The official R.12-11-005 ruling that released this Staff Proposal is available at:
http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M096/K688/96688965.PDF

Staff Proposal for the Implementation of

Assembly Bill 217

Extending the Low-Income Programs of the California Solar Initiative:

Single-family Affordable Solar Homes (SASH)
Multifamily Affordable Solar Housing (MASH)

July 2, 2014

Prepared by:

California Public Utilities Commission

Energy Division, Customer Generation Programs

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Key Terms and Acronyms

AB: Assembly Bill

ALJ: Administrative Law Judge

CCSE: California Center for Sustainable Energy

CPUC or **Commission**: California Public Utilities Commission

CSI: California Solar Initiative

D.: Decision *(of the Commission)*

ED: Energy Division

IOU: Investor-Owned Utility (*here* PG&E, SCE, SDG&E)

M&E: Measurement & Evaluation

MASH: Multifamily Affordable Solar Housing

PAs: Program Administrators

PG&E: Pacific Gas and Electric

PV: Photovoltaic solar cells

SASH: Single-Family Affordable Solar Homes

SCE: Southern California Edison

SDG&E: San Diego Gas & Electric

SB: Senate Bill

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Overview

The goal of the California Solar Initiative, first established in 2006 by the Public Utilities Commission and codified by the Legislature in Public Utilities Code Section 2851, is to incentivize the installation of nearly 2,000 megawatts (MW) of solar capacity on California homes, apartments and businesses by 2017.[1] The program operates in the territories of Pacific Gas & Electric Company (PG&E), Southern California Edison Company (SCE) and San Diego Gas & Electric Company (SDG&E). By 2014, thanks to significant transformation in the market for solar power, the CSI Program is close to accomplishing its goals several years ahead of schedule.[2]

To implement Public Utilities Code Section 2852[3] and provide access to solar power to low income Californians through higher up-front incentives, in 2007 and 2008 the Public Utilities Commission created the low income programs of the California Solar Initiative. Known as the Single-family Affordable Solar Homes (SASH) and Multifamily Affordable Solar Housing (MASH) programs, by early 2014 these programs have provided or reserved incentive funding for 40 MW of solar power on affordable housing, as defined by Section 2852.[4] Because of the success of these programs in bringing solar power to low income communities, in Assembly Bill 217 (Bradford, 2013) the Legislature extended the SASH and MASH programs with an additional $108 million in funding. [5]

This Energy Division staff proposal serves as the first step in implementing AB 217 at the Public Utilities Commission. Specifically, this proposal lays out a series of policy design recommendations for party discussion and comment in the R.12-11-005 Distributed Generation and California Solar Initiative rulemaking.

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[1] Senate Bill 1 (Murray, 2006). For more information about the California Solar Initiative, including program history, goals, rules and Commission decisions, please visit the CPUC's CSI website at: http://www.cpuc.ca.gov/PUC/energy/Solar/About_the_California_Solar_Initiative.htm

[2] Progress reports on the California Solar Initiative written by or at the behest of the Commission can be found at: http://www.cpuc.ca.gov/PUC/energy/Solar/legreports.htm. Also see Figure 3 below for a line graph detailing recent cost trends in the MASH and SASH programs.

[3] Assembly Bill 2723 (Pavley, 2006). The text of AB 2723 is available at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200520060AB2723

[4] For more information about the Single-family Affordable Solar Homes (SASH) program, including statistics, evaluation reports and Program Administrator information, please visit: http://www.cpuc.ca.gov/PUC/energy/Solar/sash.htm. For more on the Multifamily Affordable Solar Housing (MASH) program, please visit: http://www.cpuc.ca.gov/PUC/energy/Solar/mash.htm. To read Section 2852 of the Public Utilities Code, please visit: http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PUC&sectionNum=2852.

[5] The text of AB 217 is available at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB217

Background

Since the CSI Program began in 2007, the Public Utilities Commission has sought to provide access to solar power to all Californians. As directed by Public Utilities Code Sections 2851 and 2852, the Commission set aside 10% of CSI funding for low income customers, a total of $216 million including administrative costs. By the beginning of 2009, both the SASH and MASH programs were accepting applications.

SASH Program Background

In November 2007, the Commission established the SASH program in Decision (D.) 07-11-045. Its overarching goal, as described in that decision, is "to provide existing owner-occupied low-income single family homes with access to PV systems to decrease electricity usage and bills without increasing monthly household expenses."[6] Because of the inherent challenges in marketing and administering a low income solar incentive program and the Commission's desire to find a Program Administrator with expertise in working with low income communities, in D.07-11-045, the Commission placed a single statewide Program Administrator in charge of operating the program across all three utility service territories. GRID Alternatives, an Oakland-based non-profit organization, was selected through a request for proposals (RFP) process to run the SASH program.[7] Under their administration, and the oversight of the Commission, the primary goals of the SASH program are to:

1) Decrease electricity use by solar installation and reduce energy bills without increasing monthly expenses;
2) Provide full and partial incentives for solar systems for low-income participants;
3) Offer the power of solar and energy efficiency to homeowners;
4) Decrease the expense of solar ownership with a higher incentive than the General Market CSI Program; and,
5) Develop energy solutions that are environmentally and economically sustainable.[8]

Since 2008, GRID Alternatives has worked with thousands of low-income homeowners across California to find potential SASH program applicants. To be eligible for

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[6] D.07-11-045, page 10. This decision determined the original program architecture for SASH, including the process for choosing a Program Administrator. Available at: http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/75400.PDF
D.08-11-005 also determined some of the important administrative rules of the SASH program, namely that low-income incentive recipients could assign their incentive payments to third parties, leading to a combined installer-program manager role for the SASH program administrator. D.08-11-005 is available at: http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/93687.PDF

[7] For more on GRID Alternatives, its mission and its work implementing the SASH program, please visit: http://www.gridalternatives.org/learn/sash

[8] The SASH program's goals and other information can be found on the Commission's SASH page. See note 4 above.

the program, homeowners must be an investor-owned utility customer meeting certain annual income requirements and their residences must meet the definition of low income residential housing set forth in Public Utilities Code Section 2852.[9] In addition to meeting these statutory and program requirements, GRID Alternatives has also engaged thousands of volunteers and hundreds of job trainees in their SASH installations, and raised additional funds from outside donors and supporters to provide SASH systems free-of-charge to participants.[10]

MASH Program Background

In October 2008, the Commission established the MASH program in D.08-10-036.[11] Because of the similarities between applicants and the application process for the MASH and CSI general market programs, the Commission decided to place the three existing CSI Program Administrators in charge of the MASH program as well. They are: PG&E and SCE in their respective service territories, and the California Center for Sustainable Energy (CCSE) in SDG&E's service territory. Under their administration, and the oversight of the Commission, the four primary goals of the MASH program are to:

1) Stimulate the adoption of solar power in the affordable housing sector;
2) Improve energy utilization and overall quality of affordable housing through the application of solar and energy efficiency technologies;
3) Decrease electricity use and costs without increasing monthly household expenses for affordable housing building occupants; and,
4) Increase awareness and appreciation of the benefits of solar among affordable housing occupants and developers.

Unlike the SASH program, which is geared towards single-family homeowners, the MASH program is oriented towards affordable housing property owners and developers. In a sense, MASH property owners and developers are similar to the commercial and non-profit customers of the general market CSI program. Like the SASH program, the eligibility requirements for MASH properties are set forth in Public Utilities Code Section 2852 and the CSI Handbook.[12]

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[9] The SASH program handbook, containing other pertinent program rules and expectations, is available as Appendix D to the CSI Handbook at: http://www.cpuc.ca.gov/NR/rdonlyres/32EE6DE8-F5A6-4CEA-9905-3C59ECB2CD06/0/201405CSI_Handbook.pdf

[10] GRID Alternatives, SASH Q1 2014 Program Status Report, available at: http://www.cpuc.ca.gov/NR/rdonlyres/A1C18110-0465-4DBE-AF22-2E0987866811/0/2014Q1_2014_SASH_Program_Status_Report_5914.pdf

[11] D.08-10-036, which established the MASH program, is available at: http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/92455.PDF

[12] CSI Program Administrators, Multifamily Affordable Solar Housing Semi-Annual Progress Report, January 31, 2014, available at: http://www.cpuc.ca.gov/NR/rdonlyres/C2AEAFEF-DD1A-4798-84A5-51B8287A540B/0/140131_MASHSemiAnnualProgressReport_Final.pdf

