

SUNPOWER

September 30, 2011

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 06-NSHP-01
1516 Ninth Street
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DOCKET

06-NSHP-1

DATE Sept 30 2011

RECD. Sept 30 2011

Re: Comments on Proposed New Solar Homes Partnership Guidebook revisions [Docket Number 06-NSHP-01]

Dear Staff,

Thank you for the opportunity to provide comments on the proposed revisions to the NSHP Guidebook. We appreciate all of the Energy Commission's efforts to streamline program procedures and willingness to receive stakeholder input to promote the increase of program participation. SunPower looks forward to working with the CEC to ensure the continued success of the program.

Background Information

SunPower Corporation (SunPower) is a vertically integrated solar products and services company that designs, manufactures and delivers solar electric systems worldwide for residential, commercial and utility-scale power plant customers. Beginning in 1995, SunPower dedicated a portion of its channel strategy to directly serve production homebuilders, which was a direct result of the Emerging Renewables Program (ERP) and subsequent New Solar Homes Partnership Program (NSHP) that provided an excellent opportunity to greatly influence solar adoption in new home construction.

Since forming the New Homes division, SunPower has made a substantial investment in the new solar homes segment. In this time, SunPower has established itself as the leader in the channel with over 80% market share in California, including both NSHP and municipal utilities (e.g., SMUD, Roseville Elec.). Since the launch of NSHP, SunPower has installed solar systems on nearly 5,000 new homes in CA working with some of the nation's largest and most influential production homebuilders, including Lennar Homes, Pulte Homes, Meritage, KB Home, Standard Pacific, and Richmond American, to name only a few. By drawing on this experience, as well as our commitment to seeing CA reach the goal of 50% of all new homes being solar powered by 2016, we are in a strong position to provide constructive feedback that can meaningfully impact future program design and implementation.

The NSHP program has created an enormous business opportunity for homebuilders, homeowners, manufacturers, installers, raters, designers, etc., which would not be as effective as it is today without the ongoing commitment of the Commissioners and NSHP staff to continually work with program stakeholders to identify ways to improve overall cost effectiveness while ensuring program benefits meet or exceed program expectations. As with each of the previous NSHP Guidebook Revisions, we appreciate this opportunity to comment and influence future program design. As a manufacturer with over 25 years of experience in the solar industry, SunPower is dedicated to the future growth and sustainability of the industry at large. It is with this in mind that we provide the following comments on the next revision to the NSHP program guidebook.

Energy Efficiency

From the beginning of the NSHP, SunPower has been very supportive of the program to require energy efficiency above code as a prerequisite for NSHP incentives. It is our firm belief that the NSHP has been a critical driver for enhanced efficiency residential new construction programs and without NSHP, a large percentage of these homes would otherwise have been built to code minimums. Unfortunately, the administrative costs associated with program compliance related to energy efficiency are unnecessarily taking away from the intended program benefits. So, while we continue to be supportive of NSHP requiring minimum efficiency levels, we do believe that a more efficient NSHP program design would result in measurable financial improvements to NSHP program participants (e.g., builders and homebuyers). Program improvements that can lead to measureable cost reductions will ultimately lead to increased program participation and more rapid market transformation.

The primary challenge is the program requirements related to verifying that NSHP homes meet minimum energy efficiency requirements. Without getting too detailed, the efficiency-related program processes and requirements for securing a reservation and claiming rebates is extremely burdensome, which substantially increases our cost of doing business with the customer/program participant. For example:

- A disconnect exists between CAHP Energy Efficiency Approval status and NSHP Energy Efficiency Approval Status. Currently, we must wait for the CAHP Administrator to upload approved project files to the HERS Registry and assign a HERS rater before the PV Inspection results can be entered.
- Requiring the PV Inspection results to be linked to the EE Inspection results in the HERS Registry causes an extra step that often creates confusion and errors in the HERS Registry, and further delays in completing the PV Inspection result input.
- Having the NSHP PA verify EE compliance directly in the HERS registry is an unnecessary step, which is duplicative of what CAHP PA's are doing.

The greatest opportunity for improvement lies in eliminating duplicative efforts. Presuming that the NSHP program participant is also enrolled in the California Advanced Home Program (CAHP), each home is being approved for CAHP rebates, which means that the CAHP is performing its own verification of energy efficiency. It is our strong recommendation that the NSHP work collaboratively with CAHP administrators to track and verify energy efficiency compliance, which would result in a much more streamlined program that eliminates the onerous requirements currently imposed on NSHP participants. Through closer collaboration with CAHP, the NSHP has the ability to verify whether the energy efficiency requirement has been met by the NSHP participant, thus eliminating the need for duplicative work to be completed under NSHP processes and procedures. By instituting a more streamlined process as we've outlined, it is highly likely that the CAHP program would also benefit through increased participation.

