California Solar Initiative

California Public Utilities Commission
Staff Progress Report
October 2008

GO solar CALIFORNIA

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The California Public Utilities Commission (CPUC or Commission) Energy Division staff prepared this report to describe recent progress on the California Solar Initiative, the country's largest solar incentive program.

In January 2007, the State of California launched the Go Solar California campaign, an unprecedented $3.3 billion effort that aims to install 3,000 MW of new grid-connected solar over the next decade and to transform the market for solar energy by dramatically reducing the cost of solar. As part of the statewide solar effort, the CPUC initiated the investor-owned utility solar program, known as the California Solar Initiative (CSI) on January 1, 2007. The CSI has generated enormous new demand for solar in California. This report focuses exclusively on CSI program developments and consumer demand, and does not report on the other parts of the state's solar offerings, such as the California Energy Commission's (Energy Commission) New Solar Homes Partnership (NSHP) which funds solar installations on new home construction or the dozens of small solar programs administered by the state's 40+ municipal utilities (or publicly owned utilities, POUs). See Section 2 for additional background information.

Cover Photo Credits:
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Marin Center Exhibit Hall and Showcase Theater
Location: San Rafael, CA
System Size: 205 kW
Installer: Sun Technics, installed August 2007

Executive Summary

In the first nine months of 2008, California has already installed more solar PV capacity than in any previous year and continues to see record demand for new solar projects.

For the first three quarters of 2008, installed capacity in investor-owned utility territories in California is already 111 MW - which is 37 percent higher than the total statewide grid-tied installed capacity in California for all of 2007.

California has installed 392 MW of grid-tied PV, including 111 MW added so far this year, as shown in Figure 1. As shown in Table 1, in the first nine months of 2008, the CSI program has installed 93 MW of grid-tied distributed solar PV capacity in the service territories of the three investor owned utilities (IOUs) – Pacific Gas & Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E). In addition, 18 MW were installed through the Self-Generation-Incentive Program (SGIP)- a program that closed in December 2006. In total, the 111 MW installed in California's IOU territories in just the first nine months of 2008 represent a 37 percent increase over the previous year's statewide total of 81 MW.

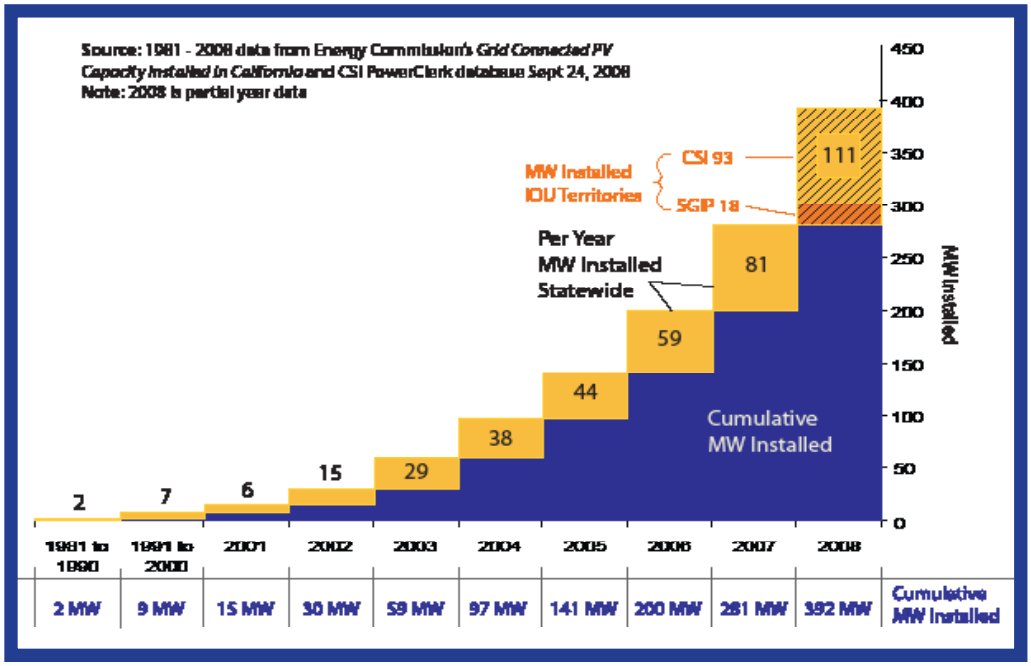
The CSI program has installed 121 MW of total capacity since the program's inception in January 2007.

Table 1. California installed solar year-to-date 2008, CPUC programs only

	# Applications	*MW*
CSI -PowerClerk	7,118	*86 MW*
CSI - SGIP Transitional Projects	36	*7 MW*
CSI Subtotal	7,154	*93 MW*
SGIP Projects	71	*18 MW*
Total	**7,225**	***111 MW***

Note: CSI Projects = all projects funded by the CSI incentive budget. SGIP data from SGIP database.

Figure 1. Grid Installed PV Capacity in California, 1981 through 2008



As shown in Table 2, from the start of the CSI program on January 1, 2007 through September 24, 2008 the CSI program has installed 9,802 projects, totaling 121 MW of distributed rooftop solar PV in California. Over 7,225 applications have been installed in 2008 alone. Installations for CSI started slowly in 2007 due to the standard length of time it takes large projects to move from the application stage to completion (often over a year). Therefore, projects initiated under prior programs unsurprisingly constituted the bulk of the completed installations in 2007. This year, however, more CSI projects began reaching completion, and the program has installed 93 MWs in the first nine months – including 46 MWs in the third quarter alone. CSI-SGIP transition projects, which are those SGIP projects reserved after the start of the CSI Program on Jan. 1, 2007, and reserved against the CSI incentive budget, represent 7MW of installed capacity in 2008.

Demand for incentives under the California Solar Initiative increased dramatically in the third quarter of 2008, breaking records for most applications in a single quarter and most applications in a single month.

The CSI Program received more than 3,000 applications for new projects in the quarter spanning July, August, and September 2008, exceeding the total number of applications received in any previous quarter. Moreover, as shown in Figure 2, the CSI program administrators received more than 1,200 applications in August alone, breaking the previous record for total applications in a single month by nearly 20 percent. Applicants received in the third quarter of 2008 represent a 26 percent increase over applications received in the second quarter, although this may be do to a slight decline in applications in the second quarter.

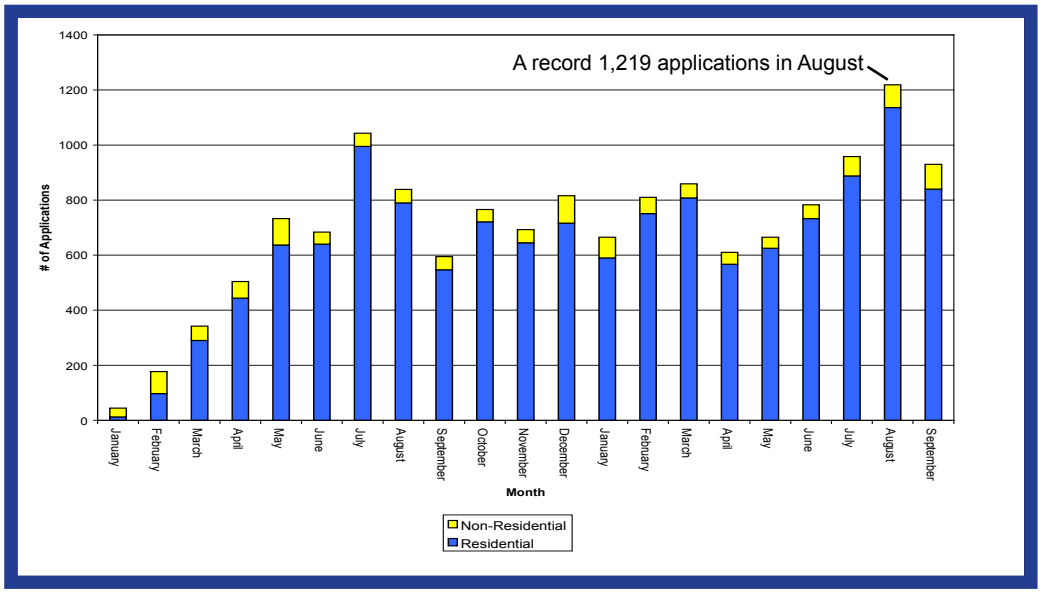
In total, the CSI program has received 15,469 applications since its inception in January 2007, of which 14,850 applications are still active (see Table 2). These active applications, which includes those projects that have been built and those still in the queue, add up to a total of 301 MW. (Active does not include any projects that were cancelled from the program.)

