

**Multifamily Affordable Solar Housing**  
**Semi-Annual Progress Report**  
**August 5, 2011**



Center for  
Sustainable Energy  
CALIFORNIA



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# Multifamily Affordable Solar Housing Semi-Annual Progress Report

Pacific Gas & Electric (PG&E), on behalf of the California Solar Initiative (CSI) Program Administrators (PAs), submits this 2011 Semi-Annual Progress Report for the Multifamily Affordable Solar Housing (MASH) Program, in compliance with California Public Utilities Commission (CPUC or Commission) Decision (D.) 08-10-036, which requires the PAs to submit joint semi-annual reports to the Director of the Energy Division on the progress of the MASH Program.<sup>1</sup>

This fourth MASH semi-annual report captures administrative expenses and program data from program inception on October 16, 2008 through June 30, 2011. It includes requirements identified in Appendix A of D.08-10-036, and other data that the Energy Division (ED) has requested.

In addition, this report encapsulates the upcoming MASH program changes resulting from the July 14, 2011 CPUC CSI Phase I Modifications Decision, D.11-07-031. Details of the decision as it applies to MASH are outlined in section 4 of this report, and affected program areas are identified with footnote references.

## 1. Executive Summary

The MASH Program is one of CSI's two low-income programs and is administered by PG&E, Southern California Edison (SCE), and California Center for Sustainable Energy (CCSE) in San Diego Gas and Electric (SDG&E) service territory. The MASH Program provides incentives for the installation of solar photovoltaic (PV) generating systems on low-income multifamily housing, as defined in California Public Utilities Code (PUC) Section 2852. The MASH Program has two incentive tracks, both of which are paid in a one-time lump sum payment referred to as the Expected Performance Based Buydown (EPBB).

1. Track 1 provides fixed, capacity-based rebates<sup>2</sup> at \$3.30 per watt for solar PV generating systems that offset common area electrical load (Track 1A) or at \$4.00 per watt for solar PV generating systems that offset tenant common area electrical load (Track 1B). Track 1 applications are reviewed on a first-come first-

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<sup>1</sup> D.08-10-036, Ordering Paragraph No. 9 and Appendix A. In addition, the PAs will file a more detailed reporting of MASH expenses, including VNM implementation, as part of the CSI semi-annual administrative expense report that is due July 30, 2010. D.08-10-036, Ordering Paragraph No. 7 and Appendix.

<sup>2</sup> D.11-07-031, Ordering Paragraph No 13. p. 67, Multifamily Affordable Housing (MASH) Program Track 1 incentives shall be reduced to \$1.90 per watt for Track 1A and \$2.80 per watt for Track 1B. These new incentive levels apply to any MASH reservations confirmed after the date of this decision.

served basis.

2. Track 2<sup>3</sup> is a competitive application process and provides variable rebates up to 100% of system and ongoing maintenance costs. To be awarded Track 2 funds, an applicant must demonstrate direct tenant benefit. Track 2 consists of two application cycles per year.

The PAs began accepting applications for Track 1 in February 2009 and conducted the first round of Track 2 application evaluations between July and December 2009. PG&E, SCE, and SDG&E began to offer a Virtual Net Metering (VNM) utility tariff option in June 2009 to simplify the installation of solar PV generating systems in multifamily affordable housing.

To date, the PAs have paid out over \$15.5 million in incentives on 80 completed solar projects statewide. On August 5, 2011, CCSE and SCE will begin accepting applications for their respective waitlists. PG&E is not accepting applications for its waitlist due to the significant number of existing applications on its waitlist. PG&E may open its waitlist at a later date if Track 1 funding becomes available.

On April 15, 2011, SCE, on behalf of the MASH PAs, filed an advice letter requesting an extension of the MASH Track 2 postponement that was originally granted by the CPUC in December 2010. The request was initiated because the Commission had not yet acted on a proposal to reallocate MASH Track 2 incentive funds to Track 1. The CPUC granted the request on April 20, 2011 and extended the postponement until December 31, 2011 to allow the Commission to address the MASH recommendations.

On July 20, 2011, the CPUC issued D.11-07-031, which adopted the CSI Phase One Modifications and includes several significant changes to the MASH incentive rates and eligibility requirements of the program. The details of the decision as it pertains to MASH are outlined in Section 4 of this report.

## 2. Background

In D.06-01-024, the Commission adopted the Staff Proposal to set aside a minimum of 10% of CSI Program funds for projects installed by low-income residential customers and affordable housing projects.<sup>4</sup> In 2006, the California Legislature codified this requirement in Senate Bill (SB) 1<sup>5</sup> and Assembly Bill (AB) 2723.<sup>6</sup> Subsequently, in D.06-12-033, the Commission directed the PAs to conform the CSI Program to SB 1 and AB

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<sup>3</sup> D.11-07-031, Conclusion of Law 26 at p. 64, All funds remaining in MASH Track 2 should be shifted to MASH Track 1.

<sup>4</sup> D.06-01-024, *mimeo.*, pp. 5 and 27, Conclusion of Law 9 at p. 43 (*see also* Appendix A, pp. 2-3)

<sup>5</sup> SB 1 (Murray & Levine), *Chapter 132, Statutes of 2006*, sets forth specific CSI program requirements regarding program budget, conditions for solar incentives, and eligibility criteria.

<sup>6</sup> AB 2723 (Pavley), Chapter 864, Statutes 2006, required the Commission to ensure that not less than 10% of the CSI funds are used for the installation of solar energy systems on low-income residential housing and authorized the Commission to incorporate a revolving loan or loan guarantee program for this purpose.

