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STAFF REPORT

New Solar Homes Partnership Program Quarterly Progress Report

(July 1-September 30, 2017)

California Energy Commission

Edmund G. Brown Jr., Governor

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O'Shea Bennett
Lucio Hernandez
Primary Authors

Elizabeth Hutchison
Contributor

Sherrill Neidich
Program Supervisor

Natalie Lee
Deputy Director
RENEWABLE ENERGY DIVISION

Drew Bohan
Executive Director

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ABSTRACT

The New Solar Homes Partnership (NSHP) Program is integral to California’s continuing efforts to promote and develop clean, renewable electricity generation. This report provides a quarterly update on key NSHP Program statistics, including program status and activity for market-rate and affordable housing projects, geographical and income distribution of NSHP incentives, and available funds for incentives. This report is produced in response to the June 9, 2016, California Public Utilities Commission (CPUC) Decision 16-06-006, “Decision Funding Authorizations and Related Measures for Continuation of the New Solar Homes Partnership Program.”

Keywords: New Solar Homes Partnership, NSHP, Energy Commission, California Public Utilities Commission, CPUC, Decision 16-06-006, market-rate, affordable housing

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CHAPTER 1:

Introduction and Background

Senate Bill 1 (Murray, Chapter 132, Statutes of 2006) established the California Solar Initiative (CSI) with three goals: (1) installing solar energy systems with a generating capacity equivalent to 3,000 megawatts (MW), (2) establishing a self-sufficient solar industry within 10 years, and (3) placing solar energy systems on 50 percent of new California homes by 2020. The CSI is being implemented by the California Energy Commission, the California Public Utilities Commission (CPUC), and the state's local publicly owned electric utilities in different programs that share the same broad goals.¹

The NSHP Program is the Energy Commission's component of the CSI and is limited to new home construction in investor-owned utility (IOU) service territories. Launched in January 2007, the program provides financial incentives for homeowners, builders, and developers to include solar energy systems on new, energy-efficient homes that will contribute to the CSI goals. The NSHP goal under the CSI is 360 MW of installed solar capacity.

SB 1 established the NSHP as a \$400 million program under the CSI, and the initial monies allocated to the program totaled about \$282 million through 2011. The CPUC approved Decision 16-06-006 on June 9, 2016, requiring the IOUs to collect funds from ratepayers totaling \$111.78 million to continue the NSHP Program. This decision also directs the Energy Commission to submit quarterly and annual reports to the CPUC, and this quarterly report fulfills this requirement for the period covering July 1, 2017 to September 30, 2017.

¹ As of July 12, 2016, the residential CSI Program for solar photovoltaic systems has closed for residential customers of all investor-owned utilities and is no longer accepting applications. The CSI Program has also closed for nonresidential customers of Pacific Gas and Electric Company and San Diego Gas & Electric Company.

CHAPTER 2: Program Status and Activity for All Project Types

Reservation Applications

Participation in the NSHP Program is a two-step process in which applicants 1) reserve funding for a project in advance and 2) receive an incentive payment upon completion of the project. Funding is secured through reservation applications that applicants submit to the Energy Commission. Once the reservation application is approved, applicants have the reservation period to complete their project, which includes finishing construction of the home, installing the solar energy system and interconnecting with the utility grid, completing third-party field verifications, and submitting a payment claim package to the Energy Commission.

Reservation applications are approved based on the date they were submitted, and funding is reserved for either an 18- or 36-month reservation period, depending on the project type. *Solar as standard* projects are developments of six or more residential units with solar on 50 percent or more of the dwelling units and receive a 36-month reservation period. Affordable housing projects, which include residential unit projects and common area projects in which at least 20 percent of the units are subject to income restrictions by a qualifying regulatory agreement, also receive a 36-month reservation period. Other projects include small developments of fewer than six residential units, projects where solar will be installed on less than 50 percent of the residential units (“solar not as a standard”), and market-rate common areas of multifamily projects. Other projects and custom home projects receive an 18-month reservation period. Depending on the project type, reservation applications may cover a single system (for example, a custom home) or multiple systems (such as solar as standard).