Incentive Design and Structure

Due to the higher installation costs for single-family solar systems, on a per-watt basis, SASH incentives are higher than those in the MASH program. Both programs use the Expected Performance-Based Buydown (EPBB) method of providing incentives, which is an up-front capacity-based incentive payment paid upon the successful completion of the solar project. Unlike the CSI general market program, which has a declining incentive model whereby the amount of per-watt capacity rebates decline as the program reaches installation milestones, the low income programs do *not* have a fixed schedule for incentive step-downs. Some program modifications were made in D.11-07-031, issued in July 2011 by the Commission, which included a reduction in MASH incentive levels.[13]

Program Progress and Achievements Since Launch

Since their respective launches in 2008 and 2009, the SASH and MASH programs have provided or reserved over $160 million in incentives to solar projects serving low income communities. Approximately 40 MW of solar capacity has been or will be installed, with some funding still remaining in certain areas in the SASH program. Table 1 below provides an overview of the projects either completed or reserved to-date in the SASH and MASH programs. Figures 1 and 2 provide annual capacity totals for the two programs by Program Administrator. Figure 3 shows installed cost trends in the programs since the beginning of the MASH program in 2009. At this point, nearly all of the combined incentive budgets of the SASH and MASH programs have been committed to projects, with only a fraction of funds held in reserve or still available for new applicants. As of April 2014, the MASH program has closed its ample waitlist to new applications, and the SASH program is beginning to exhaust its funding in some areas of the state.

Table 1. MASH and SASH Figures by Program Administrator

MASH and SASH Project Figures[14] *by Program Administrator as of May 2014*	**Number of Systems Completed or Reserved**	**Total PV Capacity** *[kW, CEC-AC]*	**Total Incentive Amount** *[$]*	**Total System Costs** *[$]*
MASH Program – 95% Reserved				
California Center for Sustainable Energy	41	2,602	$9,746,363	$16,624,156
Pacific Gas & Electric	207	13,768	$39,929,502	$85,043,782
Southern California Edison	140	12,652	$40,593,216	$78,563,024
MASH Total	*388*	*29,022*	*$90,269,081*	*$180,230,962*
SASH Program – 76% Reserved				
GRID Alternatives	3,797	11,475	$69,838,364	$72,757,011

[13] D.11-07-031, California Solar Initiative Phase One Modifications, available at: http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/139683.PDF

[14] Unless otherwise noted, all statistics in this report come from the CSI Working Data set available on the California Solar Statistics webpage, or from the most recent MASH and SASH Program Administrator reports.

Figure 1. Completed MASH Capacity by Year

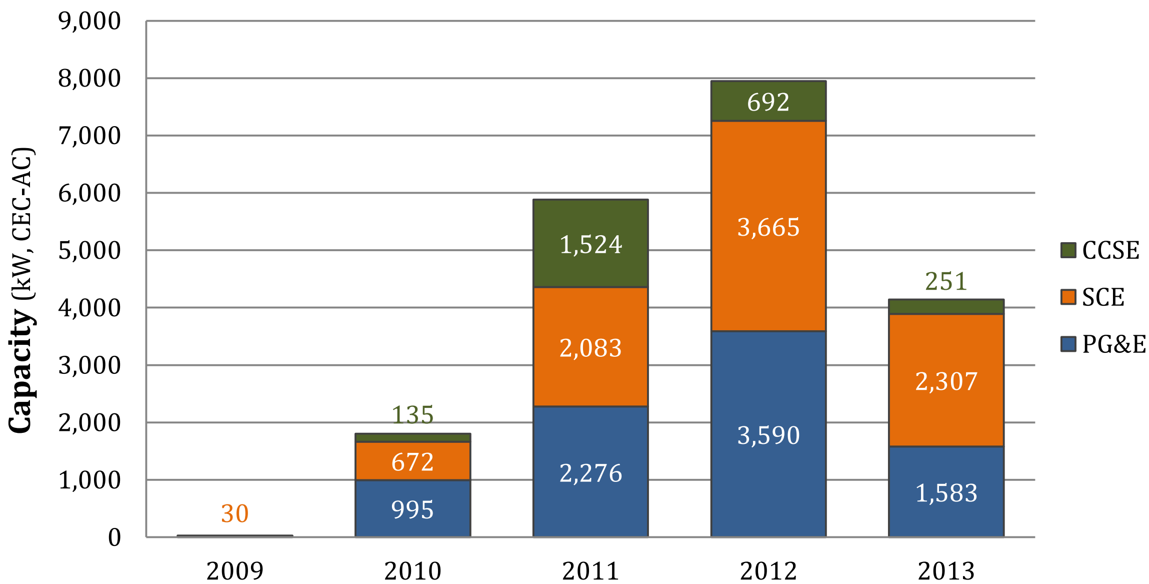


Figure 2. Completed SASH Capacity by Year

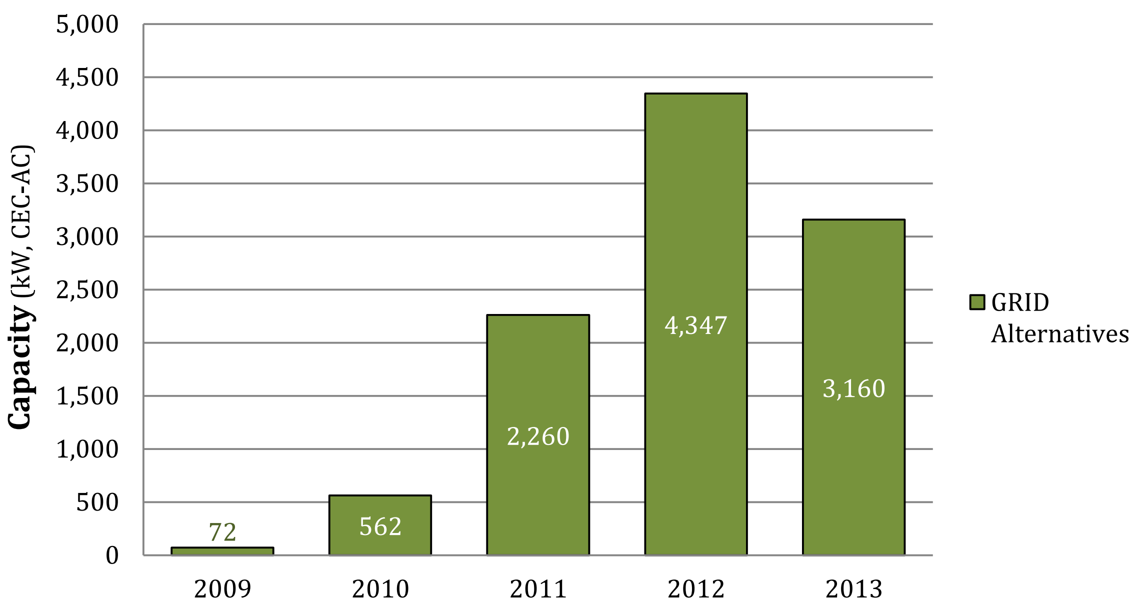
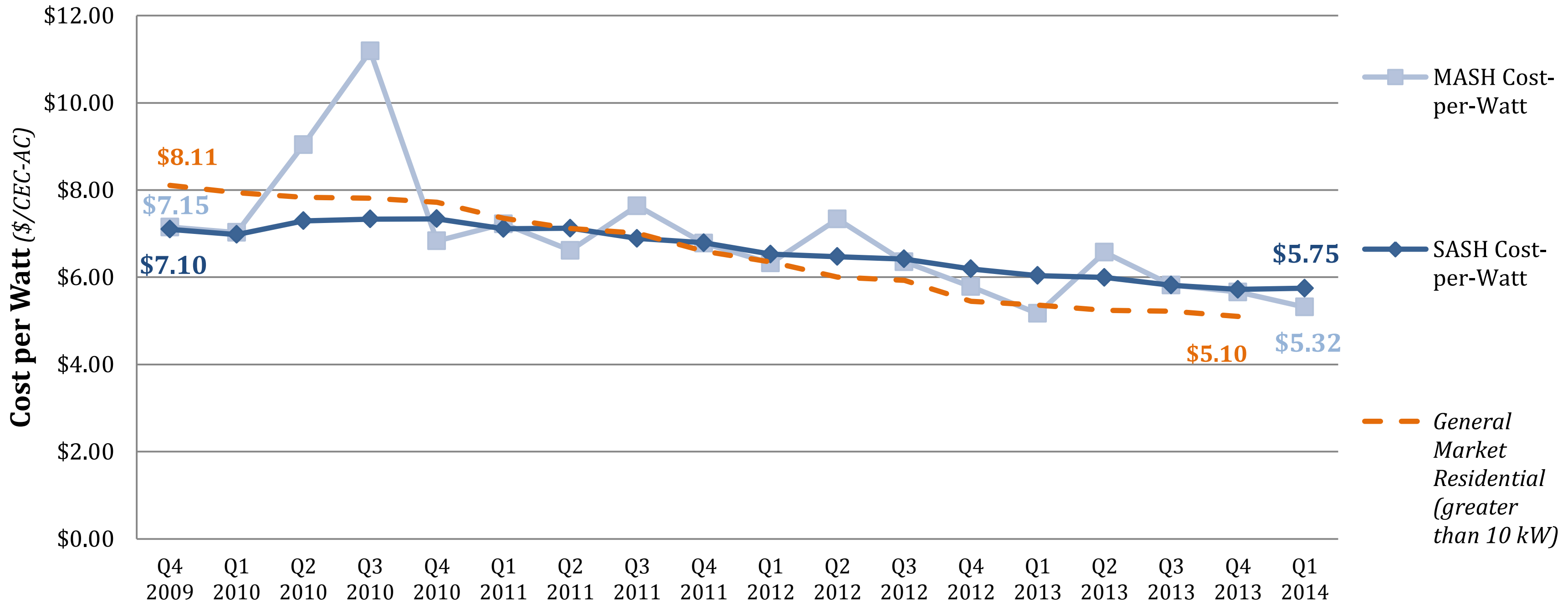