Program demand has increased in spite of declining CSI incentives and uncertainty surrounding the renewal of the federal investment tax credit (ITC) for renewable energy.

The 26 percent increase in program demand experienced in the third quarter of 2008 is particularly striking given the declining incentive structure built into the CSI program. Because the CSI program is designed so that incentives decline as the market grows for distributed rooftop solar PV, incentives have in some cases fallen by as much as 38 percent, from $2.50/watt to $1.55/watt (Figure 5, pg. 10). Thus, the CSI program experienced record demand in August *despite* reduced incentives since the start of the program.

Moreover, this high demand for solar PV incentives occurred in spite of uncertainty over whether the federal ITC for renewable energy would continue past December 2008. Although it is possible that some program participants would rush to file applications

Figure 2. Total Applications - By Customer Segment, Jan. 1, 2007 - Sept. 24, 2007



Source: CSI PowerClerk online database, Sept 24, 2008. **Note:** Total does not include cancelled or withdrawn projects.

Table 2. All CSI projects, Jan. 1, 2007 - Sept. 24, 2008

		Active CSI Projects		Total
		CSI - PowerClerk	CSI - SGIP Transitional Projects	
Pending Projects	Applications	5,008	40	5,048
	MW	*164 MW*	*16 MW*	*180 MW*
	Incentive $million	$432	$41	$473
Installed Projects	Applications	9,727	75	9,802
	MW	*105 MW*	*16 MW*	*121 MW*
	Incentive $million	$278	$39	$317
Total	**Applications**	**14,735**	**115**	**14,850**
	MW	***269 MW***	***32 MW***	***301 MW***
	Incentive $million	**$710**	**$80**	**$790**

Note: Total does not include cancelled or withdrawn projects. CSI - SGIP Transitional Projects from SGIP database, September 2008, all other data from PowerClerk database Sept. 24, 2008.

prior to the expiration of the incentives, it also seems likely that the risk of expiration would cause some potential participants to delay applying until the tax treatment became more certain.

On October 2, as part of the Economic Stabilization package, Congress passed and the President signed into law an 8-year extension of the federal ITC. The ITC, which was set to expire on December 31, provides homeowners and businesses a federal tax deduction equal to 30 percent of the cost of their solar PV system. While the version of the ITC that is set to expire is capped at $2,000 for homeowners, the new ITC removes this cap, allowing homeowners to claim the full 30 percent. This change will improve the financial attractiveness of solar PV to homeowners and will likely help the solar industry maintain its high level of growth in the coming years. Staff estimates that the new ITC will improve solar project economics for residential customers by $6,000 - $10,000 (assuming an average residential system size of 4 kW).

In addition, the newly authorized version of the ITC will last for 8 years, more than twice as long as expiring version, which was only authorized for 3 years. The longer life of the new tax credits should give the solar industry greater certainty in making long-term decisions, such as investment in plant and equipment. The ITC now matches the term of the CSI, which runs through 2016.

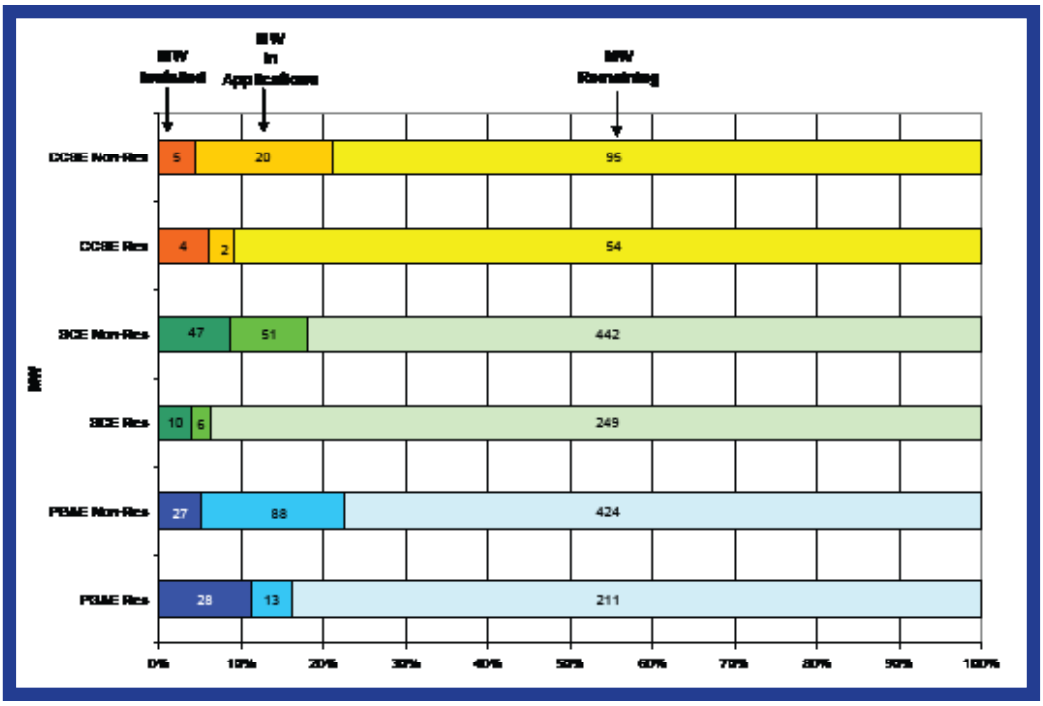
The CSI program is driving an unprecedented level of capital investment in solar technology in California -- estimated at nearly $4 billion.

Currently there is a total of $790 million in incentives reserved or paid under the CSI Program as shown in Table 2. This total includes $317 million in incentives for systems already installed and another $473 million expected to be spent based on applications in the pipeline. The program has another $1 billion in incentives to spend before the end of 2016. Since CSI incentives currently represent about 20 percent of solar project costs, it is estimated that the CSI program is supporting nearly $4 billion in solar investments in California. With the support of CSI and the federal ITC, the solar industry is growing rapidly in California, despite a slowdown in other parts of the economy.

The solar PV industry in California continues to grow at nearly 40 percent per year, and growth appears to be accelerating.

California presently has approximately 392 MWs of distributed solar PV capacity installed statewide, and the total is growing rapidly. Figure 3 shows how much progress the California Solar Initiative has made towards its goal of 1,750 MW installed by 2016. The distributed solar PV industry in California has been growing at roughly 35 percent per year since 2005, a breakneck pace for any industry. That growth appears to be accelerating, even as the overall economy is slowing in the United States. In 2006, the industry grew by 34 percent, and in 2007, the industry grew by 37 percent. In the first nine months of 2008 alone, installed capacity grew by another 37 percent over 2007. That means that by the end of 2008, California is likely to see an industry growth rate of well over 40 percent relative to last year.