During the third quarter of 2017, reservation applications for 5,382 systems were approved, corresponding to more than 21.2 MW of capacity and more than \$10.3 million in funding. Table 1 below shows the breakdown of reservation applications that were approved in the third quarter of 2017 (July 1 – September 30). Solar as standard accounted for roughly 92 percent of reserved systems, 90 percent of reserved capacity, and 84 percent of reserved funding. Affordable housing systems accounted for less than 1 percent of reserved systems, 5.4 percent of reserved capacity, and 1.8 percent of reserved funding over the second quarter. These systems are often virtual net-energy-metered² and serve multiple units or common areas or both, so the total number of systems is lower than the number of residential units served directly or indirectly (in the case of common area projects) by the solar energy system.

² *Virtual net energy metering* is a tariff arrangement that allows a property owner to allocate credits from a single solar energy system to multiple units, in which each has an electric meter.

Table 1: Reservation Applications Approved from July 2017 through September 2017

Project Type	# of Systems	Encumbrances	Capacity (kW AC)
Solar as Standard	4,967	\$8,658,618	19,173
Affordable Housing	13	\$564,957	381
Custom Homes	39	\$148,411	304
Other	363	\$930,906	1,365
Totals	5,382	\$10,302,892	21,223

Source: California Energy Commission

Payment Claims

For a project to receive an incentive payment, the solar energy system must be completely installed, grid-connected, and operating satisfactorily, and the building must comply with the energy efficiency specifications proposed in the applicant’s reservation.

The current *New Solar Homes Partnership Guidebook* (NSHP Guidebook), *Tenth Edition (Revised)*, was adopted at the Energy Commission’s May 10, 2017, Business Meeting. The *NSHP Guidebook, Tenth Edition (Revised)* describes the NSHP Program incentive levels available depending on the version of the *Title 24 Building Energy Efficiency Standards* (Energy Standards) under which a project is covered.

For projects permitted under the *2016 Energy Standards*, only a code-compliant incentive level is offered.

For projects permitted under the *2013 Energy Standards*, there are three incentive levels offered: “code-compliant,” where the structure is between 0 and 14.9 percent above the current energy standards; “Tier I,” where the structure exceeds the energy standards by between 15 and 29.9 percent; and “Tier II,” where the structure exceeds the energy standards by 30 percent or more.

Projects permitted under the *2008 Energy Standards* are not eligible for a code-compliant efficiency tier; only Tier I and Tier II levels are available.

Table 2 displays the number of payment claims approved in the third quarter of 2017. Similar to approved reservations, the bulk of approved payment claims were for systems in solar as standard (93 percent), corresponding to 85 percent of installed capacity and 79 percent of paid incentives. Affordable housing accounted for 3 percent of approved payment claims, slightly below 7 percent of installed capacity, and 13 percent of paid incentives. In total, payment claims were approved for 1,901 systems, corresponding to more than 5.9 MW of installed capacity and \$4.5 million in incentives.

Table 3 shows the number of payment claims approved in the second quarter, further broken down by their energy efficiency level. Code-compliant was the most common energy efficiency tier, followed by Tier I, and lastly Tier II.

Table 2: Payment Claims Approved from July 2017 through September 2017

Project Type	# of Systems	Incentive Amount	Capacity (kW AC)
Solar as Standard	1,766	\$3,590,221	5,072
Affordable Housing	56	\$604,614	423
Custom Homes	35	\$156,154	246
Other	44	\$174,215	214
Totals	1,901	\$4,525,204	5,955

Source: California Energy Commission

Table 3: Energy Efficiency Levels of Payment Claims Approved from July 2017 through September 2017

Energy Efficiency Level	# of Systems	Incentive Amount	Capacity (kW)
Code Compliant	1,520	\$2,863,045	4,408
Tier I	297	\$1,064,976	1,103
Tier II	84	\$597,183	444
Totals	1,901	\$4,525,204	5,955

Source: California Energy Commission

Reservation Applications and Payment Claims Processed

Table 4 shows the total number of reservation applications and payment claims submitted and reviewed during the third quarter of 2017. In a given quarter, the number of reservations and payments reviewed may be higher than the number of reservations and payments submitted due to the time required to complete staff review.