2723 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 MASH and the Single-Family Affordable Solar Homes (SASH) Programs.

On October 16, 2008, in D.08-10-036, the Commission established the \$108.34 million MASH Program as a component of the CSI Program. The MASH Program provides incentives “for solar installations on existing multifamily affordable housing that meet[s] the definition of low income residential housing established in Pub. Util. Code § 2852.”<sup>7</sup>

The Commission adopted a two-track incentive structure, “with Track 1 providing up front incentives to systems that offset either common area or tenant load, and Track 2 providing an opportunity to compete for higher incentives through a grant program.”<sup>8</sup>

PG&E, SCE, and, in SDG&E’s service territory, CCSE administer incentives under the MASH Program. The Commission selected the general market CSI PAs because the target customers of the MASH Program, who are affordable housing building owners, are similar to the commercial and non-profit customers of the general market CSI Program. The resulting synergy allowed the PAs to incorporate MASH into their existing CSI administrative structures and to implement MASH in a quick and cost-effective manner.<sup>9</sup>

The overall goals for the MASH Program are to:

1. Stimulate adoption of solar power in the affordable housing sector;
2. Improve energy utilization and overall quality of affordable housing through 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.

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

## **2.1. Incentive Types: Track 1 (A and B) and Track 2**

The MASH Program is designed to subsidize solar PV generating systems in low-income multifamily housing. Incentivizing the installation of solar PV generating systems in the MASH Program is not as straightforward as the general market CSI Program.

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<sup>7</sup> D.08-10-036, Appendix A, *mimeo.*, p. 1

<sup>8</sup> D.08-10-036, *mimeo.*, p. 9.

<sup>9</sup> D.08-10-036, p. 24-25

Although affordable housing building owners are the target market, two different categories of customers may receive the benefits from an installed system: the building owners and the tenants. The incentive structure and rebate levels of the MASH Program were designed so that benefits of the solar systems could accrue for both categories of customers.

To accomplish this goal, MASH incentives are divided into two different tracks: Track 1 and Track 2. Track 1 is similar to the general market CSI Program in that the rebate amount is fixed and capacity-based. As shown in Table 2.1, Track 1 offers different incentives for solar PV generating systems that offset the electric load for common areas and tenant units. The rebates are based only on the Expected Performance Based Buy-down (EPBB) method, which is a one-time lump sum payment made after verification of system installation. In the MASH Program, the EPBB incentive rates are fixed and do not automatically decline as they do in the general market CSI program; instead the incentive levels can be revisited, and the Administrative Law Judge assigned to the CSI proceeding has the authority to reduce MASH Track 1 incentives by up to 10% each year.<sup>10</sup>

**Table 2.1: MASH Track 1 Incentive Rates in \$/Watt<sup>2</sup>**

| Track 1A: PV System Offsetting Common Area Load | Track 1B: PV System Offsetting Tenant Area Load |
|---|---|
| \$3.30/Watt                                     | \$4.00/Watt                                     |

Track 1A incentives, at \$3.30/Watt, are available for solar system installations that offset common area; Track 1B incentives, at \$4.00/Watt, are available for systems that offset residential tenant unit electrical load. There is no mandate requiring property owners to install systems that offset tenant unit load in order to qualify for Track 1A incentives; however, it is assumed that the Track 1B rate is sufficient to incentivize property owners to provide solar electric benefits to their tenants.

The Track 2 category allows applicants to compete for higher incentive rates if the project provides a quantifiable “direct tenant benefit” (i.e., any operating costs savings from solar that are shared with tenants). Other categories of benefits that are considered when determining an award include energy efficiency improvements in tenant units, on-site green job creation, training, outreach and education for tenants on sustainability topics.

Two Track 2 award cycles are held each year, and the PAs can award up to 20 percent of the total Track 2 budget in any given cycle; however, awards are not guaranteed during any cycle. For each winning application, a PA can award up to 100 percent of the capital costs for the project as well as ongoing operation and maintenance costs.

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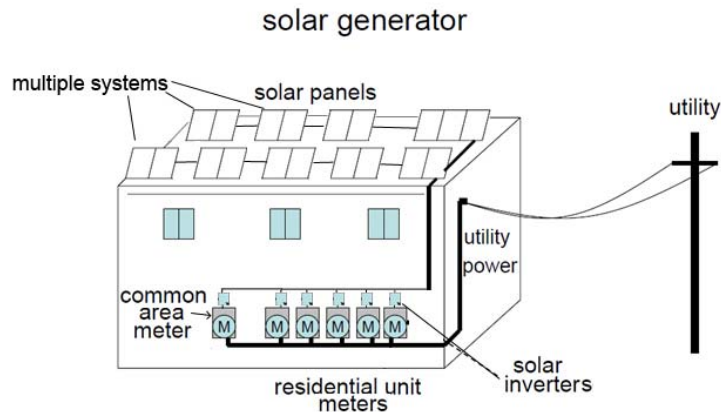
<sup>10</sup> D.08-10-036, p. 14

To ensure that the PAs apply consistent criteria in evaluating Track 2 applications, the PAs developed a standardized statewide Track 2 application and review process with consultation from members of the affordable housing community.

As noted in Section 1 of the report, SCE, on behalf of the MASH PAs, filed an advice letter on April 15, 2011 requesting further postponement of the Track 2 cycle to allow the Commission to address the MASH recommendations. The request was granted on April 20, 2011, and the postponement was extended through December 31, 2011. For further updates on Track 2, see Section 4 of this report.