Figure 3. CPUC Progress Towards 1,750 MW Goal (MW)



Source: CSI PowerClerk online database, Sept 24, 2008. **Note:** Total does not include cancelled or withdrawn projects.

In the third quarter of 2008, the CPUC made progress on several aspects of program implementation and moved forward on areas of CSI outside of the general market program.

Measurement and Evaluation plan approved. On July 29, the Commission approved a $47 million plan to measure progress and evaluate the success of the CSI program as the program moves forward. The Measurement and Evaluation Plan is composed of three elements. In addition to the quarterly reports that are currently issued, the CPUC will pursue evaluation reports looking at five elements of the program – including cost-effectiveness and market transformation. In addition, the CPUC will conduct annual program assessments, as required, for the legislature.

Performance Data Protocols finalized. Also finalized this summer was a set of protocols for measuring and reporting data from CSI systems receiving incentives under the Performance-Based Incentive (PBI) structure. In July, the three program administrators filed a final version of the Performance Data Provider protocols, which establish requirements by which a non-utility may become a performance data provider and the protocols under which the data should be provided for payment of PBI incentives.

Low-Income programs move forward. Both the single-family and multi-family low-income programs made significant progress towards getting up and running over the past quarter. A Program Manager, Grid Alternatives, was selected in July to administer the Single-Family Low Income Program, following a competitive Request for Proposals issued by the CPUC in April. Following the finalization of contract negotiations and program design, the Single-Family Low Income Program is expected to open for applications in winter 2008-2009.

Likewise, the Multi-Family Affordable Solar Housing (MASH) program is also moving forward. Commissioner Peevey released a Proposed Decision on September 9 setting the overall policy for the $108 million incentive program. In that decision, the three CSI program administrators were chosen to administer the MASH program. Incentives through the program are expected to be available in the first quarter of 2009.

CSI Program Administrators meeting application processing goals. Since March 2008, all three CSI program administrators have met their goals for residential application processing times. The California Center for Sustainable Energy (CCSE) has been processing nearly 100 percent of its residential applications in 30 days or less, Southern California Edison (SCE) has been processing around 93 percent of residential applications in 30 days or less, and Pacific Gas and Electric Co. (PG&E) has been processing around 90% of residential applications in 30 days or less.

California Leads Nation in Grid-Tied Photovoltaic Market

In August 2008, the Interstate Renewable Energy Council (IREC) released Larry Sherwood's *U.S. Solar Market Trends for 2007* report. This work was funded by the U.S. Department of Energy through the Solar America Initiative. The report includes installed grid-tied PV installation figures for every state in the country for 2006 and 2007.

The *U.S. Solar Market Trends for 2007* report provides context for understanding the progress of the California Solar Initiative compared to the rest of the country. IREC's report shows that California continues to be the dominant market for solar in the U.S.

- California has 69 percent of all of the grid-tied PV capacity in the U.S. cumulative to date through 2007. The next largest states are New Jersey with 9 percent, and Arizona and Nevada -- each with 4 percent of the nation's total installed solar capacity.
- Nationwide -- the country has about 476 MW (DC) of installed, grid-tied PV capacity cumulative through 2007, of which 329 MW (DC) are installed in California. (Note: The rest of this Staff Progress Report reports progress in units of MW CEC-AC, rather than MW DC.)
- California had installed about 33,000 out of the nation's 48,000 solar systems by the end of 2007.
- In 2007, California installed 58 percent of all newly installed grid-tied PV capacity connected in the U.S. over the course of the year. Over 90 percent of grid-connected installations in 2007 were in just five states: California, New Jersey, Nevada, Colorado, and New York.
- California is # 1 in Cumulative Installed Capacity per person in the U.S. with 9.1 watts per person .
- The capacity of PV installations completed nationwide in 2007 grew by 48 percent compared with 2006. As shown on pg. 3 of this report, California's growth rate was 37 percent.

The full report is available for free download at IREC's website: www.irecusa.org

CSI Program History and Background

Brief Program History

The **California Solar Initiative** is overseen by the CPUC and provides solar incentives to customers in investor-owned utility (IOU) territories of Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric. These three utilities represent about 68 percent of California's electric load. The California Solar Initiative provides cash back for solar for existing homes, as well as existing and new commercial, industrial, government, non-profit, and agricultural properties – within the service territories of the IOUs. The California Solar Initiative has a budget of $2,167 million over 10 years, and the goal is to reach 1,940 MW of installed solar capacity by 2016. This goal includes 1,750 MW from the general market program and 190 MW from the low-income residential incentive program. *This Staff Progress Report focuses only on the California Solar Initiative.*

The CSI Program builds on nearly 10 years of state solar rebates offered to customers in IOU territories, i.e. Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric.
Former solar incentive programs included the Emerging Renewables Program and the Self Generation Incentive Program.

In August 2004, Governor Schwarzenegger widened state support for solar and announced the Million Solar Roofs program.

In 2006, the CPUC collaborated with the Energy Commission to develop the framework of the CSI Program through 2016.

In August 2006, Governor Schwarzenegger signed Senate Bill 1 (Murray), which authorized the CPUC's CSI Program.[1]

In January 1, 2007, the CSI program launched and the program began operating under the CSI Program Handbook.

Incentives

Incentive Types. The California Solar Initiative pays solar consumers their incentive either all-at-once for smaller systems, or over the course of five years, for larger systems. The program's two incentive payment types are Expected Performance Based Buydown (EPBB) and Performance Based Incentive (PBI), see Table 3 below.

Incentive Levels. The California Solar Initiative offers financial incentives for solar installations based on the expected performance of a given solar installation. The expected performance is derived principally from the size of the solar array, and also takes into consideration the angle and location of the system installation. For larger systems, the incentive is based on the actual performance of the system over the first five years.

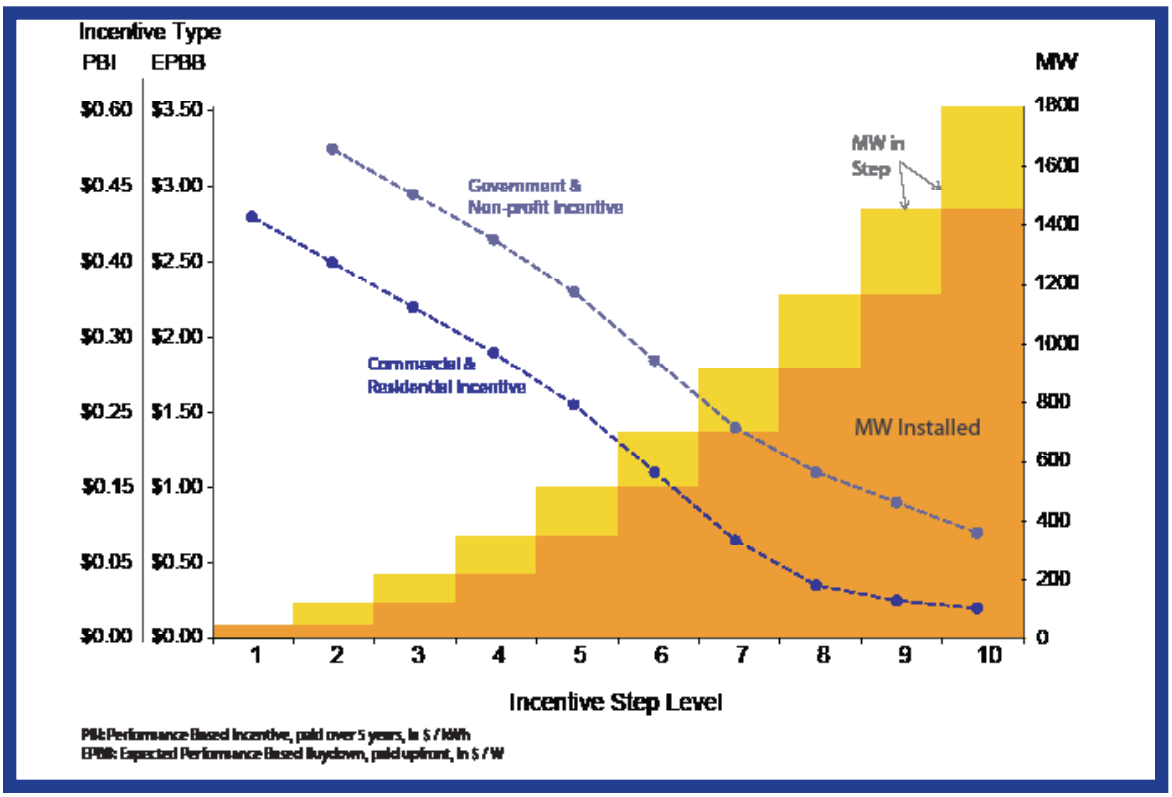
The incentive level available to a given project is determined by the currently available incentive in each utility territory for each customer class.

