Introduction to the New Solar Homes Partnership (NSHP) Guidebook, Tenth Edition

Renewable Energy Division
California Energy Commission
Charles Imbrecht Hearing Room
May 3, 2017
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Housekeeping and NSHP Overview</td>
</tr>
<tr>
<td>9:15</td>
<td>Submitting a Reservation</td>
</tr>
<tr>
<td></td>
<td>Energy Efficiency Overview</td>
</tr>
<tr>
<td>10:15</td>
<td>Break</td>
</tr>
<tr>
<td>10:30</td>
<td>Other Reservation Details</td>
</tr>
<tr>
<td></td>
<td>FI Calculator Demo</td>
</tr>
<tr>
<td></td>
<td>PV/EE Verifications</td>
</tr>
<tr>
<td></td>
<td>Submitting a Payment Claim</td>
</tr>
<tr>
<td>12:00</td>
<td>Application Clinic</td>
</tr>
</tbody>
</table>
NSHP Program Goals

- Sustainable solar homes market; builder commitment to install solar energy systems
- High-performing solar systems on highly efficient residential construction
- Achieve 360 megawatts of installed solar electric capacity in California
- Solar on 50%+ of new homes
- Self-sufficient solar industry
Important Dates

- 1/1/2017
  - Effective date of the 2016 Energy Efficiency Standards

- 3/8/2017
  - Adoption & Effective Date of NSHP Guidebook, 10th Edition

- 5/10/2017
  - Anticipated Adoption & Effective Date of NSHP Guidebook, 10th Edition (Revised)
Before Applying to NSHP

• Please Read the NSHP Guidebook and NSHP Web Tool Handout

• Consider the following:
  – Can everything in your project be verified by a HERS rater?
  – For 2016 projects, determine if the home will use the PV credit to reach compliance with the building code
  – Solar Permit applied for no later than 120 days after Certificate of Occupancy
  – Must apply to NSHP within 6 months of installing the PV system
Are You Eligible for NSHP???

- New Residential Construction
- Electric Service in PG&E, SCE, SDG&E, or BVES
- 1 kW AC or larger
- Ten-year warranty
- PV and energy efficiency measures are verified
- Azimuth 90-280 degrees
What’s in your packet?

- Today’s PowerPoint Presentation
- Reservation Documents Example
- Payment Claim Documents Example
- Reservation and Payment Checklists
- NSHP Guidebook, Tenth Edition
Submitting a Reservation

O’Shea Bennett
Agenda

• The NSHP process
• What do you qualify for?
• Applying to the program
• Creating your project in the webtool
• Required documents
• Site creation in webtool
Basic NSHP Process

**Submit Reservation**
Sign up for the NSHP web tool. Enter your Project Information. Enter the project site details and indicate if you are mailing in attachments. Submit your project for review by the Program Administrator.

**Check Reservation Status**
Use the web tool to check your project status. Your Program Administrator will contact you when the project is approved.

**Submit Payment Claim**
Login to the NSHP web tool. Click on the site for payment. Verify the site information and indicate if you are mailing in the attachments. Submit your site for payment to the Program Administrator.

**Check Payment Claim**
Use the web tool to check your payment status. Your Program Administrator will contact you when payment is approved.
Project Types (18 Month Period)

Custom Homes

Common Areas

- Market-Rate Only
- Areas in the development that are reserved for the use of the residents.
- Example: Recreation Center, Pool House, etc.

Small Developments

- Projects/Phases of less than 6 homes AND/OR
- Solar on less than 50% of homes.
Project Types (36 Month Period)

Solar as Standard

- Projects/Phases of 6 or more homes
- AND
- Solar on at least 50% of those homes

Affordable Housing

- At least 20% of the project units must be reserved for extremely low, very low, lower, or moderate income households for a period of at least 10 years.
- Affordable Housing Common Area Projects
Energy Efficiency Tiers

- Code Compliant: <15% Efficiency
- Tier 1 Level: 15% - 29.99% Efficiency
- Tier 2 Level: >30% Efficiency