The 92 reservation applications submitted accounted for 3,107 systems totaling 11.6 MW. All figures are a decrease from the second quarter.

Table 4: Number of Reservation Applications and Payment Claims Submitted from Applicants and Reviewed by Staff from July 2017 through September 2017

	Submitted	Reviewed*
Reservations	92	105
Payments	1,607	1,626

Source: California Energy Commission

*In a given quarter, the number of reservations and payments reviewed may be higher than the number of reservations and payments submitted due to the lag time in staff review.

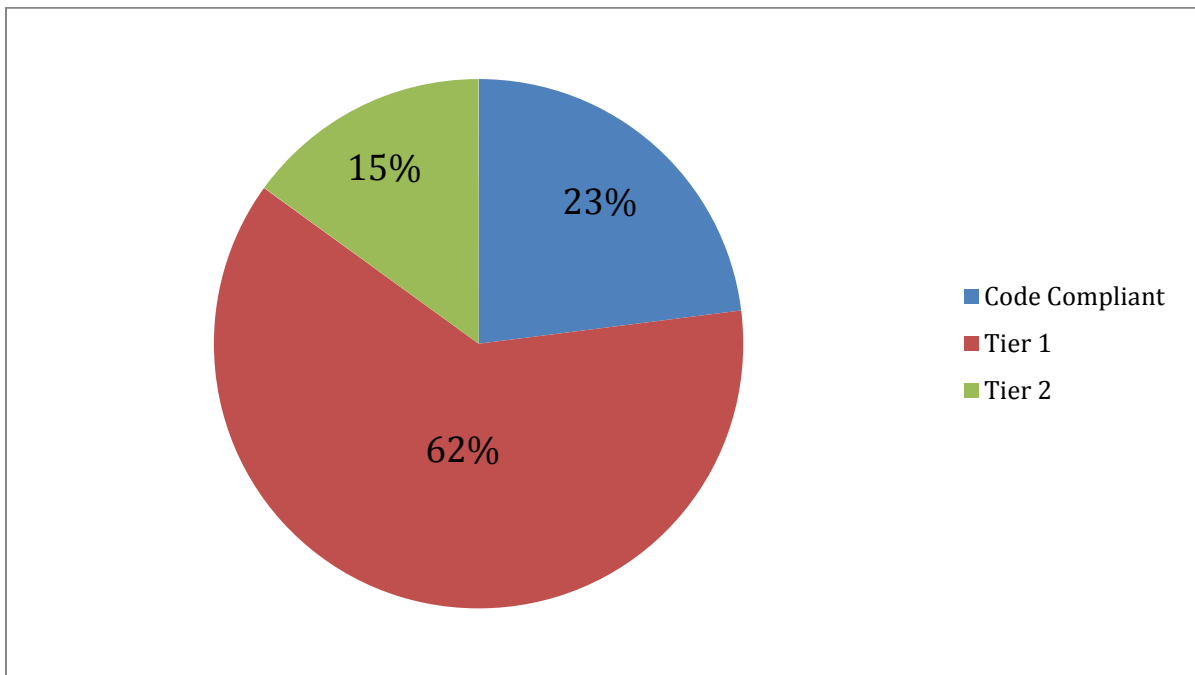
CHAPTER 3: Other Program Reporting

This chapter contains data that cover the entire life of the NSHP Program through September 30, 2017.