Figure 3. Cost Trends for Completed MASH and SASH Projects, 2009-2014[15]



[15] Data drawn from CSI Working Data Set, as of Q1 2014. General Market residential figure included for reference.

AB 217 Requirements

Due to the success of the CSI Low Income Programs and the expected full commitment of existing resources ahead of schedule, the Legislature authorized an additional $108 million in funding for SASH and MASH in AB 217 (Bradford, 2013).[16] The bill also extends the program until the exhaustion of this additional funding, or until 2021, whichever comes first. The goal of AB 217 is to install an additional 50 MW of solar capacity serving eligible low-income customers across the three utility territories under the CSI program. Essentially, this ambitious goal represents a doubling of the solar capacity incentivized by the program to-date, with only half the amount of incentive funding.

In addition to this ambitious capacity goal, AB 217 drives the SASH and MASH programs towards new policy goals. Section 2852(d) now requires that the programs:

1) Maximize the overall benefit to ratepayers from the programs;
2) Require participants who receive incentives to enroll in the Energy Savings Assistance Program if eligible; and
3) Provide job training and employment opportunities in the solar energy and energy efficiency sectors of the economy.

Given these new statutory requirements and ambitious goals, the Energy Division offers the below program design proposals for consideration in the Commission's R.12-11-005 proceeding. Although the CSI's Low Income Programs were not necessarily designed to transform the market for solar power on affordable housing, the installation costs for customer-side solar systems have declined significantly since they were first launched, perhaps partially because of the existence of the CSI general market program.[17] With these installation cost reductions, the continued support of other solar financing policies like the federal Investment Tax Credit (ITC), and the availability of Net Energy Metering (NEM) and Virtual Net Metering (VNM) for at least the beginning of the reauthorized programs, it is conceivable that together, the SASH and MASH programs can meet these goals.

Implementation Proposals

The policy proposals below primarily address issues raised by AB 217. Additional staff proposals are put forth given the current opportunity to make program modifications in the CSI Low Income Programs, eight years after the original CSI authorizing legislation was passed into law. Energy Division's staff proposals were developed through a close review of program history, prior Commission decisions, and by holding a public workshop relating to

[16] The text of AB 217 is available at:
http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB217

[17] For more on the subject of market transformation and the CSI program, please see the recently published CSI Market Transformation Study conducted for the Energy Division by Navigant Consulting, available at:
http://www.cpuc.ca.gov/PUC/energy/Solar/California_Solar_Initiative_Market_Transformation_Study.htm

the MASH program,. The proposals presented here are organized into three general categories—1) Implementation issues covering both programs, 2) MASH Program Issues and 3) SASH Program Issues. To aid the reader, staff has compiled a numbered list of proposals in the Recommendation Summary below.

Unless otherwise noted here, staff recommend that the policies and procedures in the CSI Handbook and previous Commission decisions on the CSI program should be retained to ensure maximum program continuity. Also, it should be noted that proposals here do not address the tariff treatment of future MASH and SASH projects. While tariff and interconnection policies are critical to the economics of customer generation and for MASH and SASH program participants, designing a successor tariff to Net Energy Metering will be discussed in a separate proceeding.

Implementation Issues Covering Both Programs

Capacity Targets

Unlike the original authorization of the CSI Low Income Programs, which articulated budget allocations much more clearly than capacity goals, AB 217 sets a clear combined capacity target for the new phase of the MASH and SASH programs: 50 megawatts of new solar photovoltaic capacity. Given that the general intent of the legislation is to replicate the successes of the programs, staff believe that the capacity goals for each program should be determined in proportion to their cumulative installations. This proportion has fluctuated in the months since AB 217 became effective, but according to recent program data, by 2014 the MASH program has accounted for roughly 70-75% of all installed low income CSI solar capacity, with the SASH program contributing the other 25-30%.[18] In line with these installation track records, Energy Division staff recommend the Commission adopt a 37.5 MW capacity goal for MASH, and correspondingly, a 12.5 MW capacity goal for SASH.

Program Funding

In order to replicate the success of the previous programs, staff believe that the same approach should be taken again with respect to the division of funding between MASH and SASH. In 2007 and 2008, the Commission decided to evenly divide the $216 million made available for low income residential program between the multifamily and single-family market sectors via MASH and SASH. Similarly, Energy Division staff recommend an even division of the additional $108 million in funding between the programs, meaning that each would receive $54 million overall in new funding.

[18] Program data drawn from the CSI Working Data Set, current snapshot available in Table 1 above. When Energy Division staff held a workshop on the future of the MASH program in December 2013, the proportion of installed capacity was close to 75% MASH, 25% SASH. At the time of this writing, it has fluctuated slightly to roughly 68% MASH, 32% SASH and will continue to change as the two programs manage their waitlists and remaining incentive budgets.

If the CSI Low Income Programs were solely designed to achieve capacity goals at the lowest cost, it would follow that the Commission should steer more program funding to the MASH program. However, as was established in prior Commission decisions on CSI issues, these programs are primarily undertaken to ensure *access* to solar power for low income Californians, not to maximize the number of megawatts that could, in theory, be built. In terms of access to solar power, low income single-family homeowners face daunting financial barriers, especially in a solar marketplace where an emphasis on credit scores and creditworthiness are an important (if often overlooked) prerequisite to many residential solar financing options. Staff believe that the relatively easier access that affordable housing developers have to a wider variety of financing options and to solar power in general—at least under the current tariff structure—should be taken into account here.[19] In order to balance the dual goals of providing access to solar while also meeting capacity targets, staff recommend that the SASH and MASH programs receive an equal share of AB 217 funds.

Data Tracking, Reporting and Evaluation Requirements

Many changes will be needed to the PowerClerk database and CSI Handbook policies to implement AB 217. Staff recommend that the Commission give clear direction to the Program Administrators going forward to require that they update and maintain both resources for the duration of the extended MASH and SASH programs. Application documents and records should be accepted and stored in accessible electronic form whenever possible. Also, staff recommend that Commission policy be modified so that both programs have the same regular semi-annual reporting requirement. At present, the SASH program submits quarterly status reports, while MASH has a semi-annual reporting requirement.

In addition, Energy Division staff believe that the biennial program evaluation requirement placed into the original SASH and MASH decisions should be changed. Rather than have a static biennial review timeframe, which does not necessarily correspond to the progress or needs of the program, staff recommend that the Commission order one final end-of-program study to be completed by an outside evaluator at the close of the MASH and SASH programs. Given that AB 217 incentives could last anywhere from 2-7 years depending on demand, and that evaluation studies often cost hundreds of thousands of dollars, staff recommend that additional evaluation work beyond a final closeout study be left to the discretion of the Energy Division. The Energy Division is currently conducting the second round of MASH and SASH program evaluation studies with Navigant Consulting—essentially a 'midstream review' of the programs—with final deliverables expected in 2015.