## 2.2. Virtual Net Metering

In December 1981, following adoption of D.93586, most utilities closed their Master Meter/Submeter Tariffs to new installations. PUC Section 780.5 required individual utility metering in multi-unit residential buildings that received building permits after July 1, 1982. While this setup encourages tenants to conserve energy and have more control over usage, it presents challenges to building owners who want to install solar PV generating systems intended to serve tenants. In order to offset energy usage in tenant units, an owner would have to install a separate system with its own inverter for every meter on the property (see Figure 2.1).

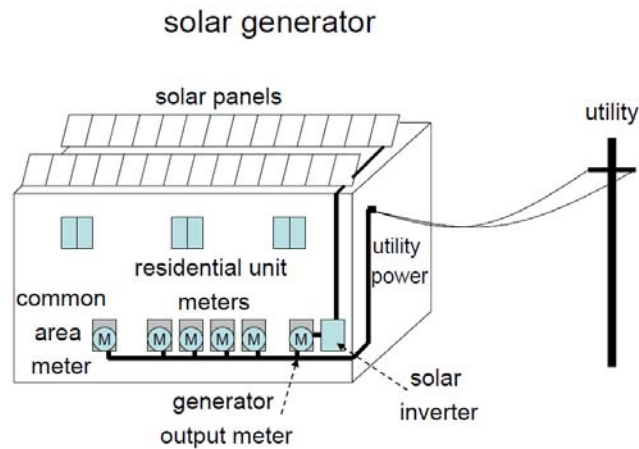


**Figure 2.1: Conventional Solar Systems on Individually-Metered Multifamily Housing**

In order to encourage solar installations on multi-unit affordable housing properties through the MASH Program, D.08-10-036 directed SCE, PG&E and SDG&E to file tariffs for an arrangement called Virtual Net Metering (VNM). These tariffs allow multifamily affordable building owners that qualify for the MASH program to install a single solar PV generating system that covers the electricity load of the owner's common areas as well

as the tenants' individual meters that are located along a single service delivery point for that building<sup>11</sup>.

For an individually metered building (see Figure 2.2) the electricity generated by the system is fed back into the grid through a Generator Output Meter, which measures the kWh produced. The participating utility then based on a pre-arranged agreement allocates the kilowatt hours resulting from the energy produced by the solar PV generating system to both the building owner's and tenants' individual utility accounts. The allocated kilowatt hours are then netted with the customer's usage and then billed in the same manner as a regular NEM customer's account. The VNM tariffs that PG&E, SCE, and SDG&E offer are currently available to those customers that receive incentives through either the MASH Program or the California Energy Commission's New Solar Homes Partnership Program.



**Figure 2.2: Virtual Net Metering System on Individually-Metered Multifamily Housing**

As MASH VNM projects begin their initial system design, it is important for the customer and the solar contractor to understand the requirements of the VNM tariff for each utility prior to the installation. MASH PAs work with the contractors and/or the customers to ensure compliance with the tariff.

<sup>11</sup> D.11-07-031, Ordering Paragraph 1 at p.65, Within 30 days of the effective date of the decision, SCE and SDG&E shall each file an advice letter to match PG&E's NEMVNMA tariff. PG&E shall file an advice letter to remove the December 31, 2011 sunset date for the option to serve accounts located at multiple Customer Service Delivery Points from its NEMVNMA tariff. PG&E Advice Letters 3718-E and 3718-E-A, PG&E modified its Schedule NEMVNMA, Virtual Net Energy Metering (VNM) Service for Individually Metered Residential Units and Owners with Housing Receiving Incentives From the Multifamily Affordable Solar Housing (MASH) Program or the New Solar Homes Partnership Program (NSHP) Affordable Housing to allow customers meeting certain requirements the option to alternatively elect to serve accounts located at multiple Customer Service Delivery Points within their "Eligible Low Income Development" so as to fully utilize their solar generator(s) of not more than 1,000 kW also sited within their "Eligible Low Income Development." These options are available to customers who are ready to interconnect no later than December 31, 2011.



### 2.3. Program Eligibility

Eligibility for the MASH Program is based on the characteristics of the affordable housing development, which must:

1. Meet the definition of “low income residential housing” as provided in PUC Section 2852;
2. Have an occupancy permit for at least two (2) years<sup>12</sup>; and
3. Be an electric customer of SCE, PG&E, or SDG&E.

### 2.4. Budget

In an Assigned Commissioner’s Ruling dated February 5, 2007, in Rulemaking (R.) 06-03-004, one-half of the \$216 million low income CSI budget adopted by the Commission in D.06-12-033 (\$108 million) was reserved for multifamily affordable housing; the other half was allocated to single-family affordable homes. The MASH budget, shown in Table 2.2<sup>13</sup>, was formally adopted by the CPUC in D.08-10-036.

Twelve percent of the PAs’ MASH budget is reserved for program administration, including marketing and outreach, and program evaluation. The PAs must spend 2 percent on evaluation; however, the remaining 10 percent can be split between general administration and marketing and outreach at the PA’s discretion.

**Table 2.2: MASH Budget Allocations by Utility Territory**

|                             | <b>PG&amp;E</b>   | <b>SCE</b>        | <b>CCSE</b>       | <b>Total</b>       |
|-----------------------------|-------------------|-------------------|-------------------|--------------------|
| <b>Budget %</b>             | 43.7%             | 46%               | 10.3%             | 100%               |
| <b>Track 1A and 1B</b>      | 32,923,230        | 34,656,032        | 7,759,938         | 75,339,200         |
| <b>Track 2</b>              | 8,740,000         | 9,200,000         | 2,060,000         | 20,000,000         |
| <b>Administration (12%)</b> | 5,681,350         | 5,980,368         | 1,339,082         | 13,000,800         |
| <b>Total</b>                | <b>47,344,580</b> | <b>49,836,400</b> | <b>11,159,020</b> | <b>108,340,000</b> |

<sup>12</sup> D.11-07-031, Conclusion of Law 30 at p. 64, The two-year occupancy requirement for MASH applicants is no longer needed, but projects may not receive incentives from both NSHP and MASH.