Total Installed Systems by Efficiency Levels (Code-Compliant, Tier I, Tier II)

When the NSHP Program began in 2007, incentives were available only for systems installed on new homes that exceeded the then current Energy Standards by at least 15 percent (Tier I) or 30 percent (Tier II), with an additional 30 percent improvement in space cooling for Tier II. Due to the progressively stringent requirements of subsequent updates to the Energy Standards, the NSHP Program began offering a code-compliant incentive for homes subject to the *2013 Energy Standards*, as long as the home met code requirements before claiming any efficiency compliance credit for the solar energy system. With adoption of the *2016 Energy Standards*, the only available incentive tier offered through NSHP is code-compliant.

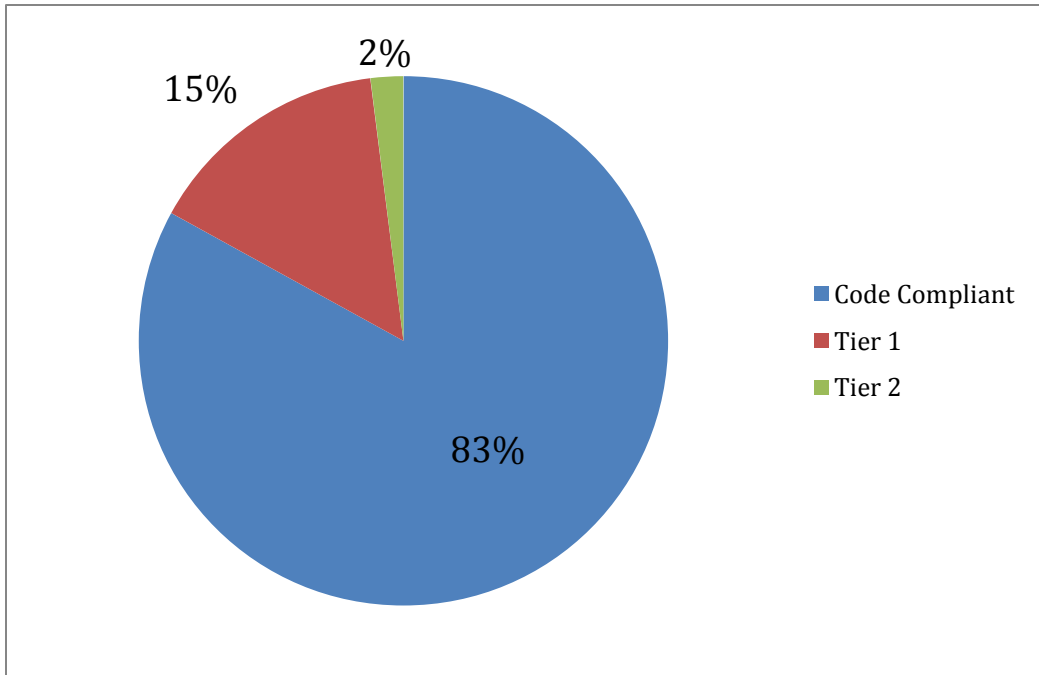
Figure 1: Installed Systems by Energy Efficiency Level, All Energy Standards



Source: California Energy Commission

Figure 1 shows the efficiency level of installed systems over the life of the program. About 62 percent of installed systems were Tier I projects, with 15 percent Tier II and 23 percent code-compliant.

Figure 2: Installed Systems by Energy Efficiency Level, 2013 Energy Standards Only



Source: California Energy Commission

Figure 2 shows the efficiency level of installed systems for projects subject to the *2013 Energy Standards*. This was the first update to the energy standards for which a code-compliant incentive was made available. In contrast to Figure 1, the majority of systems installed with all three incentive levels available opt to complete NSHP incentives under the code-compliant option (83 percent), with 15 percent participating in Tier I and only 2 percent participating in Tier II.