1 Chapter 132, Statutes of 2006 (SB 1, Murray)

Table 3. Types of Solar Incentives

Expected Performance-Based Buydown (EPBB) (Paid in dollars / Watt)	Performance-Based Incentive (PBI) (Paid in cents / kWh)
Intended for residential and small business customers	Ideal for large commercial, government & non-profit customers
Systems less than 50 kW	Mandatory for all systems 50 kW and greater Systems less than 50 kW can opt-in to PBI
Incentive paid per Watt based on your system's expected performance (factors include CEC-AC rating, location, orientation and shading)	Incentive paid based on the actual energy produced by your solar system, measured in kilowatt-hours
One-time, lump sum upfront payment	60 monthly payments over five years

Figure 4. Overview of the CSI Step Level Changes



The CSI was designed so that the incentive level decreases over ten steps, after which it is expected to go to $0, as the total demand for solar energy systems grows.[2]

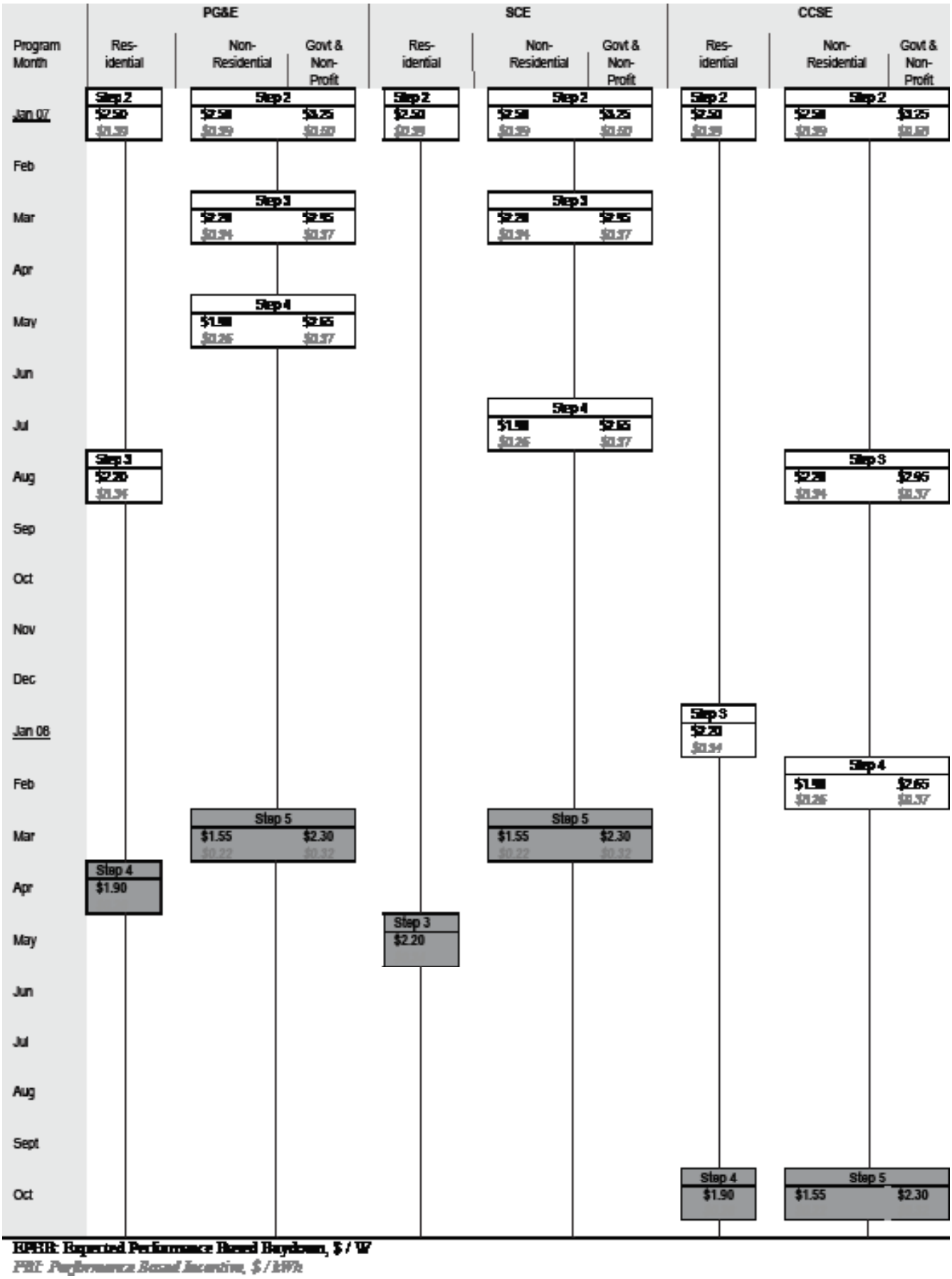
As shown in Figure 4, above, the CPUC divided the overall goal of 1,750 MW by the ten steps.[3] Each step has an incentive amount and a number of MWs. The incentive declines in each step, and the number of MWs available at each step increases. Each step has MWs allocated to each Program Administrator and customer class, residential and non-residential (a combination of commercial and government/non-profit). Once project applications (demand) for the total number of MWs for each step is reached within a particular customer class, the Program Administrator moves to the next step and offers a lower incentive level for that class. Therefore, high commercial demand in SCE's territory will not lower the incentive level offered to PG&E's residential customers, and so on. Figure 4 above offers a visual explanation of the increasing MW installations and decreasing incentive levels over the life of the program. The light orange box in each "Incentive Step Level" represents the available MWs at that incentive value. The dark orange box represents the cumulative installed MWs as the program proceeds through the steps.

The original step allocations and megawatt goals were divided among the three investor-owned utility according to a relative proportion of electricity sales. The goals (and budgets) were divided by utility territory based on a relative percentage of electricity sales, and they are PG&E - 43.7 percent, SCE - 46.0 percent, SDG&E - 10.3 percent. Figure 5 on the following page shows the currently available incentive levels how the incentive levels have declined since the start of the program in each utility territory.

2 In previous versions of the State's solar programs, incentives declined based on a calendar year regardless of demand for incentives.

3 The goal for the CPUC portion of the CSI program is 1,940 MW, divided into 1,750 MW for the general market incentive program, and 190 MW for the low-income program.

Figure 5. California Solar Initiative Incentive Levels, Current and Historic, Jan. 1, 2007 - Oct. 10, 2008



CSI Program Demand Statistics and Administrative Processing

All references to capacity are reported as CEC-AC ratings. Additional CSI Program data and information can be found in the data annex to this report, available online at www.GoSolarCalifornia.ca.gov.