Table 3-1: Available Incentive Level Tiers by Energy Standards

<table>
<thead>
<tr>
<th></th>
<th>Code-Compliant</th>
<th>Tier I</th>
<th>Tier II</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016 Energy Standards</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013 Energy Standards</td>
<td>X*</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2008 Energy Standards</td>
<td>X*</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
## Market Rate Housing Incentive Levels

<table>
<thead>
<tr>
<th>Code-Compliant Incentive* (per watt, reference system)</th>
<th>Tier I Incentive** (per watt, reference system)</th>
<th>Tier II Incentive** (per watt, reference system)</th>
<th>Reserved Volume Target*** (MW-AC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2.25</td>
<td>$2.50</td>
<td>$2.60</td>
<td>55.3</td>
</tr>
<tr>
<td>$2.00</td>
<td>$2.25</td>
<td>$2.35</td>
<td>N/A</td>
</tr>
<tr>
<td>$1.75</td>
<td>$2.00</td>
<td>$2.25</td>
<td>5</td>
</tr>
<tr>
<td>$1.50</td>
<td>$1.75</td>
<td>$2.00</td>
<td>10</td>
</tr>
<tr>
<td>$1.25</td>
<td>$1.50</td>
<td>$1.75</td>
<td>15</td>
</tr>
<tr>
<td>$1.00</td>
<td>$1.25</td>
<td>$1.50/$1.75****</td>
<td>35</td>
</tr>
<tr>
<td>$0.75</td>
<td>$1.00</td>
<td>$1.50</td>
<td>50</td>
</tr>
<tr>
<td>$0.50</td>
<td>$0.75</td>
<td>$1.25</td>
<td>197</td>
</tr>
</tbody>
</table>
## Affordable Housing Incentive Levels

<table>
<thead>
<tr>
<th>Common Area* and Code-Compliant Dwelling Unit Incentive** (per watt, reference system)</th>
<th>Tier I and Tier II Dwelling Unit Incentive*** (per watt, reference system)</th>
<th>Reserved Volume Target (MW-AC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3.25</td>
<td>$3.50</td>
<td>5.5</td>
</tr>
<tr>
<td>$2.90</td>
<td>$3.15</td>
<td>N/A</td>
</tr>
<tr>
<td>$2.55</td>
<td>$2.90</td>
<td>0.25</td>
</tr>
<tr>
<td>$2.20</td>
<td>$2.55</td>
<td>0.5</td>
</tr>
<tr>
<td>$1.85</td>
<td>$2.20</td>
<td>0.75</td>
</tr>
<tr>
<td>$1.50</td>
<td>$1.85</td>
<td>7</td>
</tr>
<tr>
<td>$1.40</td>
<td>$1.75</td>
<td>10</td>
</tr>
<tr>
<td>$1.30</td>
<td>$1.65</td>
<td>12</td>
</tr>
</tbody>
</table>
Sign Up for the New Solar Home Program (NSHP)

Select the type of NSHP customer that best describes you...

Who are you?

I am a Homeowner

I am a Representative

NSHP Web Tool Applicant Guide GB10

Read this first!
User Info

- Login ID – Must be 5-20 characters
- Password – Must be at least 8 characters
Personal Information

Sign Up for the New Solar Home Program (NSHP)

Personal Information

- First Name*
- Last Name*
- Title*
- Phone*
- Email*
- Fax*

Sign Up for the New Solar Home Program (NSHP)

Address

- Address 1*
- Address 2*
- City*
- State*
- Zip Code*

Information and address that You can be reached at
Next Steps

• Select “Create a New Project”

Sign Up for the New Solar Home Program (NSHP)

Next Steps
Your new NSHP account is created. What would you like to do next?