Code-compliant homes under the *2013 Energy Standards* are not necessarily less efficient than earlier Tier I and Tier II projects permitted under prior Energy Standards, as the *2013 Energy Standards* are roughly 25 percent more energy-efficient relative to the *2008 Energy Standards* and 40 percent more energy-efficient relative to the *2005 Energy Standards*.

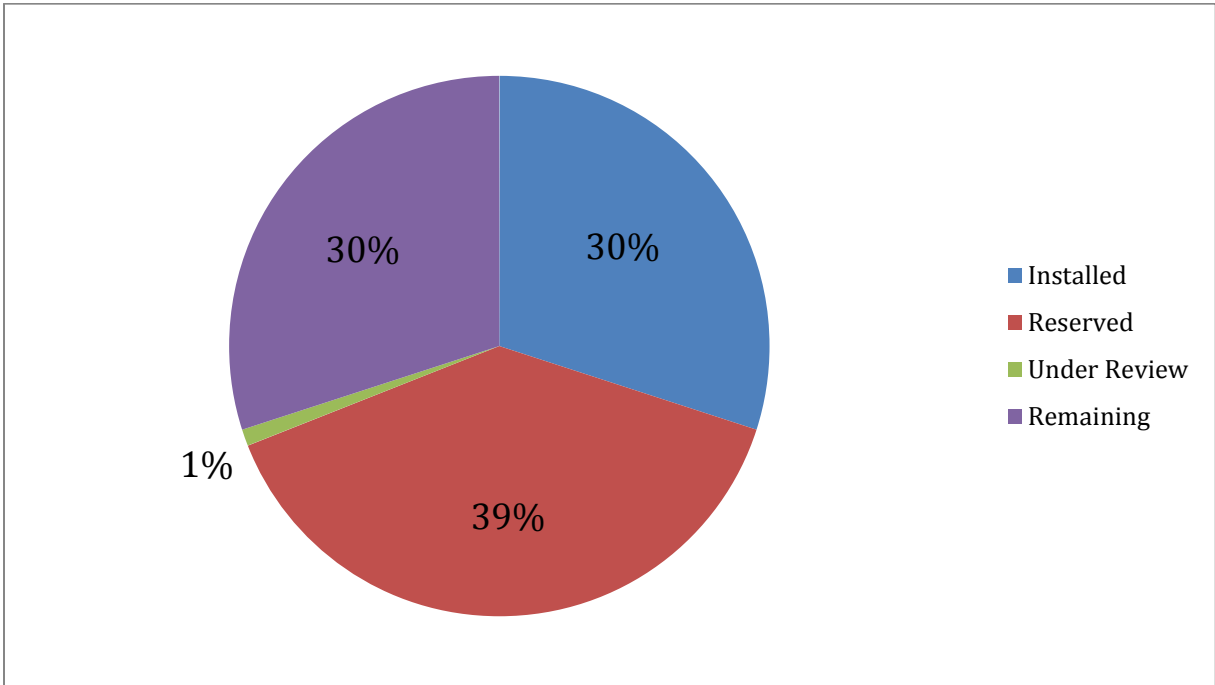
The *2016 Energy Standards* went into effect on January 1, 2017, and NSHP program guidelines for these projects were made available in the *NSHP Guidebook, Tenth Edition*. The *2016 Energy Standards* are roughly 57 percent more efficient relative to the *2005 Energy Standards*. Only a code-compliant option is available for projects subject to the *2016 Energy Standards*.

Overall Progress Toward Meeting Program Goals

The overall NSHP Program goal is to install 360 MW of solar energy systems by the end of the program. As of September 30, 2017, 105.6 MW have been installed, with 141 additional MW reserved and 4.2 MW under review. As shown in Figure 3, NSHP has reserved funds for or installed 69 percent of the total capacity goal for the program. In addition, reservation

applications for systems corresponding to 1 percent of the overall capacity goal are under review by the Energy Commission. Assuming all capacity under review is approved and installed, 30 percent of the overall program capacity goal will remain for newly submitted applications.