Of course this approach will only work for NSHP participants that are also participating in CAHP, which we believe is the majority of program participants. For NSHP participants not participating in the CAHP, an approach similar to what is currently in place would need to remain a program option.

We took the liberty of examining our cost structure to estimate the potential savings that would result from a streamlined process that reforms many of the current processes and procedures related to energy efficiency validation in NSHP as outlined above. While it is difficult to quantify the exact cost reduction, addressing this overarching issue would result in reduced project fixed costs in the following categories a.) project administrative staff hours, b.) the cost to carry rebates longer than budgeted, c.) contract administration and reporting, and d.) duplicative and or more costly solar HERS inspections. When combined, the savings from these categories would

produce cost reductions in the range of \$400-\$600 per system installation. This is equivalent to roughly 4-6% of the cost to the builder, which is a significant amount.

We recognize that the details of this recommendation need to be further analyzed and understood by all stakeholders. Under the leadership of the NSHP staff, SunPower would commit the necessary time and resources to join a stakeholder working group (e.g. program advisory group) that could rapidly address the issue and make more specific recommendations for inclusion in the next guidebook revision. We have had positive initial discussions with other stakeholders, including Dow Solar, the Heschong Mahone Group, Consol, and HERS raters. Based on these preliminary discussions, we are confident that a solution exists that would reduce participant cost, while being acceptable to all stakeholders and upholding the integrity of the NSHP.

Solar Contractors are the True Program Participant

Although the builder is the intended participant in the program, the solar contractor is in fact the true program participant. Homebuilders and Developers heavily rely on their solar contractors to participate in the important stakeholder discussions and workshops on their behalf. The builders see their solar contractors as industry and subject matter experts, and entrust the solar contractors to support NSHP program development and work to ensure program success. The NSHP program and all its inner workings is fairly new territory for most homebuilders, and being in a resource constrained market right now, they truly need their solar contractor to represent and facilitate their needs within program.

Another important item to note is that in order to promote program participation and a positive customer experience, the builders are essentially being shielded from the day to day challenges that the solar contractor experiences throughout the life of a project reservation and incentive claim process. The solar contractors are pulling all the pieces together and facilitating successful rebate claims, home after home, no matter what hurdles may appear along the way. For our customers, the builder, we intend to make program participation straightforward and effortless, which promotes future participation.

Removal of the 180-Day window between the issue date of a solar permit and the certificate of occupancy

SunPower recommends revising the current guideline to allow for a 30-day window. While we support the verification of Residential New Construction eligibility by requiring the solar permit to be in place at the time the certificate of occupancy is issued, we wish to also promote a certain level of program flexibility for the customer. Creating a 30-day window will ultimately help to promote more solar installs and NSHP participation.

As a solar installation contractor, we have experienced scenarios where there have been permit delays for various reasons that may not entirely be within the applicant or the installer's control. Solar permit applications may take longer than anticipated to issue the permit, either because of building department delays or required revisions to a permit due to a solar design change.

In other scenarios, allowing for a 30-day window would increase the ability for a solar installation and participation in the program. The customer may sell a solar system late in the construction stages and the duration of time it takes to pull together all the required documents to obtain a solar permit may slightly exceed the certificate of occupancy permit.

Allowing for a small window to capture these potential scenarios would help promote the customer's confidence and ability to sell solar later in the construction process for a home that is highly efficient and eligible for NSHP participation.

Virtual Net Metering (VNM) allowed for multifamily housing

SunPower agrees with this proposed revision to the guidebook. We recommend clarifying the applicability of this change, by allowing existing reserved applications to transition to Virtual Net Metering – as long as utility meters have not been installed already and solar equipment has not been installed. This would potentially expand VNM across market rate multifamily housing with a more rapid adoption.

NSHP Application must occur prior to the building's walls being enclosed

SunPower recommends this guidebook revision to be elaborated in the following way:

1. Custom Home Applications – NSHP Application to be submitted prior to wall enclosure
2. Subdivision Applications – NSHP Application OR CAHP Application to be submitted prior to certificate of occupancy issuance

Booking and designing a solar subdivision can be a long process. Many builders know they want to go solar, and begin working on choosing a solar contractor, executing contracts and project designs in order to implement solar adoption. This contract and design process can take time to roll out, also factoring in current builder resource constraints, all while the builder continues building homes that are eligible for NSHP. Allowing these builders to participate in NSHP for homes which meet all the efficiency and design guidelines, without forcing them to potentially delay construction deadlines, would be beneficial to program participation.