[19] In additions, one of the most important value propositions for MASH projects at the moment may be the tariff treatment they can access under the MASH Virtual Net Metering tariffs at each utility. Unlike other customer generation tariffs, these MASH VNM tariffs permit MASH-eligible projects to serve load across multiple service delivery points (SDPs), allowing for additional efficiencies in system design and construction.

MASH Program Issues and Proposals

For the MASH program in particular, there are a number of program issues to address in order to efficiently implement AB 217. Energy Division staff identified four issues for the Commission to address in a decision implementing AB 217 that are specific to the MASH program. The Commission should:

1) Adjust Program and Incentive Budget Allocations;
2) Consolidate Administration into a Statewide Program Administrator;
3) Implement Program Design and Incentive Level Changes due to AB 217; and,
4) Determine the Disposition of Waitlisted MASH Projects.

Each issue is discussed in turn in this section.

Program and Incentive Budget Allocations

In the original MASH decision in 2008, the Commission determined that 88% of the overall funding for MASH should be put towards solar incentives, with the remaining 12% allocated for program administration, marketing and outreach, and program evaluation activities.[20] With five full years of program experience now complete, the actual spending of the program since 2008 can help inform how the additional funding coming into this program should be allocated. Tables 2-4 below compare the annualized administrative budget for each Program Administrator to its actual reported spending, for program years 2008-2013.

Tables 2-4. MASH Expenditures by Program Administrator, 2008-2013[21]

California Center for Sustainable Energy			
Year	Budgeted (7 yrs, 2009-2015)	Actual	Surplus/Deficit
2008-2009	$191,297	$126,646	$64,651
2010	$191,297	$159,563	$31,734
2011	$191,297	$204,283	$12,986
2012	$191,297	$158,463	$32,834
2013	$191,297	$41,342	$149,955
Total To-Date	$956,485	$690,297	$266,188
% of To-Date Budget Spent			72%

[20] D.08-10-036 at pages 21-23.

[21] Figures drawn from MASH Semi-Annual Reports, available on the Commission's CSI Progress Reports webpage. The figures above do not account for 2014-2015 budgets and program costs, however it is clear than ample room remains in the administrative budget authorized in D.08-10-036.

Pacific Gas & Electric			
Year	Budgeted (7 yrs, 2009-2015)	Actual	Surplus/Deficit
2008-2009	$811,621	$229,578	$582,043
2010	$811,621	$276,057	$535,564
2011	$811,621	$427,730	$383,891
2012	$811,621	$320,400	$491,221
2013	$811,621	$284,789	$526,832
Total To-Date	$4,058,105	$1,538,554	$2,519,551
% of To-Date Budget Spent			38%

Southern California Edison			
Year	Budgeted (7 yrs, 2009-2015)	Actual	Surplus/Deficit
2008-2009	$854,338	$276,132	$578,206
2010	$854,338	$92,139	$762,199
2011	$854,338	$277,579	$576,759
2012	$854,338	$299,715	$554,623
2013	$854,338	$242,802	$611,536
Total To-Date	$4,271,690	$1,188,367	$3,083,323
% of To-Date Budget Spent			28%

The figures above suggest two important points. First, it can be inferred that there are economies of scale in implementing larger MASH programs, in that the larger utility-run programs (by dollars and megawatts) have spent a smaller proportion of their budget. Second, it can be concluded that the actual cost of administering the MASH program did not require 12% of the overall program budget.

Since any new administrative funds authorized by a Commission decision implementing AB 217 would need to last until 2021 at the latest, it is important to allocate enough funds for the Program Administrators to meet all foreseeable administrative duties. However, given the large amount of administrative spending already authorized under previous Commission decisions, it is unlikely that this program will run short of administrative funding.

In light of these facts, staff recommend that 8% of the overall $54 million set aside for the MASH program be earmarked for administration, marketing, energy efficiency audits and program evaluation. At an 8% level, the new administrative budget would be $4.32 million, more than the $3.4 million spent to-date on the program in its first five full years. To ensure all administrative objectives are met, a 1% reserve for program evaluation activities and another 1% reserve for energy efficiency audits should be maintained. To provide maximum administrative flexibility for this funding, staff recommend that no further breakdown of this money be established. The proposed budget allocations for MASH are presented in Table 5 below.

Table 5. MASH Program Budget Allocations, Current and Proposed

	Current Program, Statewide[22]	Proposed by Staff Under AB 217, Statewide
Incentives	$95,339,200 (88%)	$49,680,000 (92%)
Administration	$13,000,800 (12%)	$3,240,000 (6%) *Administration* $540,000 (1%) *Evaluation* $540,000 (1%) *Energy Audits*
Total	**$108,340,000**	**$54,000,000**

Statewide Program Administrator

Following on the discussion of administrative spending above, further economies of scale may be possible by consolidating program administration into a single statewide Program Administrator, similar to the setup pursued to-date in the SASH program. The existing CSI Program Administrators were chosen in 2008 to run the MASH program primarily because of the similarities between, and thus expected efficiencies from running, both the General Market and MASH programs at the same time. Now that the General Market program is winding down, continuing to have three separate Program Administrators just for the MASH program may be redundant. In addition, with greater standardization of application review and processing statewide, oversight of the MASH program by the Commission would be more straightforward.

Energy Division staff believe that the Commission should consider the consolidation of MASH program administration given the potential benefits of efficiency and standardization. If the Commission chooses to go in this direction, staff recommend that a Program Administrator be selected in a competitive request for proposals (RFP) process, not through a direct designation of any particular organization. At a minimum, a statewide MASH Program Administrator should be selected based on knowledge of complex affordable housing policies; experience with distributed generation technologies, industries and programs; and ability to administer the program efficiently and effectively across all three utility territories.[23]

Transitioning to a statewide Program Administrator would have some startup costs, though existing databases and policies already exist and could largely be retained in order to smooth this transition. If a new Program Administrator is chosen, staff recommend that the Commission allow the current Program Administrators to file a transition plan as a Tier 2

[22] As established by D.08-10-036. See "Table 3: Adopted MASH Budget," page 23.
[23] In the previous solicitation for the SASH Program Administrator (see D.07-11-045 at page 32), the Commission declined to restrict the eligibility of interested bidders to government and non-profit entities, nor restrict bidding solely to the incumbent utilities and CSI Program Administrators. Parties are encouraged to comment on whether the program's interests would be better served by adding any eligibility restrictions to the recommended competitive solicitation for a statewide MASH Program Administrator.

advice letter, which would detail a process for transferring administrative responsibilities and any unspent administrative balances to the new statewide Program Administrator.

Program Design and Incentive Level Changes Pursuant to AB 217

For the MASH program to meet the ambitious capacity, energy efficiency, and job training goals of AB 217, reforms are needed to the design of the program and its present incentive levels. In a related concern, it has been unclear throughout the MASH program to what degree tenants living in affordable housing properties have realized benefits from solar incentives. The Legislature, in their revision to Public Utilities Code Section 2852, has required the Commission to "maximize overall benefit to ratepayers" in redesigning the MASH and SASH programs. In line with this direction, staff believe that the Commission should take this opportunity to better ensure that affordable housing tenants being served by MASH projects are seeing actual benefits.

To implement new statutory requirements in the MASH program, Energy Division staff recommend that the Commission require projects to demonstrate that they are meeting new legislative requirements related to job training and energy efficiency. Going further, staff also recommend that the Commission: 1) adopt the tenant benefit policies already in place for the CSI-Thermal Program; and 2) restructure MASH incentive levels and incentive tracks in light of the program's new policy goals.

Energy Efficiency and Job Training as Required by AB 217

AB 217 requires that projects benefitting from new incentive funding take additional steps to promote energy efficiency and job training in the solar and energy efficiency industries. Specifically, AB 217 directs the Commission to ensure that SASH and MASH require "participants who receive monetary incentives to enroll in the Energy Savings Assistance Program… if eligible" and provide "job training and employment opportunities in the solar energy and energy efficiency sectors of the economy."[24]

To meet the first legislative requirement, Energy Division staff recommend that each MASH applicant be required to provide a list of all on-site customers eligible for the Energy Savings Assistance Program (ESAP) as part of the application process.[25] MASH Program administration staff would forward this list to staff members at the relevant utility in charge of enrolling the identified customers in the program. ESAP staff would be responsible for following up with these tenants using their established outreach and enrollment procedures. Additional energy efficiency actions could be taken by MASH applicants in order to receive higher incentives, as recommended and explained in further detail below.