Figure 3: Progress Toward NSHP MW Goal



Source: California Energy Commission

CHAPTER 4:

Budget Reporting

Current data show that as of October 2, 2017, funding available for NSHP incentives from the Renewable Resource Trust Fund (RRTF) is roughly \$19.2 million, with applications totaling \$4.1 million under review, leaving about \$15.1 million available for new reservation applications. Based on past average monthly encumbrances, RRTF program funding may be exhausted in early 2018. CPUC Decision 16-06-006 authorized an additional \$111.78 million in funds for the continuation of the NSHP Program.

When reserved projects have payment claims that are disapproved or reduced from the original reserved amount, or reservations expire and are not extended, funds are returned (disencumbered) and become available for new reservations in the current incentive level. The remaining funding, as shown in Table 5, reflects changes due to new encumbrances as well as disencumbrances in the quarter.

Table 5: Remaining Funding in Renewable Resource Trust Fund

	\$ (Millions)	MW (AC)
Available Funding	19.2	
Under Review	4.1	6.0
Remaining Funding	15.1	

Source: California Energy Commission

CHAPTER 5:

Conclusion and Outlook

NSHP Program activity during the third quarter of 2017 included new reservation applications submitted for 3,107 systems totaling 11.6 MW of capacity. During this period, the program reserved just over \$10 million in funding for more than 21 MW of new solar capacity and paid over \$4.5 million in incentives for more than 5.9 MW of installed systems.

The majority of all installed projects over the program history have achieved the Tier I or Tier II energy efficiency levels. Since the *2013 Energy Standards* came into effect, more than 80 percent of payment claims for eligible projects have elected the code-compliant incentive level. The *2016 Energy Standards* went into effect on January 1, 2017, and generally apply to all new construction permits applied for after this date. Only a code-compliant option is available for projects under the *2016 Energy Standards*.

Based on installed, reserved, and under-review capacity, the program has achieved nearly 70 percent of the overall 360 MW target, with 30 percent remaining to be installed.

At the October 11, 2017, Energy Commission Business Meeting, the Commission adopted the *NSHP Guidebook, Eleventh Edition*. The adopted changes specified in this latest update to the NSHP guidebook include:

- Establishing the following program participation deadlines in adherence with the encumbrance and payment deadlines in the CPUC decision:
 - Reservation application submission deadline of April 1, 2018.
 - Encumbrance deadline of June 1, 2018.
 - Payment claim submittal deadline of August 31, 2021.
 - Payment disbursement deadline of December 31, 2021.
- Increasing the incentive rate for 2016 projects from \$0.50/watt to \$0.75/watt.
- Allowing a “letter of intent” to be submitted in lieu of an executed installation agreement for reservations of affordable housing and multifamily projects. A final installation agreement is still required before final payment approval.
- Discontinuing the alternative calculation approach designed for solar as standard projects with multiple building plans < 2,500 square feet.
- Requiring that all new reservations submit Title 24 documentation following 2013 or subsequent Energy Standards.
- Providing clarification that an eligible project must have a solar permit dated before the date of the certificate of occupancy.
- Discontinuing the requirement for building permits and subdivision maps at reservation.
- Discontinuing the requirement for third-party financing agreements in the payment claim package.

- Discontinuing the Established Installer and Incentive Disclosure Affidavit forms.
- Revising the NSHP-1, NSHP-2, and NSHP-3 forms to implement all changes.

The changes listed above will streamline the NSHP processes for stakeholders to reduce the time required to complete reservation applications and payment claims and will encourage program participation until the conclusion of the program. The changes further provide specific deadlines for encumbrances and payment claim submittals to allow program participants sufficient time to plan all activities. NSHP staff will be holding training workshops to assist stakeholders with any remaining questions regarding the deadlines associated with encumbrances and payment claims, and guidance documents are available on the GoSolarCalifornia Web page. The NSHP call center will continue to be available for any questions or concerns regarding current or future projects applying to the program.