Program Participation Increases Sharply in Q3. As shown in Figure 6 below, since January 1, 2007, the CSI has received 14,735 active applications (totaling 269 MW). Of those applications, a total of 105 MW (9,727 applications) have been installed. Relative to Q2, the number of applications received increased across all three territories and across all sectors by 26 percent. Noteworthy events in Q3:

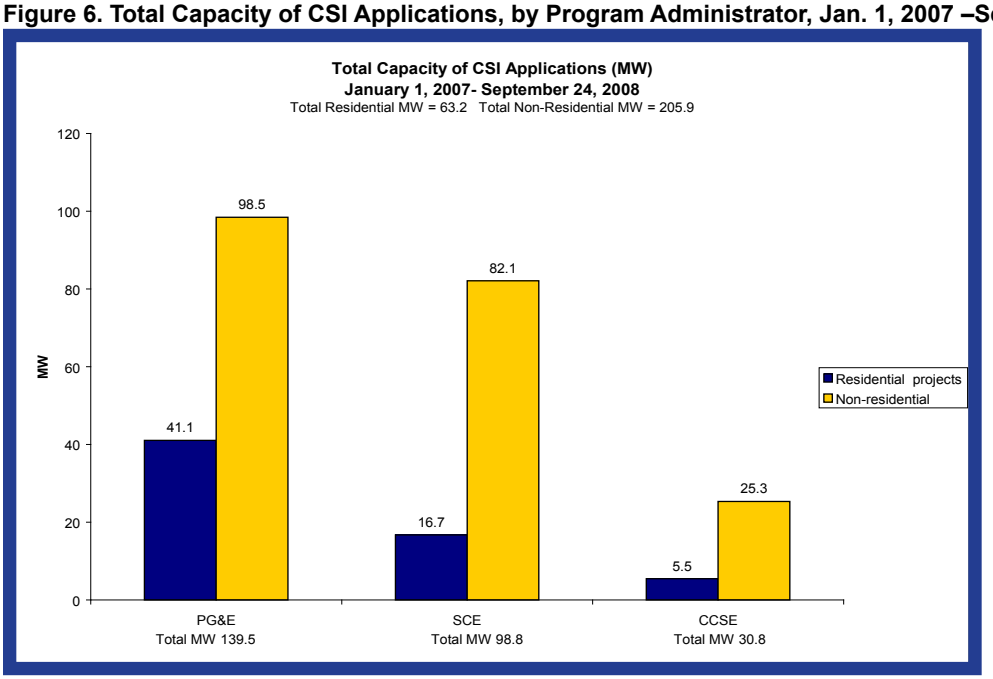
- PG&E's number of MW in residential applications has sharply increased by 24 percent from Q2.
- While SCE's capacity of non-residential applications decreased, they saw a 31 percent increase in the capacity of residential applications in Q3.
- CCSE had 30 percent increase in applications in both the residential and non-residential sectors in Q3.
- The number of non-residential projects increased by 28 percent over Q2.

Program demand reaches all-time high in August 2008. Interest in the CSI Program peaked in Q3. In August 2008, the CSI Program received over 1,200 applications, a record high since the beginning of the program.

In August 2008, SCE underwent a large data cleanup on the online database. As a result, many applications that never received a reservation were removed from the database. This is reflected in the decrease in the capacity of applications in Figure 6 below, from 92 MW in the July report to 82 MW, and in the decrease in the number of Cancelled and Withdrawn projects presented in Table 2 of this report. PG&E and CCSE went through a similar effort, which included removing duplicate applications, though it did not affect their overall number of MW and applications to the same degree.

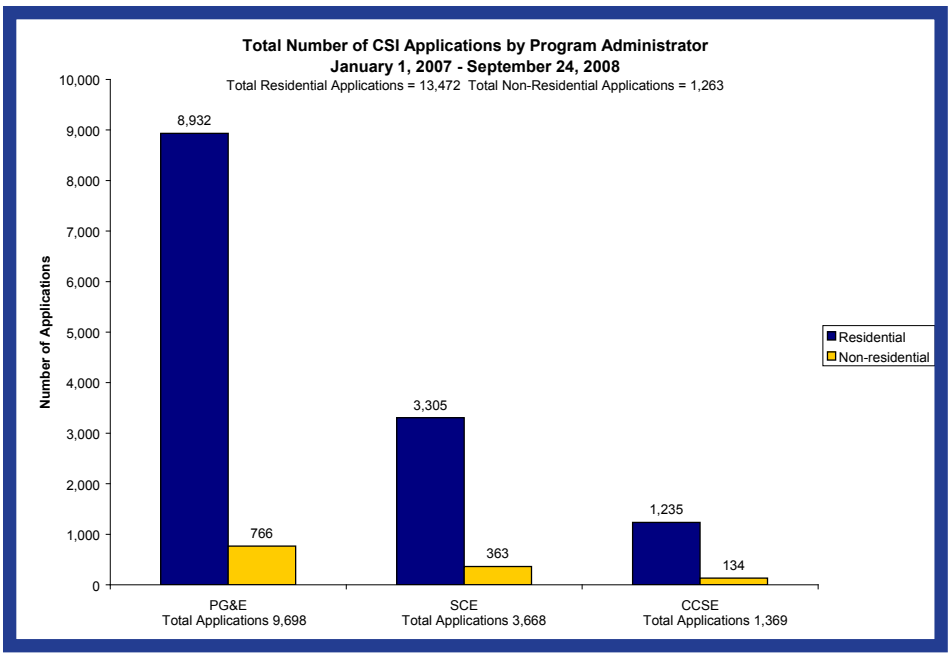
The majority of CSI projects have been installed. Over 91 percent of CSI projects are residential and these projects generally install within six months, so CSI Program data reflects that most applications have moved through the project pipeline. Applications proceed through several stages before payment – from Requested to Reserved to Completed. Residential and small commercial applicants can apply through an abbreviated two-step application process—the first step is to apply and confirm your incentive level and the second step is to submit documentation of an installed system to receive a rebate. Larger

Figure 6. Total Capacity of CSI Applications, by Program Administrator, Jan. 1, 2007 –Sept. 24, 2008



Source: CSI PowerClerk Online Database, September 24, 2008. Note: Total does not include cancelled or withdrawn projects or SGIP transition projects not in the PowerClerk database.

Figure 7. Total no. of CSI applications by Program Administrator



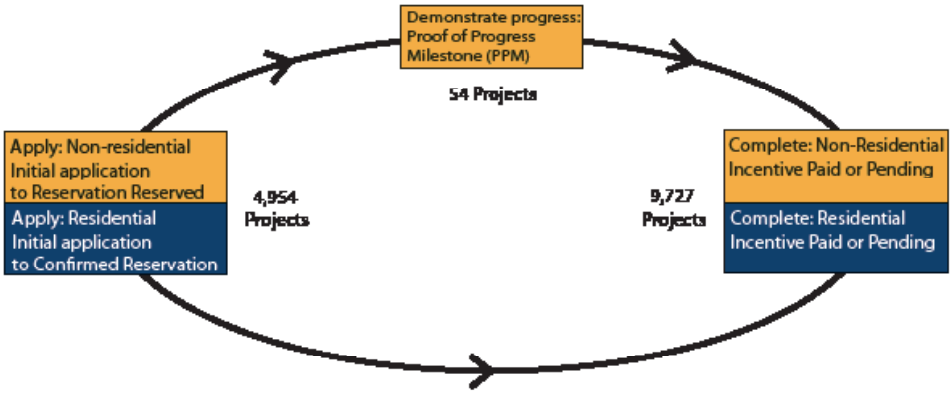
Source: CSI PowerClerk Database, Sept 24, 2008. Note: Total does not include cancelled or withdrawn projects or SGIP transition projects not in the PowerClerk database.

commercial projects have an interim application step – a milestone review and confirmed reservation stage, making a three-step process before payment. The final part of the rebate process is triggered when the applicant submits an incentive claim form, signifying that the project is installed and ready for inspection (if applicable), documentation review, and payment. The data in the table below includes all applicants – those with a two-step process as well as those with a three-step process.