To meet the second legislative requirement—providing job training and employment opportunities—the Sub-contractor Partnership Program (SPP) run by GRID Alternatives can

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[24] See Public Utilities Code Section 2852(d). The text of AB 217 is available at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB217

[25] All customers taking service under the California Alternate Rates for Energy (CARE) program are automatically eligible for ESAP.

be used as a model.[26] Under the SPP, GRID Alternatives hires outside solar contractors to build SASH projects. As a condition of participating in the program, solar contractors must hire at least one eligible job trainee for at least one full day of work on every SPP SASH installation. Over 1,500 paid work days have been provided to participants of over 50 job training programs around the state as a result of this program. Job trainees have come from programs run at universities, community colleges, career institutes, as well as non-profit and professional organizations.

Building on the pioneering work GRID has done in this area, Energy Division staff recommend that at minimum, all MASH projects funded under AB 217 be required to meet the same requirement as SASH SPP projects—hire at least one eligible job trainee for at least one full day of work at the MASH project. Judging by the large number of job training programs and solar contractors participating in the SPP already, staff believe this requirement will not pose a significant challenge for MASH contractors. Ideally, contractors would be able to incorporate tenants at the actual project site in the building of solar systems, however staff recognize that such a requirement could significantly interfere with the often tight timetables of building solar systems. Staff also recommend that additional job trainees could be taken on by MASH contractors in order to receive higher incentives, as explained in further detail below.[27]

Adopting CSI-Thermal Policies Related to Tenant Benefits

The Commission has previously drawn a distinction between incentive levels for solar capacity that serves common-area electrical load, and capacity that serves tenant-area load at MASH properties. Solar capacity designed to serve tenant area load has been given a higher incentive level, most recently at $2.80/Watt, versus $1.90/Watt for capacity serving common-area load. We have learned in recent workshops and through conversations with MASH Program Administrators and stakeholders that this incentive structure may do little to actually pass economic benefits on to low-income tenants.[28]

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[26] GRID Alternatives describes the SPP both on their website (http://www.gridalternatives.org/learn/sash/sub-contractor-partnership-program) and in their quarterly SASH reports. In their Q1 2014 Program Status Report, GRID provides this description of the SPP: "Students or graduates of job training organizations may be provided with short-term paid work and opportunities for long-term job placement in the solar PV industry through the SASH Sub-Contractor Partnership Program (SPP). Trainees from over 50 different CA job training programs have worked alongside experienced installers from 40 for-profit companies to install SASH systems. These opportunities provide 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. Since the inception of the SPP, over 1,540 paid job opportunities have come to fruition for California trainees through SPP installations. Although the minimum requirement is to hire one job trainee per SPP installation, nearly 15% of SPP installations have had two or even three job trainees on site – all as paid workers learning valuable solar skills."

[27] Energy Division staff also recommend that documentation requirements proving that each of these new expectations are met by each project be added to the Incentive Claim Form process outlined in the CSI Handbook.

[28] Without any explicit requirement to pass along solar savings to their tenants, or easily quantifiable metrics for program evaluation, it is not clear whether MASH tenants benefit from solar incentives under the current incentive structure. MASH projects typically take service under either Net Energy Metering (NEM) or Virtual

In contrast, applicants for incentives in the CSI-Thermal Low Income program must submit an affidavit attesting that the property in question will remain low income for at least 10 years, and another describing how benefits equaling at least 30% of the incentive amount will be passed along to on-site tenants.[29] These affidavits create a clear, verifiable expectation that tenants will benefit from solar incentives. This requirement has clearly not been a significant barrier to program participation; in fact, the CSI-Thermal Low Income program is one of the few market segments making substantial use of the available CSI-Thermal incentives, and many of the same properties applying to CSI-Thermal would likely be eligible for or perhaps already participating in MASH.[30]

Energy Division staff recommend that the Commission extend the low-income tenant benefit policies of the solar water heating CSI-Thermal program to the electricity-based MASH program, and require that at least 30% of the MASH incentive to go directly towards benefitting on-site tenants as described in similar affidavits. Taking this step will help maximize the overall benefit to ratepayers provided by the MASH program by taking verifiable steps to ensure that low income Californians are benefitting from MASH incentives. In addition, taking this step would also help ensure that property owners and solar contractors understand that claiming eligibility for the MASH program is also a commitment to providing low-income housing for the ensuing 30 years.

Net Metering (VNM) tariffs at their respective utility. For NEM projects, especially those offsetting common area load and/or those at master-metered properties, utility bill savings flow to the property owner, who is not under any requirement to pass them along to their tenants. For VNM projects, even if bill savings do presently flow to tenants, expected changes to affordable housing financing rules could significantly reduce tenant savings. Changes to low income housing tax credit policies could permit affordable housing property owners to charge more in rent to account for reduced tenant utility expenses due to MASH systems. In the interests of simplicity and uniformity regardless of tariff service or financing approach, staff believe that extending CSI-Thermal Low Income Program policies to the MASH program would better ensure low income tenants see benefits from solar incentives. For more on whether MASH tenants realize financial benefits, please see the minutes from the Energy Division's December 2013 workshop on AB 217, available at: http://www.cpuc.ca.gov/PUC/energy/Solar/workshops.htm

[29] Section C.19 of Appendix C to the CSI-Thermal Handbook describes the requirement, reprinted in full here: "C.19 Ensuring Benefits to Lower Income Households Affidavit
All multi-family low-income participants will be required to submit an affidavit from the property owner explaining how the benefits of the solar thermal system will be passed to the low-income residents through reduced energy costs. The total value of the benefits provided to the tenants shall be no less than 30% of the total incentive amount and cannot include any expenditure which the building owner would be required to incur (e.g. compliance with building codes).

If the benefits are provided in the form of reduced rent, reduced energy bills, or other monthly tenant benefits, then they shall be provided with a period not to exceed five years from the incentive payment date. If the benefits are provided in the form of discretionary property improvements or other one-time benefits, then they shall be provided within a period not to exceed twelve months from the incentive payment date."
In addition, sample affidavits are provided in Appendix M. The CSI-Thermal Handbook can be found on the Commission's website at: http://www.cpuc.ca.gov/NR/rdonlyres/98CAEA2D-74DB-49ED-9BCE-1859866B3948/0/201309CSIThermalHandbook_poolFINAL.pdf

[30] See the Energy Division's recent report on the CSI-Thermal Program, completed pursuant to AB 2249 (Buchanan, 2012), available at: http://www.cpuc.ca.gov/NR/rdonlyres/B7D3D1AC-5C9A-49C9-81E1-8E03E471AA73/0/CSIThermalAB2249ReportFinalWebVersionJanuary292014.pdf

Restructuring Incentive Levels and Tracks In Light of AB 217

To implement the new program requirements detailed above while also meeting AB 217's ambitious capacity goals, significant changes to program requirements and incentive tracks and levels are needed. As noted above, the present incentive structure that distinguishes between common area and tenant area load may not actually deliver additional benefits to tenants. Aiming to 'double the capacity with half the money', as is the capacity goal for AB 217, requires a significant reduction in incentive levels as well.

Energy Division staff recommend that the Commission eliminate the distinction between common and tenant area load in the design of MASH incentives, and instead incentivize solar contractors and affordable housing developers to meet or exceed basic compliance with the Legislature's AB 217 goals—maximizing benefits, as well as job training and energy efficiency efforts. Accordingly, staff recommend that a two-tiered incentive structure be adopted as outlined in Table 6. MASH projects meeting basic eligibility expectations and legislative requirements—which now include expanded energy efficiency and job training activities—should be eligible for $0.90/Watt in solar incentives. MASH projects that exceed these basic requirements by 1) having a majority of their units available at an affordable rent as defined by statute; 2) hiring *more than one* job trainee to work on the installation; and 3) completing a walk-through energy efficiency audit (more information below) paid for by the MASH program, will be eligible for $1.40/Watt in solar incentives.