<sup>13</sup> D.11-07-031, Conclusion of Law 26 at p. 64, All funds remaining in MASH Track 2 will be shifted to MASH Track 1. The MASH budget allocation amounts between Track 1 and Track 2 will change.

From October 16, 2008 through June 30, 2011, total MASH program expenditures are \$17,254,510. Table 2.3 details expenditures by Program Administrator.

**Table 2.3: MASH Program Expenditures by Program Administrator**

| <b>MASH Program Expenditure Data Oct 16, 2008<sup>14</sup> to June 30, 2011</b> |                    |                    |                    |                     |
|---|--------------------|--------------------|--------------------|---------------------|
| <b>Expenditure Type</b>   | <b>CCSE</b>        | <b>PG&amp;E</b>    | <b>SCE</b>         | <b>Total</b>        |
| <b>Administrative</b>   | \$334,270          | \$538,279          | \$457,874          | <b>\$1,330,423</b>  |
| <b>Marketing</b>  | \$38,116           | \$38,432           | \$21,320           | <b>\$97,868</b>     |
| <b>Measurement &amp; Valuation</b>  | \$16,074           | \$211,235          | \$12,398           | <b>\$239,707</b>    |
| <b>Incentive</b>  | \$3,517,284        | \$5,647,885        | \$6,421,343        | <b>\$15,586,512</b> |
| <b>Total</b>  | <b>\$3,905,744</b> | <b>\$6,435,831</b> | <b>\$6,912,935</b> | <b>\$17,254,510</b> |

### 3. Program Progress

Since the last semi-annual report in December 2010, 44 additional applications have been completed for a total of 80 completed MASH solar projects with a capacity of 4.410 MW (See Table 4).

As shown in Table 4, the MASH Program has 44 completed Track 1 projects paid in PG&E territory, 20 in SCE territory and 16 in CCSE territory. At this time, \$15,586,512 million of incentives have been paid to MASH Track 1 projects statewide.

Table 4 also shows that there are a total of 241 MASH Track 1 applications with reserved incentives totaling \$49,984,949 and an estimated capacity of 14.417 MW as of June 30, 2011. An additional 55 applications are on waitlists for Track 1 funding in the three territories, representing approximately 5.056 MW of capacity.

As noted in Section 2 of this report, MASH Track 2, which was scheduled to start on January 1, 2011, was postponed until the CPUC issued the decision on the Phase I modifications.

<sup>14</sup> Date of Decision 08-10-036

**Table 4: Summary Data: MASH Track 1 Applications by Status**

| <b>Summary Data (Track 1)</b>                                  |             |                 |              |              |
|--|-------------|-----------------|--------------|--------------|
| <b>UNDER REVIEW APPLICATIONS</b>                               | <b>CCSE</b> | <b>PG&amp;E</b> | <b>SCE</b>   | <b>Total</b> |
| Application (Number)   | 3           | 4               | 7            | 14           |
| Capacity (MW)  | 0.274       | 0.21            | 1.492        | 1.976        |
| Incentives   | \$1,084,012 | \$731,663       | \$6,327,064  | \$8,142,739  |
| <b>RESERVED APPLICATIONS</b>                                   |             |                 |              |              |
| Application (Number)   | 16          | 119             | 106          | 241          |
| Capacity (MW)  | 0.796       | 7.276           | 6.345        | 14.417       |
| Incentives   | \$3,137,937 | \$24,925,800    | \$21,907,625 | \$49,971,362 |
| <b>COMPLETED APPLICATIONS</b>                                  |             |                 |              |              |
| Application (Number)   | 16          | 44              | 20           | 80           |
| Capacity (MW)  | 0.950       | 1.726           | 1.734        | 4.410        |
| Incentives   | \$3,517,284 | \$5,647,885     | \$6,421,343  | \$15,586,512 |
| <b>WAITLIST APPLICATIONS</b>                                   |             |                 |              |              |
| Application (Number)   | 12          | 37              | 6            | 55           |
| Capacity (MW)  | 1.415       | 3.14            | 0.501        | 5.056        |
| Incentives*  | \$3,964,318 | \$10,458,983    | \$1,756,014  | \$16,179,315 |
| <b>OTHER DETAILS</b>   |             |                 |              |              |
| Average Project Costs (\$/Watt)<br>Completed, before incentive | \$6.47      | \$8.61          | \$7.89       | \$7.66       |
| Average Dropout Rate   | 10.0%       | 13.5%           | 20.1%        | 14.5%        |

Data: October 16, 2008 – June 30, 2011

Note: All system capacity measured in CEC-AC MW

\*Note: All Waitlisted Incentive amounts are based on the Track 1A and 1B incentive levels, \$3.30/W and \$4.00/W, prior to the July 14, 2011 CPUC Phase I Decision to reduce the incentive level to \$1.90/W and \$4.00/W

### 3.1. MASH Track 1 Waitlist Update

The MASH program began accepting applications for Track 1 incentives in February 2009. As of the end of June 2010, all three PA budgets were fully subscribed for Track 1 incentives. PG&E received sufficient applications to exceed its Track 1 budget in October 2009, followed by SCE in January 2010 and CCSE in June 2010. As a result of these incentive subscriptions, the PAs established waitlists for MASH Track 1 incentives in each program territory. In terms of overall volume, the three program territory waitlists

currently have a total of 55 applications with a combined capacity of 5.056 MW and requested incentive dollars of \$16,179,315. Current waitlist status is detailed in Table 4.