Also consider specifying the deadline to apply to NSHP Application OR CAHP Application dates. For the majority, New Homes Subdivisions participate jointly in the NSHP program as well as the CAHP program. If a subdivision already has a CAHP application on file, this should validate energy efficiency eligibility into the NSHP program without the need of a NSHP application deadline.

Field Inspection Energy Checklist (CF-4R-EE NSHP) Required

SunPower recommends this guidebook revision to be elaborated in the following way:

1. Custom Home Applications – Field Inspection Energy Checklist (CF-4R-EE NSHP) Required
2. Subdivision Applications – CF-4R Required, in lieu of CF-4R-EE-NSHP, where subdivision is participating in Utility Residential New Construction Program (CAHP).

Requiring an additional form on top of what the HERS rater is already completing for the CAHP program participation is inefficient and costly. The HERS rater cost will increase, and potentially the HERS provider cost as well. All these costs directly affect the customer/homebuilder and their ability to justify the cost of participating in NSHP.

Increases in system size for approved reservations will be funded at the incentive level in effect at the time the increase is reported to NSHP PA.

SunPower agrees with this proposed revision to the guidebook. We recommend clarifying the applicability of this change in the following way:

1. This change is applicable to new NSHP reservation applications only. Existing approved reservations remain applicable to prior guidebook where increase in system size will be funded at incentive level which was originally approved under reservation.

2. With regards to Solar as Option reservations, the program only reserves a 2kW system size as a base. This would require applicant to submit details about the intended system size at NSHP application stage, and the program will consider the intended system size to be the **Approved** system size under the reservation. Therefore, even though the program has only encumbered 2kW/\$5000 as protocol for Option communities, the actual installed systems will be subject to the intended **Approved** system size and system size increase funding will be calculated from that **Approved** size.

Requiring this revision to be effective for existing reservations would greatly impact the ability to sell solar in existing solar communities. Many communities offer multiple system sizes, and even custom designs if a homebuyer wishes to upgrade solar. If we are required to now raise our prices on solar systems which we've been installing for homebuilders at a certain price for many years, this would potentially cause program withdraw from the homebuilder. We need to continue to focus on making solar financially viable, and this change would impact a large majority of our current, successful, solar communities.

HERS Providers & Raters:

There are continuous struggles with NSHP compliance with 3rd Party HERS raters and the current HERS providers (CHEERS & CalCERTS). If a HERS certificate is not completed, no incentive will be paid. SunPower requests the CEC to take the lead in further process development and training workshops for all parties involved. Further education on each step in the entire process (plan check, registry upload of EE & PV files, HERS rater assignments, Inspection Results entries and program verification of registered results) is greatly needed. There are many entities involved throughout the process, and each should be enabled to complete their responsibilities efficiently and without issue. This can be accomplished with a workshop, including all participants – Utility representatives (CAHP & NSHP), program Plan Check agency, HERS Provider, HERS Rater and Installers.

The entire process needs to be reviewed and improved significantly.

There is limited support for builders and installers when it comes to HERS Provider and HERS Rater issues. Below are a few issues we have heard from HERS raters as to why they are unable to produce the proper certificates:

- HERS Rater does not have the correct level of access to the specific project/files
- Required/Correct HERS files are not in the registry at the time of inspection
- HERS Provider is not completing and returning certified copies of certs to Rater (CHEERS)
- Changes to HERS Provider registry procedures are not communicated/understood by Rater
- Changes to HERS Verification/Code requirements are not communicated/understood by Rater

SunPower Recommends:

CEC to be a Resource of Support.

We request the CEC to provide assistance whenever there are issues or delays in the HERS registry process, helping to make sure NSHP reservations are moving along timely and the program is working as intended. The **only** purpose of a CF-4R-PV is for NSHP incentive claim. If there is no enforcement of this requirement with the HERS raters and providers, there is a flaw in the program. The guidebook needs to address specifically the requirements and responsibilities of the HERS Provider, Rater, and Installer, and also address the path to resolution whenever the process is not being executed as intended.

Broaden ability for PV Inspection Sampling.

In today's market and design structure, most PV systems do not qualify for the sampling protocol, therefore almost every home is being inspected by a 3rd party rater. The cost and time associated with each inspection is a burden for builders, and is a barrier to NSHP participation and solar adoption.

In order to increase program participation, the PV Inspection guidelines should be broadened and enable a greater ability to sample inspections. Currently, the 1 in 7 sampling protocol applies only when 7 solar systems are the exact same equipment, size, and orientation/pitch (or CFI). Creating the ability to sample 1 in 7 solar systems within the same subdivision, regardless of size and orientation, would greatly improve the efficiency of PV Inspections and verification processes. The amount of administrative hours that are spent having a single PV inspection result entered in the registry is enormous, both for Installer and HERS Rater. PV files must be generated and signed (by the builder in some cases), emails must be sent to utility for registry uploading, utility NSHP PA required to complete the registry upload, the HERS rater must then associate the PV file with a lot in the registry, the Installer then uploads CF6RPV results to the lot, and the HERS rater then enters their individual test results and generates a certificate. At times there are issues or delays with this process, which creates more work for everyone involved. Allowing for a broader sampling mechanism would drastically help keep HERS costs down.