Table 6. Proposed Reforms to MASH Incentive Levels

	Current	Under Staff Proposal
Track 1A incentives	$1.90/Watt for capacity serving common area load	**$0.90/Watt** for projects establishing basic post-AB 217 project eligibility: • Refers CARE customers to ESAP • Provides job training opportunity to one job trainee • At least 20% of on-site units are affordable
Track 1B incentives	$2.80/Watt for capacity serving tenant load	**$1.40/Watt** for projects going beyond basic eligibility: • Refers CARE customers to ESAP • Provides job training opportunities to more than one job trainee • At least 50% of on-site units are affordable • Conducts on-site walk-through energy audit (paid for by MASH program)

At these levels of funding, and at the current proportion of applications for Track 1A (68%) to Track 1B (32%) incentives by capacity, the MASH program would be expected to meet or perhaps exceed its capacity goal if all incentives are claimed.[31] Obviously, by changing the structure of the incentive tiers, the proportion of capacity installed in Track 1B at a higher incentive rate could potentially increase, drawing this capacity goal into doubt. However, if these incentive levels, a lower 8% administrative budget and 37.5 MW capacity goal are all adopted by the Commission for MASH, staff conclude that the proportions of Track 1A and Track 1B incentives by capacity could reverse (i.e. change to 32% Track 1A and 68% Track 1B) before the capacity goal would be threatened, given full subscription.

Finally, to expand on one item not discussed in detail above, Energy Division staff believe that MASH applicants should be given greater encouragement to pursue cost-effective energy efficiency measures before installing ratepayer-incentivized solar panels. Thus, staff recommend that to reserve Track 1B incentives, MASH applicants should be required to schedule an on-site energy efficiency audit, to be paid for by MASH program funds.[32] In addition, staff believe that applicants who undertake program-funded audits should be encouraged (though not required) to install any energy efficiency measures that have a reasonable payback period of no greater than 10 years, as indicated by their audit. This audit would need to be completed by the time incentive funds are claimed. This effort would help incentivize more low-income property owners to adopt energy efficiency measures, and produce more data and information for multifamily low income program design for both solar and energy efficiency efforts.

Disposition of Projects on the Waitlist

Due to a flurry of applications in 2013 and early 2014, the MASH program currently has a very expansive waitlist of interested applicants. Over 50 megawatts of MASH projects are now waitlisted, more than the entire capacity goal of the program as reauthorized under AB 217. The great degree of interest in the MASH program is encouraging; because of this, and Commission leadership in on-bill financing[33], Energy Division staff believe that the implementation of AB 217 in the MASH program will be successful, despite lower incentives and additional program requirements.

The Commission does need to determine whether these MASH applicants should be allowed to claim incentives funded under AB 217. That said, since these waitlisted projects

[31] Based on analysis prepared for the MASH Program Administrators in late 2013. Should present participation trends continue and if staff recommended incentive levels are adopted, the MASH program should meet its capacity goals with some incentive funding to spare. Staff believe that a small incentive budget buffer should be maintained in both the SASH and MASH programs, to allow for future program adjustments if necessary. In particular, the scheduled decline in the federal solar investment tax credit in 2016 could necessitate an adjustment to program rules or incentive levels if it has a significant impact on the solar market in California.

[32] Staff intend for these audits to be performed at a level of detail at or above an ASHRAE Level I audit, and any data gathered from these audits should be shared with Energy Division staff to inform oversight and evaluation of MASH and low-income energy efficiency programs. Should this recommendation be adopted, the MASH Program Administrator(s) would be responsible for verifying that these audits occurred, gathering data and ensuring that applicants are reimbursed for this expense. For a fuller description of ASHRAE energy audits, please visit the Association for Energy Affordability's website at: http://aea.us.org/3143-2.html

[33] See D.13-09-044 and Resolution E-4663 for more on the finance pilots now in the early stages of implementation.

would be funded after the implementation of AB 217, staff recommend that they must meet all requirements imposed on the program by AB 217. Energy Division staff recommend that waitlisted projects be allowed to claim MASH incentives[34] if they meet two basic conditions:

1) The project must not already be built (i.e. it should need incentives); [35]
2) The applicant must agree to abide by all new MASH rules and requirements, including a lower incentive rate, and now-required job training and energy efficiency activities.

SASH Program Issues and Proposals

Energy Division staff identified four issues for the Commission to address in a decision implementing AB 217 specific to the SASH program. The Commission should:

1) Determine Budget Allocations for New Funding;
2) Determine Whether Another Competitive Bid for SASH Program Administration is Warranted;
3) Implement Incentive Level and Program Changes due to AB 217; and,
4) Permit Third-Party Ownership (TPO) in the SASH Program.

Each issue is discussed in turn in this section.

Budget Allocations for New Funding

Like the MASH program, a budget for the new funding coming into SASH on account of AB 217 must be considered and approved by the Commission. With more than 80% of the currently authorized funding already spent, the SASH program is nearing the end of its budget, though incentives still remain in most areas. Table 7 below reports the most recent expenditure data available from GRID Alternatives.

Table 7. SASH Program Expenditures through Q1 2014[36]

	Total Program Budget	Expensed/Encumbered through Q1 2014 *($, % expended)*
Incentives *(85%)*	$92,089,000	$77,310,000 (84%)
Administration *(10%)*	$10,830,000	$6,797,001 (63%)
Marketing and Outreach *(4%)*	$4,330,000	$3,218,218 (74%)
Evaluation *(1%)*	$1,091,000	*Studies contracted by PUC*
Total	**$108,340,000**	**$87,325,219 (81%)**

[34] It is not anticipated that the SASH program will develop a similarly voluminous waitlist, however if that program encounters similar issues with regard to a waitlist, staff recommend that the above approach be applied in the SASH program as well.

[35] A suitable proxy for installed status would be receipt of a Permission to Operate (PTO) letter from the utility. Receiving this letter signifies that a solar project has been properly installed and is allowed to operate in parallel with the utility grid. Other standards could possibly be applied, though.

[36] Figures taken from most recent Quarterly Status Report, available at http://www.cpuc.ca.gov/PUC/energy/Solar/sash.htm

Given that administering the SASH program is a labor-intensive effort, requiring many personnel hours to be spent in outreach, recruitment, application processing, volunteer training and installation, staff recommend that the existing program budget allocations be readopted by the Commission in a decision implementing AB 217. These budget allocation percentages—85% to incentives, 10% to administration, 4% to marketing and outreach and 1% to evaluation—should remain constant as indicated in Table 8 below. Indeed, demands on these administrative resources may increase further because of the expected drop in the incentive level—the Program Administrator will need to find ways to do more with less.

Table 8. SASH Program Budget Allocations, Current and Proposed

	Current Program, Statewide[37]	Proposed by Staff Under AB 217, Statewide
Incentives	$92,089,000 (85%)	$45,900,000 (85%)
Administration	$10,830,000 (10%)	$5,400,000 (10%)
Marketing and Outreach	$4,330,000 (4%)	$2,160,000 (4%)
Evaluation	$1,091,000 (1%)	$540,000 (1%)
Total	**$108,340,000**	**$54,000,000**

Should present participation trends continue and if staff-recommended incentive levels are adopted, the SASH program should meet its capacity goals with some incentive funding to spare. Staff believe that an incentive budget buffer should be maintained in both the SASH and MASH programs, to allow for future program adjustments if necessary. In particular, the scheduled decline in the federal solar investment tax credit in 2016 could necessitate an adjustment to program rules or incentive levels if it has a significant impact on the solar market in California.

Considering Another Competitive Bid for SASH Program Administration

As described at length in Section 5 and ordered in Ordering Paragraphs 2 and 3 of D.07-11-045, at the beginning of the SASH program the Energy Division drafted a Request for Proposal (RFP) for a Low-Income Program Manager (now known as SASH Program Administrator).[38] Pursuant to Commission directives, the RFP process sought innovative proposals from organizations that could demonstrate their ability to effectively administer what is now known as the SASH program, across 14 points of qualifications and experience and 15 different administrative functions.[39] GRID Alternatives was selected as the SASH Program Administrator through this competitive solicitation process and has served since

[37] As established by D.07-11-045. See Appendix A, page 3.
[38] See D.07-11-045, pages 22-32 and 43-46.
[39] See Appendix A of D.07-11-045 for details.

2008 as the statewide organization in charge of SASH, through a contract with Southern California Edison.

While the Commission noted in 2007 that SASH was "an unprecedented program" and at the time it was "unclear who will be able to successfully deliver a program of this scale"[40], GRID's performance as the SASH Program Administrator has been found effective by an external program evaluator, Navigant Consulting, in 2011.[41] GRID has forged key relationships with members of the solar industry, fundraising partners and volunteers and community organizations across the state through their work on the SASH program. GRID staff members have also served as a resource to Energy Division analysts and administrators of other demand-side programs due to their organizational efficacy and demonstrated success in working in low-income communities.