The majority of waitlisted projects have been moved into active status as a result of normal dropout and project size decreases (see Table 4 for territory project dropout averages). Since the last reporting period, CCSE, PG&E and SCE have been able to move 22 applications totaling \$11,178,297 dollars into the active list. Active status, as defined in this report, refers to those applications that are either under review, reserved or completed.

Since closing its MASH Track 1 waitlist in April 2010, SCE has been able to move all of its MASH Track 1 waitlist applications into active status, and as a result, SCE re-opened its MASH Track 1 waitlist on January 5, 2011 for new MASH Track 1 applications and now has a waitlist.

To access the latest MASH program statistics including waitlist status, customers and stakeholders are encouraged to visit each PA website at the links provided below or the GoSolarCalifornia website.

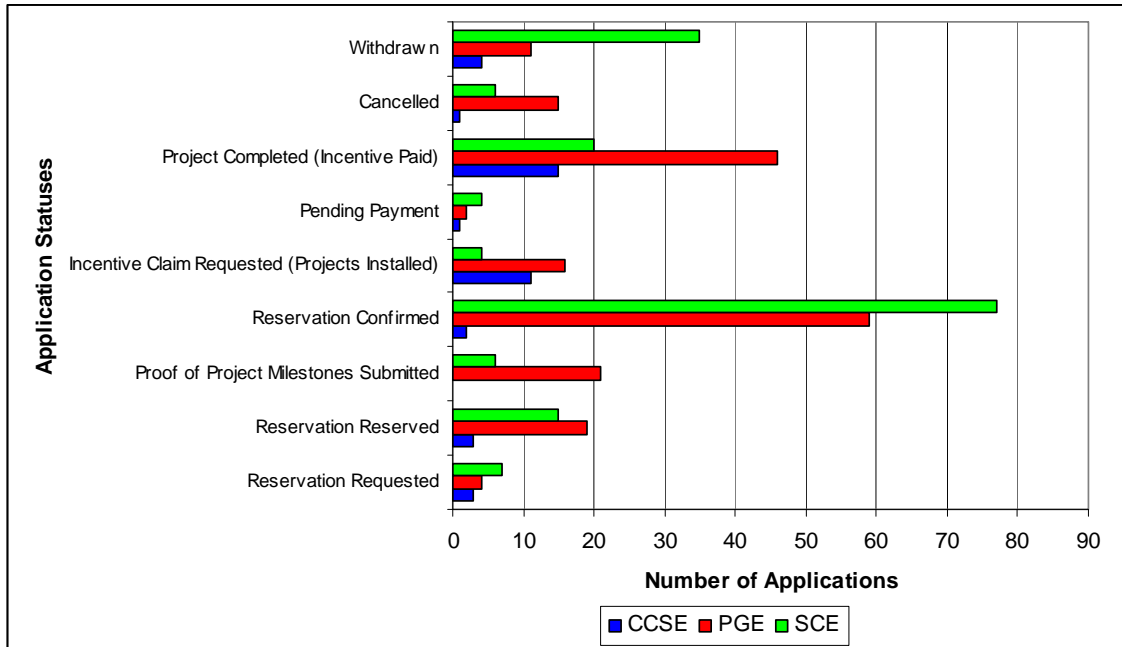
California Center for Sustainable Energy: <https://energycenter.org/index.php/incentive-programs/multifamily-affordable-solar-housing>

Pacific Gas & Electric:

[http://www.pge.com/includes/docs/word\\_xls/shared/solar/csi/mash\\_stats.xls](http://www.pge.com/includes/docs/word_xls/shared/solar/csi/mash_stats.xls)

Southern California Edison: <http://asset.sce.com/Documents/Shared/MASHStats.xls>

**Chart 1: Applications by Status**



### 3.2. MASH Track 2 Incentives

As shown in Table 5, a total of \$8,151,399 has been awarded to 13 different Track 2 projects across all PA territories. The first MASH Track 2 application cycle opened in July 2009, and to date the program has held three cycles.

Both PG&E and SCE Track 2 projects are in the Proof of Project Milestone stage and will be nearing the Incentive Claim process. CCSE has one Track 2 project completed in June and is in the process of completing the second project.

**Table 5: Summary Data: Total MASH Track 2 Applications by Status**

| Summary Data (Track 2)     |             |             |             |              |
|----------------------------|-------------|-------------|-------------|--------------|
| AWARDED APPLICATIONS       | CCSE        | PG&E        | SCE         | Total        |
| Application (Number)       | 2           | 7           | 4           | 13           |
| Capacity (MW)              | 0.115       | 0.513       | 0.693       | 1.321        |
| Incentives (\$ Million)    | \$820,000   | \$2,598,023 | \$4,733,376 | \$8,151,399  |
| Incentive Budget Remaining | \$1,240,000 | \$6,141,977 | \$4,466,624 | \$11,848,601 |

Data: October 16, 2008 – June 30, 2011

Note: All system capacity measured in CEC-AC MW

### 3.3. MASH Track 1 Activity

The charts and tables in this section illustrate detailed MASH Track 1 activity based on several data points such as application status, number of active applications, system capacity and incentive dollars. Active status is defined as applications that are either under review, reserved or completed.

As shown in Table 6 below, there are currently 8.675 MW reserved and 0.624 MW of capacity under review for Track 1A incentives, designed to serve common area load. The PAs have a total of 2.595 MW on their waitlists. So far, 1.982 MW of solar has been completed under Track 1A.