Changing Reservation Types:

Add information to the guidebook which addresses the ability to change an existing reservation from Solar as Standard to Solar as Option, or vice versa, without incurring penalty on homes already paid out.

Builders are changing their sales initiatives often. If a community appears to be struggling, or they receive strong feedback from buyers regarding mortgage qualification issues or price concerns, they may be forced to eliminate solar as standard and choose to only offer as an option. In the opposite scenario, builders who originally start a community with solar as Option and find solar sales very successful may desire to switch to Standard solar.

Allowing for the retraction or expansion of homes/reservations based on current market conditions would help put builders at ease at the time of contracting and therefore increase participation. There are no guarantees in this market, and it is difficult for builders to forecast their sales through the life of an NSHP reservation (36 months).

Program Administration:

The following are recommendations in a continual effort to streamline the current administrative burden of the NSHP program:

- Allow for all documents to be submitted electronically, including NSHP-2s.
- Allow for the submission of multiple CF-1R-PVs with different system sizes to be approved with the reservation. This is to accommodate communities that offer various system sizes, where the exact system size for a home is not determined until the time of home sale. This will allow the HERS rater greater flexibility to create sampling groups based on the CF-1R-PV files available in the HERS registry.
- Eliminate the requirement for a signature on the CF-1R-PV form.

Web Tool:

Webtool updates are vital to streamline administration. SunPower recommends the following webtool updates as priority:

- Allow for larger file upload than 1MB. Suggest 5MB cap.
- Allow for bulk upload of reservation and claim documents to submit, as it is very time consuming to upload all documents one at a time.
- Correct “Expired” reservation status. Reservations which were granted 1 year extension are beginning to “Expire” on the webtool, which prohibits updates to any site records within that expired community on the webtool.
- Create Solar as Option functionality, with ability to upload all potential solar homes
- Provide viewable Update History, a log of all activity for easier communication
- Provide view of payment data
- Ability to upload CF1RPV’s and .emf & .her files to each site in the webtool to eliminate confusion where multiple project CF1RPV’s exist, and eliminate email transmittals.
- Enable notifications of key status updates

Solar as Option Process Improvement:

SunPower strongly supports the CEC’s recommendations to simplify the Solar as Option process. We would like to provide the following additional comments regarding the Solar as Option process improvements.

Revise guidebook to eliminate NSHP-1.5 form, applicable to all existing reservations as well as new applications.

Allow for Solar as Option NSHP application to include ALL potential homes in the community, including all potential lot numbers and addresses. Currently, an application can only be submitted showing 50% of the total community home count. Understanding a reservation will only be made for 50% of the total lot count, it would be extremely helpful to administrators to allow for all potential homes to be included in application and uploaded to webtool. Currently, everything must be submitted as “TBD” and later updated which is an extra step that takes significant time administratively.

Shading Analysis

SunPower strongly recommends a review of the tree height categories. The ranges of tree heights in some categories, specifically the medium category, is such a broad range that it is creating a considerable barrier for field verification.

The medium category for trees is outlined as 21’ to 49’, in the shading verification table a Medium Tree is counted as 35’ (assuming average height in this category). In some instances, trees that are in the 36’ to 49’ range pass the shading test because they are counted as 35’, but in reality they would shade the array when mature. At the same time, many of the common ornamental trees that are used (and sometimes mandated) as street and front yard trees grow in the 21’ to 25’ mature height range. Since those trees are counted in the medium category, their mature tree height is counted as 35’ for the shading analysis. In reality, most of those trees will never shade the array.

There are far more types of commonly used trees in the lower end of the medium tree height classification, which results in many over-reported shading impacts and reductions in rebate amounts, ultimately reducing program satisfaction and the success of the program. The current tree height classification system significantly complicates the solar and landscaping planning and reduces the selection of trees that builders and landscape architects have

to plant and satisfy both the jurisdictions and Minimal Shading Criterion. Revising the category height ranges and possibly splitting the Medium Tree category in half (Med 1 - 21'-34' and Med 2 – 35'-49') would address this issue and more accurately account for solar array shading.

Thank you again for your time and attention. Please feel free to contact me if you should have any further questions or comment at (916) 783-5300.

Sincerely,

A handwritten signature in blue ink, reading "Merideth Griffith".

Merideth Griffith
Manager of Project Administration
New Homes Division
SunPower Corporation