[×] Create a New Project now
[ ] Go to the NSHP Main Menu
[ ] Finish and come back to the NSHP Web Application Later

Please select your next step. You can begin creating an NSHP Project for one of your customers, Go to the NSHP Main Menu or complete NSHP Registration and stop.
Project Description

• Name of the Project being built
• The address or place where the project will be built

<table>
<thead>
<tr>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name*:</td>
</tr>
<tr>
<td>Address 1:</td>
</tr>
<tr>
<td>Address 2:</td>
</tr>
<tr>
<td>City*:</td>
</tr>
<tr>
<td>State*:</td>
</tr>
<tr>
<td>Zip Code*:</td>
</tr>
<tr>
<td>Electric Service Provider*:</td>
</tr>
<tr>
<td>Utility Energy Efficiency Program? □</td>
</tr>
</tbody>
</table>
Project Contact Information

- Vital to ensure smooth application process
- Custom Homes – Often have repeated names
- Alternate contacts help to keep process moving
Project Detail

- All boxes must be answered
- Selected boxes show common answers for custom homeowners
Project Summary Page

- This is the project homepage
- Take note of the status of each section
- To add attachments select “Complete Attachments”
## Required Documents

<table>
<thead>
<tr>
<th>Guidebook Requirement</th>
<th>Attach</th>
<th>Mail In</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project ID: NP007GE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type: Custom Home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applicant: John Snow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name: Winterfell Solar Extravaganza</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status: Incomplete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expiration:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Building Permit / Subdivision Map (N/A for CAHP)*
2. Construction Plan-Set (N/A for CAHP)
3. Equipment Purchase Agreement/Installation Contract*
4. FI Calculator Form (NSHP FI-1)*
5. FI Calculator Input File (.huf)*
6. Incentive Disclosure Affidavit
7. Miscellaneous Documents
8. Reservation Application Form (NSHP-1)*
9. Title 24 CF-1R File (.bd, .mp7, .mp8, or .ribd) (N/A for CAHP)
10. Title 24 CF-1R or PERF-1 Form (N/A for CAHP)*
11. Utility EE Program Acceptance Letter / Plan Check Results

*Asterisks (*) next to any Document indicates that the Document is required.
# Filling out the NSHP-1

## Section 1

### State of California

**NSHP-1**

New Solar Homes Partnership Reservation Application Form

<table>
<thead>
<tr>
<th>Applicant Information and Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant Name (Homeowner or Homebuilder/Developer)</td>
</tr>
<tr>
<td>John Snow</td>
</tr>
<tr>
<td>Mailing Address</td>
</tr>
<tr>
<td>1456 Winterfell Way</td>
</tr>
<tr>
<td>Primary Contact Name (if different from applicant)</td>
</tr>
<tr>
<td>John Snow</td>
</tr>
</tbody>
</table>
# Section 2

## General Project Information

<table>
<thead>
<tr>
<th>Project Name: Winterfell Solar Extravaganza</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Address (city and zip code for developments): Shasta, CA 95820</td>
</tr>
</tbody>
</table>

**Occupancy Type:**
- Single Family

**Project Type:**
- Solar as Standard (50% or more of the residential dwelling units will receive solar, minimum of six units)
- Solar Not as Standard (Less than 50% of the residential dwelling units will receive solar, minimum of six units)
- Small Development (One to five dwellings that will receive solar)
- Custom Home
- Affordable Housing

**Total number of residential dwelling units in the project:** 1

**Total number of residential dwelling units with solar energy systems installed:** 1

**Total number of common area systems with solar energy systems installed:** 0

System is located in a community identified as disadvantaged (receives a score of 76% or higher on CalEnviroScreen 2.0 Map at [http://oehha.ca.gov/calenviroscreen/report/calenviroscreen-version-20](http://oehha.ca.gov/calenviroscreen/report/calenviroscreen-version-20))?
- [ ] Yes
- [x] No

**Building Energy Efficiency Standards project is subject to:**
- 2016 (effective January 1, 2017)
- [ ] 2013 (effective July 1, 2014)
- [ ] 2008

**Expected Energy Efficiency Level of Project (refer to Title 24 documentation [CF-1R or PERF-1]):**
- [x] Code-Compliant (2013/2016 Standards only)
- [ ] Tier I (2008/2013 Standards only)
- [ ] Tier II (2008/2013 Standards only)

**Will this project be Virtually Net Metered (VNM)?**
- [x] No

**Electric utility providing electricity to project:**
- [ ] PG&E
- [ ] SCE
- [ ] SDG&E
- [ ] BVES

**Project participating in electric utility new construction energy efficiency program (CAHP, CMFNH, Savings by Design):**
- [x] Yes
- [ ] No
## Section 3