**Table 6: Detailed Data: MASH Track 1A (Common Area) Applications by Status**

| <b>UNDER REVIEW</b> | <b>CCSE</b> | <b>PG&amp;E</b> | <b>SCE</b>   | <b>Total</b>        |
|---------------------|-------------|-----------------|--------------|---------------------|
| Capacity (MW)       | 0.000       | 0.088           | 0.536        | <b>0.624</b>        |
| Incentives          | \$0         | \$279,367       | \$2,536,886  | <b>\$2,816,253</b>  |
| <b>RESERVED</b>     |             |                 |              |                     |
| Capacity (MW)       | 0.050       | 4.338           | 4.287        | <b>8.675</b>        |
| Incentives          | \$167,809   | \$12,851,845    | \$13,825,936 | <b>\$26,845,590</b> |
| <b>COMPLETED</b>    |             |                 |              |                     |
| Capacity (MW)       | 0.299       | 1.157           | 0.526        | <b>1.982</b>        |
| Incentives          | \$987,274   | \$3,648,666     | \$1,685,383  | <b>\$6,321,323</b>  |
| <b>WAITLISTED*</b>  |             |                 |              |                     |
| Capacity (MW)       | 0.070       | 2.200           | 0.325        | <b>2.595</b>        |
| Incentives          | \$273,133   | \$6,882,486     | \$1,052,025  | <b>\$8,207,644</b>  |

Data: October 16, 2008 – June 30, 2011

All system capacity measured in CEC-AC MW

\*Note: All Waitlisted Incentive amounts are based on the incentive level, \$3.30/W prior to the July 14, 2011 CPUC Phase I Decision to reduce the incentive level to \$1.90/W

Table 7 below shows that there are 5.742 MW reserved and nearly 1.352 MW of capacity under review for Track 1B incentives, which are designed to offset load for tenant units. So far, 2.428 MW of solar projects has been completed under Track 1B. For this track, CCSE has a waitlist of 1.345 MW, worth \$3,691,185 million in incentives, PG&E has a waitlist of almost 0.94 MW, worth \$3,576,497 million, and SCE has a waitlist of 0.176 MW, worth \$703,989.

**Table 7: Detailed Data: MASH Track 1B (Tenant) Applications by Status**

| <b>UNDER REVIEW</b> | <b>CCSE</b> | <b>PG&amp;E</b> | <b>SCE</b>  | <b>Total</b>        |
|---------------------|-------------|-----------------|-------------|---------------------|
| Capacity (MW)       | 0.274       | 0.122           | 0.956       | <b>1.352</b>        |
| Incentives          | \$1,084,012 | \$452,296       | \$3,790,178 | <b>\$5,326,486</b>  |
| <b>RESERVED</b>     |             |                 |             |                     |
| Capacity (MW)       | 0.746       | 2.938           | 2.058       | <b>5.742</b>        |
| Incentives          | \$2,970,128 | \$12,073,955    | \$8,081,689 | <b>\$23,125,772</b> |
| <b>COMPLETED</b>    |             |                 |             |                     |
| Capacity (MW)       | 0.651       | 0.569           | 1.208       | <b>2.428</b>        |
| Total Incentives    | \$2,530,011 | \$1,999,219     | \$4,735,960 | <b>\$9,265,190</b>  |
| <b>WAITLISTED*</b>  |             |                 |             |                     |
| Capacity (MW)       | 1.345       | 0.940           | 0.176       | <b>2.461</b>        |
| Incentives          | \$3,691,185 | \$3,576,497     | \$703,989   | <b>\$7,971,671</b>  |

Data: October 16, 2008 – June 30, 2011

All system capacity measured in CEC-AC MW

\*Note: All Waitlisted Incentive amounts are based on the incentive level, \$4.00/W prior to the July 14, 2011 CPUC Phase I Decision to reduce the incentive level to \$2.80/W