As shown in Figure 8 and Table 4, while there are a significant number of applicants in Steps 1 and 2, the majority of applicants have moved to the application Step 3.

- There are 4,954 applicants in the application processing Step 1.Those projects with confirmed reservations can now begin installation.
- Another 54 applications (all non-residential) are in application processing step 2.
- Once the applicant finishes step 1 (residential) or step 2 if applicable (non-residential), the applicant proceeds with the installation, an inspection if required, and submits the final required paperwork into the Incentive Claim Form (ICF) Package. By the end of the third quarter, 9,727 projects had reached Step 3 (or Step 2 for residential projects) in the application process. *Note: All projects that have reached this final step are counted as installed projects in this report.*

Figure 8. Applications moving through the application process



Source: CSI PowerClerk Database, Sept 24, 2008. Note: Total does not include cancelled or withdrawn projects or SGIP transition projects not in the PowerClerk database.

Table 4. CSI Application Status, MW and Payments, Jan. 1, 2007 - Sept. 24, 2008

Application Process Step	Application Status	Number of Applications CCSE	PG&E	SCE	Totals	Total MW		Total Incentive $
Application Processing Step 1	Reservation Request Review	3	402	139	544	7.9	MW	$ 15,624,680
	Suspended-Reservation Review	23	135	148	306	5.5	MW	$ 9,961,221
	Reservation Reserved	31	44	38	113	29.5	MW	$ 70,651,956
	Confirmed Reservation	439	2,531	1,021	3,991	100.6	MW	$ 263,900,914
	Subtotal	**496**	**3,112**	**1,346**	**4,954**	**143.4**	**MW**	**$ 360,138,771**
Application Processing Step 2 (Only applies to non-residential)	Proof of Project Milestone Review	-	13	8	21	7.4	MW	$ 40,402,411
	Suspended-Milestone Review	1	11	10	22	8.4	MW	$ 20,268,677
	Pending RFP	-	2	7	9	4.3	MW	$ 10,205,757
	Suspended RFP Review	-	-	2	2	0.3	MW	$ 835,068
	Subtotal	**1**	**26**	**27**	**54**	**20.5**	**MW**	**$ 71,711,912**
Application Processing Step 3 (Step 2 for Residential and Small Commercial)	Incentive Claim Request Review	11	270	83	364	9.0	MW	$ 24,367,343
	Suspended-Incentive Claim Request Review	39	99	178	316	22.3	MW	$ 62,254,117
	Online Incentive Claim Submitted	27	260	29	316	1.5	MW	$ 3,043,063
	Pending Payment	105	305	302	712	9.0	MW	$ 25,846,728
	Completed	668	5,577	1,628	7,873	39.7	MW	$ 90,429,881
	PBI-In Payment	22	49	75	146	23.8	MW	$ 71,789,252
	Subtotal	**872**	**6,560**	**2,295**	**9,727**	**105.3**	**MW**	**$ 277,730,384**
All Applications Received as of 1/1/07	All Pending Projects	497	3,138	1,373	5,008	163.9	MW	$ 431,850,684
	All Installed Projects	872	6,560	2,295	9,727	105.3	MW	$ 277,730,384
	Subtotal	**1,369**	**9,698**	**3,668**	**14,735**	**269.1**	**-**	**$ 709,581,068**
CSI Projects Received Prior to 1/1/07 Under the SGIP Program	Reserved/Advancement	1	22	17	40	16.5	MW	$ 40,696,466
	Pending Payment/Complete (All Installed Projects)	-	39	36	75	15.6	MW	$ 38,881,961
	Subtotal	**1**	**61**	**53**	**115**	**32.1**	**MW**	**$ 79,578,428**
Inactive Projects	Withdrawn (Reserved projects only)	6	18	21	45	3.5	MW	$ 9,280,863
	Cancelled (Reserved projects only)	12	70	23	105	4.1	MW	$ 9,155,756
	Subtotal: Reserved Inactive Projects	***18***	***88***	***44***	***150***	***7.6***	***MW***	***$ 18,436,619***
	Cancelled (Projects that never reached reservation status)	27	185	91	303	50.8	MW	$ 122,721,586
	Withdrawn (Projects that never reached reservation status)	5	12	34	51	12.6	MW	$ 29,152,254
	Subtotal: Unreserved Inactive Projects	***32***	***197***	***125***	***354***	***63.4***	***MW***	***$ 151,873,840***
	Total Inactive Projects	**50**	**285**	**169**	**504**	**70.9**	**MW**	**$ 170,310,459**
	All Projects	**1,420**	**10,044**	**3,890**	**15,354**	**372.2**	**MW**	**$ 959,469,954**

Source: CSI PowerClerk Online Database, September 24, 2008.
Notes: (1) "Reserved Inactive Project are project that have reached "reservation reserved" for commercial, "confirmed reservation status" for residential, and "pending RFP" for government and non-profit entities.
(2) A project's system capacity (CEC-PTC rating) may change over the lifetime of a project – for example, an application may be submitted for a 4 kW PV system, but a 4.5 kW system was installed because the installer used less efficient PV system components than were expected in the beginning of the project. The "Total MW" column does not reflect these changes in system capacity throughout a project's lifetime, but only captures the size of the project as currently reflected in the database. This discrepancy accounts for the difference between the "Drop Outs" in this table and the Program Dropouts Table in the Data Annex. The latter table is calculated using the Trigger Tracker database which does account for changes in project size over time. In late June 2008, the database was modified to track changes in project size over time. Therefore, future versions of this table should more accurately reflect the changes in system size.

Program participation varies by geography. A closer look at the application requests per program administrator reveals more about the geographic and customer demand patterns, as well as administrative challenges. The number of residential applications continues to make up the overwhelming majority of all CSI applications (90 percent), while the capacity of non-residential applications (77 percent) dominate the number of MW in applications, as shown in Table 5.

Table 5. No. of applications and MW by customer type and administrator, Jan. 1, 2007 - Sept. 24, 2008

		Program Administrator							
Customer Class	**Data**	**CCSE**		**PG&E**		**SCE**		**Total**	
Residential	# of Applications	1,235		8,932		3,305		13,472	
	Applications %	8%		61%		22%		91%	
	MW	5.5	MW	41.1	MW	16.7	MW	63.2	MW
	MW %	2%		15%		6%		23%	
Commercial	# of Applications	81		550		270		901	
	Applications %	1%		4%		2%		6%	
	MW	17.9	MW	65.6	MW	62.0	MW	145.5	MW
	MW %	7%		24%		23%		54%	
Government/ Non-Profit	# of Applications	53		216		93		362	
	Applications %	0.4%		1%		1%		2%	
	MW	7.4	MW	32.8	MW	20.1	MW	60.4	MW
	MW %	3%		12%		7%		22%	
Total # of Applications		**1,369**		**9,698**		**3,668**		**14,735**	
% of Total Applications		**9%**		**66%**		**25%**			
Total MW		**30.8**		**139.5**		**98.8**		**269.1**	
% of Total MW		**11%**		**52%**		**37%**			

Source: CSI PowerClerk Database, Sept 24, 2008. Note: Total does not include cancelled or withdrawn projects or SGIP transition projects not in the PowerClerk database.