Because the Commission involved stakeholders in R.12-11-005's predecessor proceeding regarding the initial selection of a Low-Income Program Manager, and also for consistency with the competitive solicitation called for above in the MASH program, Energy Division staff believe that the Commission needs comment from parties on whether another competitive solicitation should be pursued in this reauthorization of the SASH program. Given the costs and program implementation delays inherent in another round of competitive bidding, and the fact that GRID has been evaluated as effective in this role, this step may or may not deliver additional value to ratepayers, and should be commented on in response to this proposal.

Lowering Incentive Levels and Adding Program Requirements In Light of AB 217

SASH Incentive Levels

To implement the new program requirements detailed above while also meeting AB 217's ambitious capacity goals, SASH incentive levels need to be adjusted. At present, SASH incentives are determined based on a homeowner's federal income tax liability and their eligibility for CARE rates. Table 8 below outlines the present incentive eligibility matrix.

Table 9. SASH Program Current Incentive Determination Matrix[42]

Federal Income Tax Liability	CARE-Eligible Homeowners	Non-CARE-Eligible Homeowners
$0	$7.00/W	$5.75/W
$1 to $1,000	$6.50/W	$5.25/W
$1,001 to $2,000	$6.00/W	$4.75/W

[40] D.07-11-045 at page 32.
[41] Navigant Consulting, "CSI Low Income Program Administrator Performance Assessment," published April 5, 2011, available at: http://www.cpuc.ca.gov/NR/rdonlyres/3A60572D-725B-434E-A525-077428DE4E5D/0/CSIMASHandSASHPAAssessmentReport_2011.pdf
[42] Established by D.07-11-045, see Appendix A page 2.

This incentive matrix was adopted so that many types of financing could be pursued by a diverse range of customers, including the possibility of tax credit financing for non-CARE host customers. However in practice, GRID Alternatives reports that nearly all program participants qualify for the CARE program, and very few have any sizeable tax liability or out-of-pocket installation costs, making host customer tax credit financing not particularly relevant to the program. Judging by the application totals of the program, covering all applicants to-date, the SASH program has provided incentives of roughly $6/Watt to participating projects.

To streamline the application and financing process, Energy Division staff recommend that a single non-declining incentive level be adopted for all projects. In order to meet capacity goals with the incentive budget available, this figure should be set at $3 per watt (CEC-AC) of solar capacity installed. While this is a significant reduction in SASH funding on a per-watt basis, if the recommendation offered in the next section with regard to third party ownership is accepted by the Commission, it is anticipated that the Program Administrator could negotiate a third-party ownership financing structure that enables the continued financing and construction of SASH projects throughout all three IOU territories.

Program Design Elements in AB 217

Pursuant to D.07-11-045, the SASH Program Administrator is responsible for ensuring that each SASH project complies with program rules as set in Commission decisions and the CSI Handbook. These program rules must now include explicit energy efficiency and job training requirements under AB 217. GRID Alternatives already refers SASH participants to ESAP administrators, and provides job training opportunities. Indeed, staff believe that their referral policies and Sub-contractor Partnership Program (SPP) are the best model for implementing AB 217's program design requirements.

To elaborate on present Program Administrator practices, GRID Alternatives already refers CARE applicants to the ESA Program staff at the relevant local utility. Through the end of 2013, 3,276 SASH participants had been enrolled in ESAP. In this and other ways, GRID Alternatives expends considerable effort in helping homeowners understand and take active control over their energy choices. Similarly, the Sub-contractor Partnership Program presently run by GRID Alternatives—if set as a standard for all SASH projects—already accomplishes the job training objectives of AB 217.[43] Given their relatively small scale, staff believe that SASH project builders should only be expected to hire one job trainee for each SASH project, to be employed for at least a full day's work (8 hours).

Given that referral to ESAP administrators and job training opportunities are already part of the SASH program on the initiative of GRID Alternatives, Energy Division staff

[43] See note 26 above for more information on GRID's Sub-contractor Partnership Program.

simply recommend that this requirement be explicitly adopted by the Commission and regularly reported by the SASH Program Administrator going forward.[44]

Permit Third-Party Ownership in the SASH Program

The overarching SASH program goal—ensuring low-income households can access solar power without increasing monthly household expenses—applies both on a program-wide and on an individual homeowner level. To date in the SASH program, systems have been installed cost-free for participating homeowners, and generally start providing bill savings immediately. Indeed, the present incentive levels and program design were consciously chosen in order to minimize potential burdens on program participants.

Given the lesser incentives available under AB 217, cost-free installations and similar system lifetime savings may not be feasible. To operate within these new constraints, the SASH Program Administrator should be given more latitude in finding ways to maximize these savings for participating homeowners. At a minimum, homeowners should see noticeable savings from going solar that last for the life of the installed SASH system, in order to satisfy the program goals outlined above.

One potential cost-saving tool that heretofore has not been permitted in the SASH program is third-party ownership (TPO) of SASH solar systems. In D.07-11-045, the Commission did not permit third-party owned systems in the SASH program, chiefly due to concerns about consumer protection and long-term homeowner benefits.[45] At the time, TPO agreements were still relatively new in California and less was known about the potential value to homeowners. However, the Commission explicitly left the door open to TPO in SASH in the future, if more could be learned about the consumer protection issues raised at the time SASH was launched.[46]

Since 2007, TPO systems have become far more prevalent in California, accounting for a majority of installed customer-side solar capacity in recent years. Seeking to learn more about this important market trend, in 2012 the Commission commissioned a study into third party owned solar systems in the CSI Program, completed in May 2014 by Navigant Consulting.[47] This report found that "TPO arrangements for solar PV have not created any widespread consumer protection issues" and that "customers with a TPO system are generally

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[44] As a confidential data annex to (recommended) regular semi-annual reports to the Energy Division, staff believe that the SASH Program Administrator should be responsible for submitting a list of completed projects, including the number of CARE customers referred to ESAP, the date of ESAP referral and the names, partner organizations and hours worked of job trainees. The format and template for this confidential data annex could be determined in consultation with the Energy Division.

[45] See D.07-11-045 at pages 40-41. See also D.08-11-005 at page 5.

[46] Specifically, the Commission stated in D.07-11-045 at page 41: "We will consider modifying this order [disallowing TPO in SASH] to allow third-party ownership arrangements for low-income customers if we are presented with a proposal that adequately protects and benefits low-income homeowners in third-party ownership arrangements."

[47] The Third-Party Ownership Market Impact Study, along with two other CSI Market Transformation reports from Navigant Consulting, are available on the Commission's website at http://www.cpuc.ca.gov/PUC/energy/Solar/California_Solar_Initiative_Market_Assessment_Studies.htm

satisfied with their experiences."[48] The Navigant report goes on to detail four third-party owned business models active in California, and presents the results of an economic analysis of TPO systems, which showed no evidence of widespread consumer protection issues.

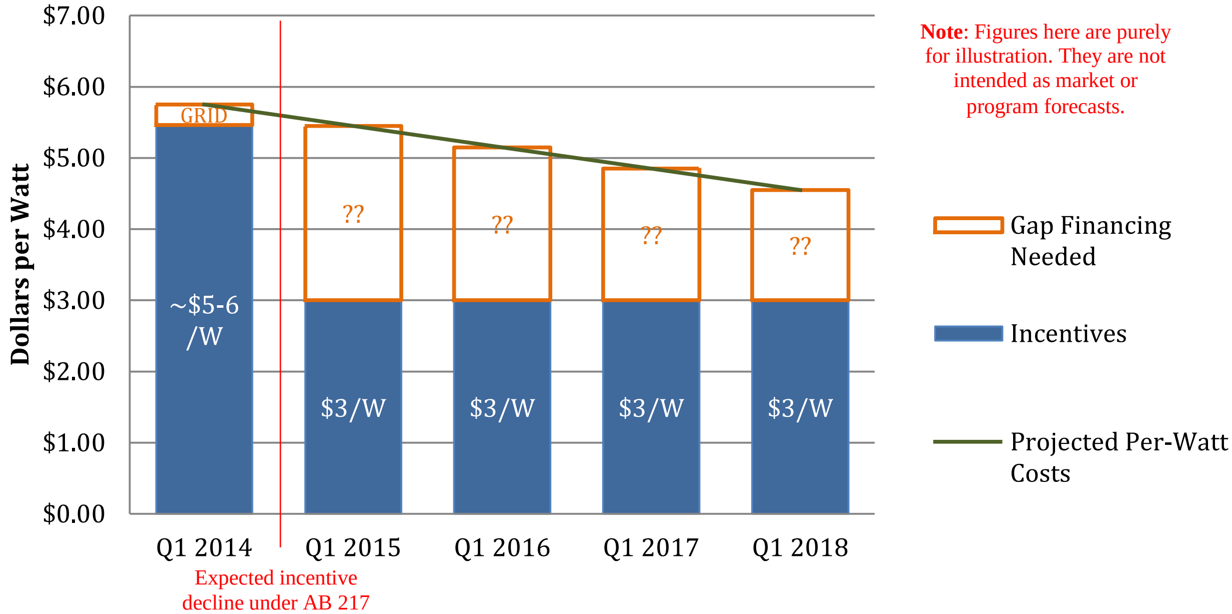
In light of these important research findings, and the reduced incentives available to SASH systems under AB 217, staff believe that it is time to revisit the Commission's TPO policy established seven years ago. While contemplating this potential policy change in recent months, Energy Division staff considered two key pieces of information worthy of mention.