Chart 2: Projects by System Size

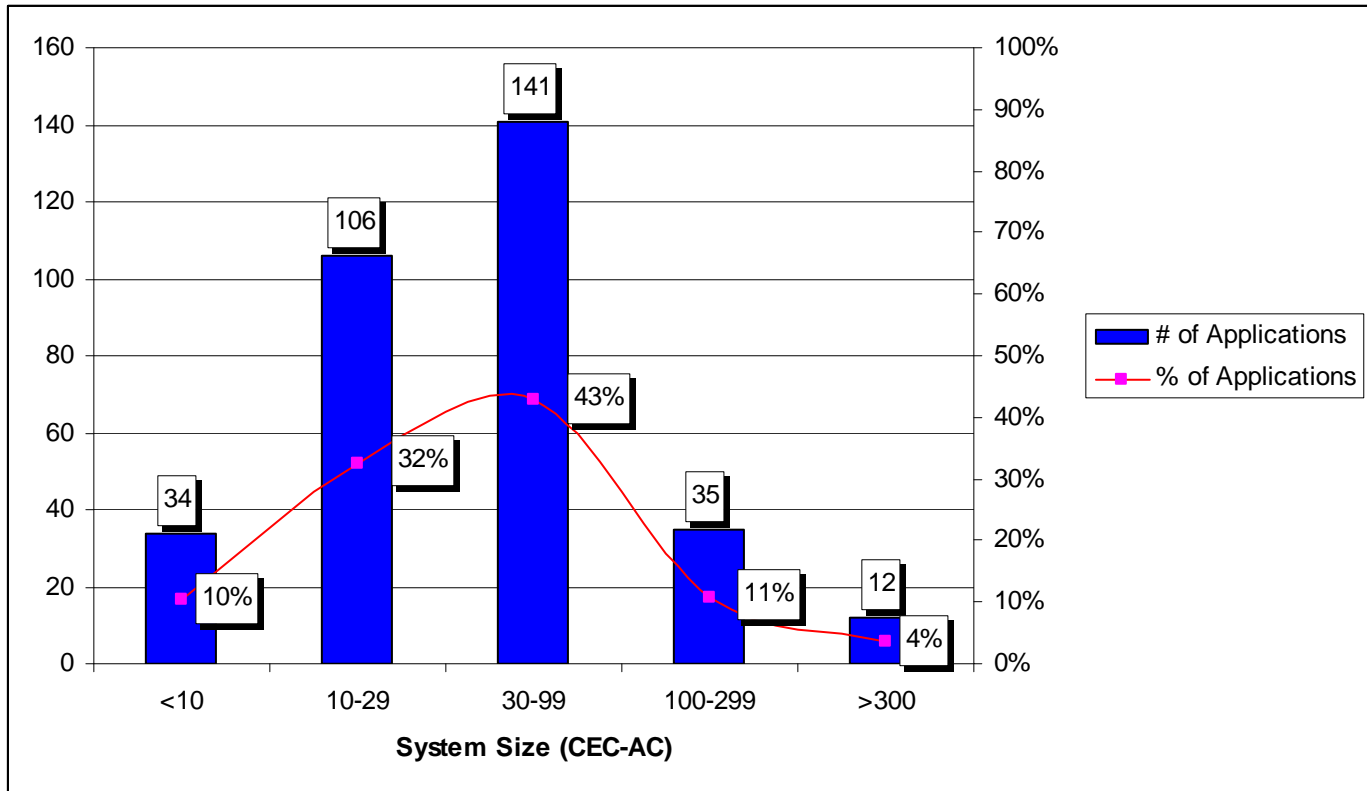
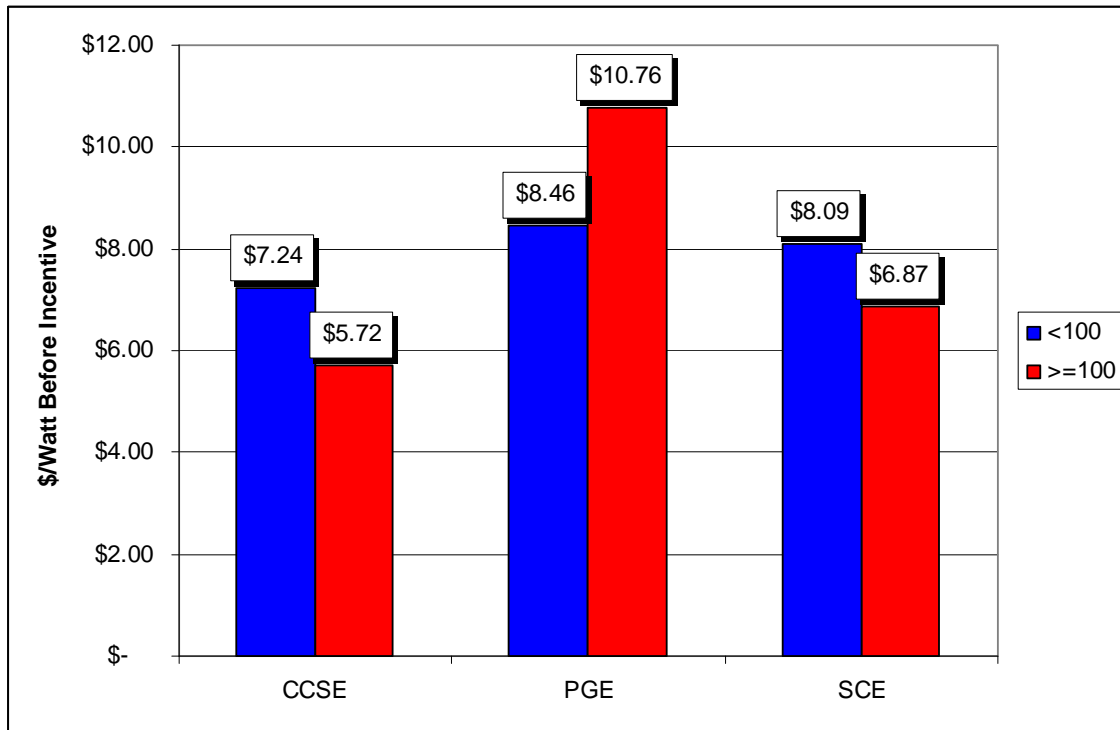


Chart 2 indicates that a significant portion of projects across all PA territories are in the range of 30 to <100 kW CEC-AC, with an average project size of 62 kW.



Chart 3: Average Cost per Watt by Project Size



The data pulled for Chart 3 consists of projects that have been completed or are in pending payment. Chart 3 shows some cost variability between the PA territories. Looking at the average cost per watt, systems less than 100 kW CEC-AC cost more than systems 100 kW and greater in CCSE and SCE's territories. This is consistent with the general market CSI program, where economies of scale lead to cost efficiencies in larger systems. PG&E's program data only includes 1 application greater than 100 kW, which maybe a reason why the data does not support the theory of economies of scale. Please reference Chart 1 for application status. The chart above includes 3 CCSE projects greater than 100kW and 24 projects that are less than 100kW. SCE includes 6 projects greater than 100kW and 18 less than 100kW. PG&E includes 1 project greater than 100kW and 47 less than 100kW.