Third Party Ownership. Third party ownership is not tracked by the CSI database, but there is a reasonable proxy of this information based on looking at projects that have a "Host Customer" that is different from a "System Owner". Similarly, the CSI database does not include information on whether a "System Owner" has a Power Purchase Agreement (PPA) with the "Host Customer" because that information is not part of the CSI application process. While PPA arrangements do exist as part of third-party owned projects, there could be other financial or management arrangements between the two entities.

Table 6 below shows there are just 381 projects where "Host Customer" is different from "System Owner", but these projects have a total capacity of 114 MW.

Table 6. Third party-owned projects

Third party- owned projects	Program Administrator			Total
	CCSE	PG&E	SCE	
No. applications with different Host Customer / System Owner	54	192	135	381
No. applications – all CSI projects	1,369	9,698	3,668	14,735
Total capacity – applications with different Host Customer / System Owner (MW)	15	50	50	114
Total capacity – all CSI projects (MW)	31	140	99	269

Legislative Update
California 2008 - Solar Legislation

Below is a summary of key solar legislation that was passed by the CA Legislature this year and signed into law by Governor Schwarzenegger. In most cases, legislation signed by the Governor in 2008 will take effect on January 1, 2009.

2008 California solar legislation		
Bill (Author)	***Topic***	***Summary***
Assembly Bills		
AB 811 (Levine)	Local financing for distributed generation and energy efficiency	This bill authorizes California cities and counties to designate areas within which city officials and willing property owners may enter into contractual assessments to finance the installation of distributed generation renewable energy sources, including solar, and energy efficiency improvements.
AB 1062 (Ma)	Solar design plans for school facilities	This bill requires the State Architect to develop criteria for a precheck approval process for solar designs for school facilities. This bill also requires the Department of General Services to complete review of school solar design plan applications within 45 days of submission, and to act on corrected applications within 10 days.
AB 1451 (Leno)	Property tax exclusion for solar energy systems	This bill modifies the existing property tax exclusion for solar energy systems to specify that "the construction or addition of an active solar energy system" includes the construction of an active solar energy system on a new building in which the owner-builder incorporated solar in the initial construction and the owner-builder does not intend to occupy or use the new building. This bill extends the solar energy system exclusion through the 2015-16 fiscal year.
AB 1892 (Smyth)	Solar energy in common interest developments	This bill provides that any provision in the governing documents of a common interest development that effectively prohibits or restricts the installation or use of a solar energy system is void and unenforceable.
AB 2180 (Lieu)	Solar energy system siting approval	This bill requires homeowners associations to respond to a request from a member to install a solar energy system within 60 days. If no action is taken within that timeline, the request shall be deemed approved. The application shall be processed and approved in the same manner as an application for approval of an architectural modification to a property.
AB 2466 (Laird)	Local government renewable generation program	This bill authorizes a local government to receive a bill credit for electricity supplied to the electric grid by an eligible renewable generating facility. The generating facility and the benefitting account that receives the bill credit must both be located within the geographical boundary of the local government but do not have to be at the same site.

AB 2768 (Levine)	Time of use pricing for solar customer generators	This bill deletes the requirement that a customer who installs a solar energy system must take service on a time-of-use tariff. This bill requires that utilities offer solar customer generators the option to take service under flat rate or time-of-use pricing, if there is a flat rate pricing schedule for which the ratepayer would have qualified if the ratepayer had not installed the system.
AB 2804 (Hayashi)	CSI reservation extension for schools	This bill authorizes a school district or community college district applying for California Solar Initiative incentives to request an extension of the reservation expiration date, up to a maximum of 3 extensions of 180 calendar days for each extension.
AB 2863 (Leno)	Independent solar energy producers	This bill creates an exception from the definition of an electrical corporation for an "independent solar energy producer". This bill clarifies that the solar power purchase agreement model of third party ownership is not subject to monopoly utility regulation. This bill also requires independent solar energy producers to provide certain disclosures to residential customers, it requires all contracts for residential systems be made available to the CPUC upon request, and imposes civil liabilities for violation of such contracts.
Senate Bills		
SB 380 (Kehoe)	Small renewable feed-in-tariffs	This bill expands the small renewable generation feed-in-tariffs authorized by AB 1969 (Yee, 2006). This bill would require *every* electrical corporation to: • Offer feed-in-tariff to *any* eligible renewable generating facility with a capacity of not more than 1.5 MW; • Make feed-in-tariff available upon request, on a first come first served basis, until the combined statewide cumulative rated generating capacity of those electric generation facilities equals *500* megawatts. • For more information on CPUC implementation of AB 1969, please see http://www.cpuc.ca.gov/PUC/energy/electric/RenewableEnergy/feedintariffs.htm
SB 1399 (Simitian)	Solar shading	Existing law prohibits a person owning or in control of a property from allowing a tree or shrub to cast a shadow on a solar energy system on a neighboring property. The bill exempts trees and shrubs planted prior to the installation of the solar energy system. This bill also requires the owner of a solar energy system to provide written notice, prior to the installation of solar, to owners of neighboring properties that may be affected. The bill provides that a local ordinance specifying requirements for tree preservation or solar shade control would govern within that local jurisdiction.

CPUC CSI Administration

The CPUC's general market incentive program launched on January 1, 2007, and the CPUC has been carefully monitoring CSI Program implementation throughout the inaugural year. As program implementation issues arise, the CPUC works to address them to ensure the program's success.

Program implementation

PROGRAM FORUM. The next program forum will be held on October 15, 2008 at the San Diego Convention Center.

The CPUC established the CSI Program Forum as a quarterly public meeting intended to allow stakeholders to learn about program updates and discuss solutions to implementation issues. Program Forums were previously held in April, June and October of 2007 and January and April of 2008.[1]

MARKETING & OUTREACH. In August 2008, the CPUC and the Energy Commission re-launched the Go Solar California website, a one-stop shop for consumers, installers, media, solar industry professionals and others interested in California's solar energy programs. The new site can be viewed at www.gosolarcalifornia.ca.gov.

In addition to the new website, there is also a new consumer guide to the CSI program, created by the CSI Program Administrators (PAs) and CPUC staff. The guide contains an abundance of information useful for those considering installing solar PV systems, including how solar energy works, how much solar PV systems cost, and how to apply for state incentives.

The PAs are working in accordance with their approved 2008 Interim Marketing and Outreach plans, which include program collateral, monthly installer trainings, and a monthly electronic newsletter. The newsletter highlights regulatory activity affecting the CSI Program, PA updates, a calendar of events, and a monthly Trigger Tracker snapshot. In July, a supplemental newsletter was launched to announce the various free PA solar training opportunities and international solar conferences hosted statewide.

PROGRAM HANDBOOK. A new handbook will likely be released in the fall-winter of 2008 to comply with recently enacted changes to the program at the CPUC. Among the changes will be guidelines for how a non-utility entity may qualify as a Performance Data Provider (PDP) and the protocols for reporting performance data.

1 Program Forum presentation are available at: http://www.cpuc.ca.gov/PUC/energy/Solar/misc/070417_csiprogramforum.htm

Originally released in December 2006, the Program Handbook provides a compendium of all program rules and eligibility requirements. The CPUC periodically revises and re-releases the Handbook to reflect changes in program rules and/or modifications proposed by the PAs and approved by CPUC. The Program Handbook was last updated in February, 2008.

EPBB CALCULATOR. The CSI PAs and the CPUC are assessing how the hourly photovoltaic production calculation requirements in the Energy Commission's *"Guidelines for California's Solar Electric Incentive Program Pursuant to Senate Bill 1"* will necessitate future changes be made to the CSI Program's EPBB calculator.