First, unlike other potential solar customers, homeowners participating in SASH have a built-in consumer advocate and impartial intermediary in dealing with third-party owners: the SASH Program Administrator. As the sole entity responsible for the marketing, day-to-day decision-making, application processing and installation of SASH systems, the SASH Program Administrator is uniquely suited to be an advocate for potential SASH participants. In addition, the SASH Program Administrator could be tasked with backstop responsibility for system maintenance, component failures and other ongoing responsibilities, should any problems with the third-party owner or the PV system arise.

Second, staff believe that leveraging the financial opportunity presented by the federal investment tax credit (ITC) for solar projects is a necessity in order to make the project-level economics of SASH systems work given substantially reduced incentives. To illustrate this point with hypothesized figures, please refer to Figure 4 below. In this chart, the blue bars represent the recommended level of SASH incentives, $3/Watt, compared to hypothesized per-watt installation costs for future SASH systems. Even with modest market transformation assumptions in line with historic SASH cost declines (~$0.30/Watt/year), <u>a large proportion of project costs</u> (in orange) <u>will need to be filled in the future from some funding source, most likely tax credit financing, homeowner contributions or fundraising by the Program Administrator</u>. With a flat incentive level of $3/Watt, these additional costs could amount to 25-50% of total project costs, especially in the first few quarters or years of the program under AB 217 funding. This is a sizeable shortfall that would need to be filled by new resources.

[48] See Navigant's Key Findings, page xiv.

Figure 4. SASH Program Cost-per-Watt and Funding Sources Illustration



It is possible that additional Program Administrator fundraising could help fill this gap, and paired with a declining SASH incentive rate and more robust assumptions regarding installed cost declines, perhaps TPO would not be necessary. However, leaving TPO off the table in the future SASH program would present a very difficult, perhaps prohibitive challenge for the SASH Program Administrator.[49] With the proven track record and strong popularity of TPO financing options in the solar marketplace, Energy Division staff believe that allowing TPO in the SASH program presents less risk to program success than continuing to prohibit it. Consequently, Energy Division staff recommend that third-party ownership of SASH systems be allowed upon the exhaustion or encumbrance of all present SASH funding, and after the approval of a more specific proposal filed confidentially with the Commission.

Permitting the SASH Program Administrator to execute a third-party financing agreement with potential outside partners (subject to the Commission's approval in a Tier 3 advice filing from the SASH PA that protects market-sensitive details) would enable the Commission to review and approve the proposal specifically called for in D.07-11-045. The Commission in D.06-06-066 and D.08-04-023 established confidentiality protocols for sensitive information in Renewables Portfolio Standard advice filings that allow for the public dissemination of all non-sensitive details and the review of sensitive details by the Energy

[49] Judging by the overall statistics of the program, GRID has been able to leverage some outside resources to provide 'gap' funding between the level of SASH incentives and the total cost of installing systems for homeowners. However, this outside gap fundraising accounts for approximately 4-5% of the resources needed to provide systems to low-income homeowners without presenting participants with significant up-front costs. Without TPO in SASH, a gap much larger than the current divide between present SASH funding and present costs would exist, one that staff expect may be very difficult to fill with other resources.

Division and select parties such as the Commission's Office of Ratepayer Advocates.[50] Given the success of this approach in ensuring meaningful review of procurement contracts, staff believe the same protocols should be employed here regarding a TPO financing arrangement in SASH. In light of the Commission's previous call for a TPO proposal that "adequately protects and benefits low-income homeowners,"[51] parties are invited to suggest substantive standards of review that the Commission should adopt for the review of the Tier 3 filing recommended by the Energy Division.

[50] The Commission in D.08-04-023 specifically permitted the use of D.06-06-066 confidentiality protocols in the predecessor of this distributed generation rulemaking. Staff believe the same approach outlined for advice letters on page 23 of D.08-04-023 should apply in this situation. For details, please see D.08-04-023 at http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/94606.PDF and D.06-06-066 at http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/57772.PDF.

[51] See note 44 above.

Recommendation Summary

To summarize, Energy Division staff present the recommendations embodied in this proposal as a numbered list below.

To settle issues affecting both programs, staff recommend:

1) Retaining all policies in previous Commission decisions and in the CSI Handbook, unless otherwise specified by the Commission;

2) Setting solar PV capacity goals of 37.5 MW for MASH, and 12.5 MW for SASH;

3) Evenly dividing new funding between programs, allocating $54 million for each;

4) Ordering the maintenance of valuable CSI Program administrative resources that will be needed to continue the administration of MASH and SASH (e.g. PowerClerk and the CSI Handbook);

5) Adopting the same semi-annual reporting requirement for both programs; and,

6) Ordering one final program evaluation, and leave any additional measurement and evaluation studies to the discretion of the Energy Division.

For the MASH program, staff recommend:

7) Adjusting program and incentive budget allocations to shift money towards incentives;

8) Consolidating administration into a Statewide Program Administrator;

9) Implementing program design and incentive level changes due to AB 217's capacity and new program goals, resulting in Track 1A and Track 1B incentive levels of $0.90/Watt and $1.40/Watt, respectively;

10) Allowing waitlisted projects to reapply for MASH incentives provided that they have not been built and meet new program requirements under AB 217.

For the SASH program, staff recommend:

11) Adopting budget allocations for new funding matching those presently in place;

12) Determining whether another competitive bidding process for SASH Program Administration is warranted, given input from stakeholders;

13) Implementing incentive level and program changes due to AB 217's capacity and new program goals, resulting in incentive levels of $3/Watt for all projects; and,

14) Permitting Third-Party Ownership (TPO) in the SASH Program under standards to be set by the Commission after input from stakeholders.

Conclusion

The Energy Division welcomes party comment on all parts of the staff proposal, and in response to the questions posed in the ruling above.

Staff would also like parties to be aware that the ongoing round of program evaluation undertaken at the Commission's behest will include a summary of program design recommendations, expected to be prepared by Navigant Consulting in 2015.[52] The process of drafting this report—to commence early next year—will involve stakeholder feedback and input on both the first round of the MASH and SASH programs, as well as the implementation of AB 217. The recommendations delivered in next year's report are intended to inform the continuing policy discussion on the CSI Low Income Programs.

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[52] The Commission's request for proposals for the ongoing round of MASH and SASH program evaluation (issued December 2013), included this description of the anticipated report due in 2015:

- Program Design Recommendations: This report will condense and summarize the program design, policy and regulatory ramifications of the [Cost-Benefit Report & PA Assessment] in a clear and accessible format intended for a non-technical audience. This report must not exceed fifteen pages in length, exclusive of any technical appendixes or figures. Questions addressed by this report may include, but are not limited to:
  a. What Commission decisions or policies (if any) must be changed to maximize program benefit to ratepayers?
  b. What barriers or inefficiencies exist in program delivery?
  c. Given recent trends in the California distributed solar market and prior program performance, what is the expected rate of program capacity installations until 2021?
  d. Over the life of the funding provided by AB 217, and given the results of the cost-benefit report, how much will California ratepayers receive on their investment by 2021?
  e. Are incentive levels sufficient to meet the goals of AB 217 and how should they be determined?