### 3.4. MASH Program and Marketing Assessment

The Commission hired Navigant Consulting, Inc., (Navigant) to perform in-depth assessment of the design, delivery, operations, and impact of the two CSI low-income programs – MASH and SASH. In D.06-08-058, the Commission decided to institute periodic reviews, every two years, through the duration of the CSI Program and directed

the Commission to conduct a biennial evaluation (study) of the low-income component of the CSI Program.

Navigant Consulting issued the following reports as a result of their assessment:

1. The Program Administrator Performance Assessment Report provides a review of the implementation, structure and operations of the programs and recommends modifications to both programs based on the research findings. The report includes a review of some of the following areas for the MASH programs:
  - Program Challenges and Successes
  - Project Funding
  - Incentive Structure
  
2. The Market Assessment Report identifies opportunities to improve the MASH program and includes a review of the following areas:
  - Market Channels
  - Market Drivers
  - Program Spillover
  - Sustainability

On May 23, 2011 the Commission provided notice that the Multifamily Affordable Solar Housing Program (MASH) Program Administrator Performance Assessment Report and the Market Assessment Report are available online.

The MASH Program Administrator Performance Assessment Report can be accessed at:  
[http://www.cpuc.ca.gov/NR/ronlyres/3A60572D-725B-434E-A525-077428DE4E5D/0/CSIMASHandSASHPAAssessmentReport\\_2011.pdf](http://www.cpuc.ca.gov/NR/ronlyres/3A60572D-725B-434E-A525-077428DE4E5D/0/CSIMASHandSASHPAAssessmentReport_2011.pdf)

The MASH Market Assessment Report can be accessed at:  
<http://www.cpuc.ca.gov/NR/ronlyres/EB601615-61B3-43B2-B034-EEC95AF46708/0/CSISASHandMASHMarketAssessmentReport.pdf>

## 4. Regulatory Update

Since the December 2010 MASH semi-annual report, the program has been affected by the following regulatory activities:

- On April 5, 2011, the Energy Division approved SCE's 2011 MASH Marketing and Outreach plan that was filed on December 15, 2010.
- On April 20, 2011, the Commission granted the MASH PAs' request to extend the postponement of the fourth cycle for Track 2 incentives to December 31, 2011. The request was in response to issues raised in a CPUC Scoping Memo and Ruling that included a recommendation to reallocate all unreserved Track 2 incentive funds to Track 1.<sup>15</sup>

### 4.1 CSI Program Phase One Modifications Decision Summary

On June 14, 2011, a proposed decision was issued by the Commission that modifies several prior decisions that established and implemented the CSI Program. The modifications are part of the Phase One modifications outlined in the July 26, 2010 CPUC Ruling. On July 20, 2011, the Commission issued D.11-07-031, which adopted the CSI Phase One modifications effective as of July 14, 2011. The MASH-specific issues identified in the Staff Proposal are listed in Table 3 below. Some of the changes to the MASH program resulting from D.11-07-031 require the PAs or the utilities to file advice letters and CPUC's approval of the advice letters before the changes take into effect.

For specific details on the CSI Phase One Modifications decision, go to:

[http://docs.cpuc.ca.gov/PUBLISHED/FINAL\\_DECISION/139683.htm](http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/139683.htm)

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<sup>15</sup> On April 15, 2011, SCE on behalf of the MASH PAs, filed a request for postponement of MASH Track 2 fourth cycle. The CPUC previously approved the MASH PAs' request to postpone the Track 2 fourth until April 29, 2011.

**Table 3: MASH Specific Staff Proposal**

| <b>Staff Proposal Section Number</b> | <b>MASH-related Issue</b>  | <b>Outcome</b>   |
|--------------------------------------|--|--|
| Section 2.2                          | Service Delivery Point as the Boundary of Eligibility for Virtual Net Metering (VNM) Service | SCE and SDG&E are directed to file advice letters to revise their respective VNM tariffs to match the revision to PG&E's NEMVNMA tariff. In addition, PG&E is directed to file an advice letter to remove the sunset date from its VNM tariff language.  |
| Section 2.3                          | Expansion of VNM to all Customers  | PG&E, SCE and SDG&E are directed to file advice letters with modifications to their NEM tariffs to allow VNM to apply to all residential, commercial and industrial multitenant and multi-meter properties, with the limitation that sharing of bill credits can only occur for accounts served by a single SDP. |
| Section 2.4                          | Expansion of VNM to all Affordable Housing Customers   | Affordable housing properties that are not able to receive a MASH incentive may still take part in VNM   |
| Section 6.6                          | Increasing Incentives Available for Sold Out MASH Track 1                                    | PAs are directed to shift all remaining funds from Track 2 to Track 1 and decrease Track 1 incentive rates from \$3.30/\$4.00 per watt to \$1.90/\$2.80 per watt. PAs are also directed to add an application fee.   |
| Section 6.7                          | Two year Occupancy Requirement for Eligibility for MASH                                      | The two-year occupancy requirement for the MASH program will be removed, but we will maintain the requirement that projects cannot receive incentives from both NSHP and MASH.   |

## 5. Conclusions

- A total of \$15,586,512 in incentives has been disbursed and 4.410 MW of capacity have been installed through Track 1, with an additional 16.398 MW of capacity expected from active reservations.
- A total of \$8,151,339 and 1.327 MW of capacity have been awarded through Track 2.
- The rapid success of Track 1 incentives and the extensive Track 1 application waitlist demonstrates high market demand for Track 1 at current incentive amounts.
- D.11-07-031 which adopted the CSI Program Phase One modifications includes MASH-related program changes that will shape the program going forward.