The EPBB Calculator was reissued in March 2008 to incorporate changes necessary to calculate incentives for building integrated photovoltaic (BIPV) technologies.

APPLICATION PROCESSING. The Program Administrators are striving to create internal efficiencies to reduce the amount of time required to process applications. As of October 2008, the Program Administrators are all achieving their goal of processing at least 90 percent of residential application in less than 30 days. Other PA administrative metrics are being closely watched by CPUC staff, and many are reported in the Data Annex of this report.

ONLINE APPLICATION TOOL & PROGRAM DATA. The CPUC and the CSI PAs recently released a new online tutorial for CSI applicants. Using the PowerClerk software platform, the online tutorial provides step-by-step instructions for applying to the CSI program online and serves as a handy tool for getting through the application process quickly and easily.

In addition, the PAs are working on a new data reporting tool, ***California Solar Statistics***, that will make program data more accessible to the public. Program data, which is updated weekly, is currently available to at http://csi.powerclerk.com.

Program requirements

TIME OF USE RATES. In September 2008, Governor Schwarzenegger signed into law AB 2768 (Levine, 2008), which eliminates the requirement that a customer who installs a solar energy system must take service on a time-of-use tariff. This new law requires that utilities offer solar customer generators the option to take service under flat rate or time-of-use pricing, if there is a flat rate pricing schedule for which the ratepayer would have qualified if the ratepayer had not installed the system.

METERING ACCURACY & PERFORMANCE MONITORING. On July 30, 2008, the CSI PAs submitted via Advice Letter a final draft of the Performance Data Provider (PDP) protocols for performance based incentive reporting. The document describes the process and qualifications for a non-utility entity to become a PDP and details the data reporting requirements. A Commission decision on approval of the Advice Letter via Resolution is expected on November 6th. Once the new PDP protocols gain Commission approval, they will be codified into the CSI Program Handbook.

Meanwhile, the CSI metering sub-committee is continuing to work on the development of a metering accuracy testing for inverter integrated metering systems accurate to +/- 5 percent. A proposed plan for metering accuracy certification requirements and testing procedures was submitted to the CPUC by Advice Letter (PG&E AL 3239-E) on March 28, 2008. The metering sub-committee is also now working with a nationally recognized testing laboratory and a number of inverter manufacturers to test the metering accuracy certification requirements on actual inverter integrated meters.

COMPLIANCE WITH SENATE BILL 1. The CSI Program Administrators are closely following the Energy Commission's *"Guidelines for California's Solar Electric Incentive Program Pursuant to Senate Bill 1."* A draft version of the Energy Commissions's SB 1 Guidelines was released in September. Comments on that document are due in October.

Program evaluation

CSI PROGRAM MEASUREMENT & EVALUATION PLAN. On July 29, 2008, an Assigned Commissioner Ruling establishing a $47 million evaluation plan for the CSI Program was released. The ruling recommends a CSI measurement and evaluation plan composed of three elements:

(1) The CPUC Staff Progress Reports that are currently issued quarterly;

(2) Evaluation Reports, looking at five elements of the CSI program, including impact evaluations, retention and performance studies, market transformation reports, process evaluations and cost-effectiveness studies. The plan also includes support for the Net Energy Metering Cost-Benefit Analysis mandated by SB 1, audits and any optional studies need to fully evaluate the CSI program.

(3) Annual Program Assessments, which will be delivered to the legislature and include information from the Progress Reports and Evaluation Reports.

CSI DROPOUTS WORKSHOP. On July 14, 2008, the CPUC hosted a public workshop on the effects of the transition from SGIP to CSI on the CSI incentive budget and CSI Program dropouts. The CPUC and stakeholders will continue to monitor both the rate at which the CSI incentive budget is reserved and paid and the number and rate of Program dropouts. Currently, there is $22.3 million in incentives "stranded" from projects that dropped out after Program incentive levels changed. As discussed at the workshop, there are a number of other budget issues in flux, and parties did not urge a budget adjustment at this time.

Program components

BUILDING INTEGRATED PV. On March 10, 2008, the CSI EPBB calculator integrated a function that accommodates calculation of incentives for BIPV systems. This change means that BIPV systems can now fully access all available CSI incentives. An explanation of how estimated performance of BIPV systems has been included in the EPBB calculator user guide.

NON-PV SOLAR TECHNOLOGIES. There is now an application process for certifying non-PV electric displacing technologies that seek CSI incentives. Applications and reservation request forms will be available on the CSI PAs' websites in October.

The CSI PAs and the CPUC continue to work to finalize the process for certifying non-PV equipment for the CSI Program. As a process note, for non-PV electric generating technologies, all equipment must be certified eligible by the Energy Commission, while non-PV electric displacing technologies must be certified eligible by the CPUC and the CSI PAs.

SOLAR WATER HEATING PILOT PROGRAM. Energy Division hosted a workshop on August 26, 2008 to solicit stakeholder input on issues related to evaluation of the Solar Water Heating Pilot Program currently underway in the service territory of San Diego Gas & Electric. An interim evaluation of the pilot program will be released to the public prior to the end of 2008.

In June 2008, the CPUC approved a Decision allowing the program administrator, CCSE, to extend the pilot program until December 31, 2009, or until the $3 million in funding for the pilot has been exhausted. The decision also allows CCSE to offer solar hot water heating incentives to new construction buildings.

SINGLE-FAMILY LOW INCOME PROGRAM. A Program Manager, Grid Alternatives, was selected in summer 2008 to administer the program. Details of program design are currently being finalized, and the program is expected to be up-and-running in winter 2008-09.

MULTI-FAMILY AFFORDABLE SOLAR HOUSING. Commissioner Peevey released a Proposed Decision on September 9, 2008 establishing a $108 million solar incentive program for Multifamily Affordable Solar Housing (MASH) as part of the CSI. The MASH program will provide solar incentives to qualifying affordable housing developments, as defined in state law.

RESEARCH, DEVELOPMENT & DEMONSTRATION. On July 31, the Commission selected Itron as the winning bidder of a competitive Request for Proposals to manage the CSI Research Development and Deployment Program. After the grant-making strategy is finalized in the fourth quarter of 2008, the program will be ready to seek its first grant recipient in late 2008 or early 2009.

Contact Information and Other Useful Sources of Information

For press inquiries about the CPUC portion of the California Solar Initiative, contact:

Terrie Prosper, Press Office
California Public Utilities Commission
505 Van Ness Ave.
San Francisco, CA 94102-3298
Email: **tdp@cpuc.ca.gov or 415-703-2160**

For policy or program development questions about the CPUC portion of the California Solar Initiative, contact:

California Solar Initiative and Distributed Generation
Information Line: **energy@cpuc.ca.gov or 415-355-5586**

The CSI **statewide consumer website**, includes information on the CPUC, CEC, and POU programs, including the CSI Program Handbook	www.GoSolarCalifornia.ca.gov
The CSI Program Administrators use an online tool to calculate the up-front Expected Performance Based Buy down (EPBB) incentive, known as the **EPBB Calculator**	www.csi-epbb.com
The CSI Program Administrators use an online application tool and reporting database, known as **PowerClerk**	csi.powerclerk.com
Up-to-date information about the program's current incentive level, or "step" can be found on the online CSI **Trigger Tracker**	www.csi-trigger.com
Information about the **CPUC regulatory** proceeding that deals with the CSI Program	www.cpuc.ca.gov/PUC/energy/solar/
Pacific Gas & Electric Company	www.pge.com/solar
Southern California Edison	www.sce.com/CSI/
California Center for Sustainable Energy (CCSE) – offering Solar Rebates in San Diego Gas & Electric Territory and the Solar Hot Water Pilot Program	www.energycenter.org