### 3. Additional Project Information

#### Accessory Structures (all applicants)
1. Does the project contain additional buildings on the lot (guesthouse, cabana, etc.)?  
   - Yes, [ ] buildings  
   - No
2. (If yes to previous): Do any of these buildings contain conditioned space?  
   - Yes, [ ] buildings  
   - No
3. (If yes to previous): Are any of these buildings on the same utility meter as the main residence?  
   - Yes, [ ] buildings  
   - No

Please initial the following:
I certify that the information entered above is correct: [ ]  
I recognize that each building noted in #3 above must meet all NSHP energy efficiency requirements: [ ]

#### Permit Dates (For Small Development and Custom Home applicants only):
Anticipated or actual solar permit application date: [ ]  
Anticipated or actual Certificate of Occupancy date: [ ]

Please initial the following:
I certify that, to the best of my knowledge, the above dates are correct: [ ]  
I recognize that my project will be ineligible if the solar permit is applied for more than 120 days after the issuance of the Certificate of Occupancy: [ ]
Section 4

4. Solar Energy Systems Information

The system will be:  
- [ ] Self-Installed*  
- [ ] Installed by licensed contractor**

* For self-installed systems, provide either an equipment purchase agreement, or receipts/invoices showing at least 10% of the price or $1000 has been paid.

** For systems installed by a contractor, provide a copy of the installation contract.

System #1 Estimated NSHP Incentive (Attach Flexible Installation Calculator)  
Incentive Here

(If applicable) System #2 _______  
System #3 _______  
System #4 _______  
System #5 _______

Declaration and Acknowledgements (all projects)

- [ ] Initial

* Please initial the following:
I acknowledge that the NSHP incentive listed above is an estimate, and that the final specifications of the installed system will determine the final incentive.

Applicant’s Initials: _______

I acknowledge that in order to be eligible for NSHP incentives, the system components must be listed on the eligible equipment list, found at [http://www.gosolarcalifornia.ca.gov/links/equipment_links.php](http://www.gosolarcalifornia.ca.gov/links/equipment_links.php).

Applicant’s Initials: _______
## Sections 5 and 6

### 5. Declaration

The undersigned party declares under penalty of perjury that the information in this form and the supporting documentation submitted herewith is true and correct to the best of his or her knowledge and acknowledges the following program requirements to reserve funding:

- Incentives are based on the expected performance of the systems installed. Systems that are leased or provide electricity under a PPA are subject to special reporting requirements. An annual status report on the operation of the solar energy system must be submitted by the lessor or owner of the solar energy system. If the lease agreement or PPA is terminated and the system is removed from the building upon which it was originally installed within ten years of the system’s installation or the start date of the agreement, whichever is later, the lessor or system owner is responsible for the funding repayment.

The undersigned party further acknowledges that he or she is aware of the requirements and conditions of receiving funding under the New Solar Homes Partnership (NSHP) and agrees to comply with all such requirements and conditions as provided in the Energy Commission’s *NSHP Guidebook, Tenth Edition*, and *Building Energy Efficiency Standards* (Title 24, Part 6) as a condition to receiving funding under the NSHP. The undersigned party authorizes the Energy Commission, during the term of the NSHP, to exchange information on this form with the applicable electric utility servicing the project to verify compliance with NSHP requirements.

### 6. Signature, Assignment of Administrative Rights and Incentive Recipient Information

(Optional)

I, the applicant, designate [Rep. Name] as my authorized representative for the New Solar Homes Partnership program. This party is permitted to sign the NSHP-2(s) on my behalf. The authorized representative also has the authority to modify the payee prior to payment or cancel the application.

