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 5,600 volunteers have completed GRID's volunteer/solar orientation. Since the inception of the SASH Program, nearly 3,200 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 one or more 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.