<table>
<thead>
<tr>
<th>Full Legal Name of the Designated Payee of the NSHP Incentive:</th>
<th>Payee Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payee’s Address:</td>
<td></td>
</tr>
<tr>
<td>Builder/Developer’s Representative or Homeowner</td>
<td></td>
</tr>
<tr>
<td>Name (Applicant Name):</td>
<td>Title:</td>
</tr>
<tr>
<td>Applicant’s Signature:</td>
<td>Date:</td>
</tr>
</tbody>
</table>
**STD-204/Payee Data Record**

- Vital to avoid delays in payment process
- For custom homes, check the sole proprietor box
Building Permit

- Address must match the NSHP-1.
- Must state if permit is for the construction of a new building.
- Must clearly show issue date.
- Tentative or Final subdivision map – typically for large subdivisions.
Installation Contract

The installation contract will include:

- Site address.
- Description of work to be performed (Scope of Work).
- Contractor information (Name, Address, License Number, License Type) - [http://www.cslb.ca.gov/](http://www.cslb.ca.gov/)
- Total agreed price to install the system.
- Printed names AND signatures of applicant.
Installation Contract Example

O’Shea’s Contracting

Solar System Conditional Purchase Agreement:

This Solar System Conditional Purchase Agreement (this “Agreement”) is entered into by the parties listed below (each a “Party” and collectively the “Parties”) as of the date signed by O’Shea below (the “Effective Date”).

<table>
<thead>
<tr>
<th>Customer:</th>
<th>John Snow</th>
<th>Seller:</th>
<th>O’Shea’s Contracting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name and Address</td>
<td>1234 Winterfell Way Winterfell The North</td>
<td>Name and Address</td>
<td>123 Fake Street Sacramento CA 95814</td>
</tr>
<tr>
<td>Phone</td>
<td>(916) 111-1111</td>
<td>Phone</td>
<td>(916) 111-1111</td>
</tr>
<tr>
<td>Fax</td>
<td></td>
<td>Fax</td>
<td></td>
</tr>
<tr>
<td>E-mail</td>
<td><a href="mailto:Johnsnow@yahoo.com">Johnsnow@yahoo.com</a></td>
<td>E-mail</td>
<td><a href="mailto:OSheacontracting@yahoo.com">OSheacontracting@yahoo.com</a></td>
</tr>
<tr>
<td>Project Name</td>
<td>John’s Fake Project</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Customer desires to conditionally purchase from O’Shea the solar power system described in the Exhibits to this Agreement. This Agreement sets forth the terms and conditions of the conditional purchase of the solar panel systems described in Exhibit 1 (the “Systems”) to be installed at the site described in Exhibit 2 (the “Site”). When this Agreement is executed by Customer as the general contractor on behalf of the owner of the systems, references to “Customer” shall be read as the Systems “Owner”.

The exhibits listed below are incorporated by reference and made part of this Agreement:

- Exhibit 1: Systems Description and Price
- Exhibit 2: Installation Schedules
- Exhibit 3: General Terms and Conditions
- Exhibit 4: Form of Solar Lease
- Exhibit 5: Form of Site License

Customer: John Snow
Signature: John Snow
Printed Name: John Snow
Title: Custom Homeowner
Date: May 3rd, 2017

O’Shea’s Contracting
Signature: O’Shea Bennett
Printed Name: O’Shea Bennett
Title: Licensed Contractor
Date: May 3rd, 2017
NSHP FI-1 Form

- FI Calculator will create this form
- Equipment must match webtool & other documents
- Results will give total project incentive amount
CF-1R

- The CF-1R is used to ensure compliance with EE requirements
- Will give compliance margins for each site
Attachments Completed

• Once all of the project attachments are uploaded, the next step is Site Creation
Creating a Site

- Select “New Site”
Site Description

- Complete site description information
  - Anything marked with an asterisk is required
- Must match supporting documentation
Site Information

• Select the applicable building standards
• Fill out the rebate amount and Title-24 margin
• Select “Save and Return” at bottom of page
Adding Equipment for the Site

- Select “Complete Equipment”
Adding Equipment for the Site

- Select “New Inverter”
• Select the inverter from the list of approved equipment
• List is searchable by name or manufacturer

The Asterisk (*) next to the Qty Heading (Above) indicates that you are required to select at least 1 Equipment Item by entering the Quantity of items that will be installed with your solar system.
Select Installer and Seller for Inverter

- Select the installer and seller from the drop down boxes
- Then select “Add Equipment”
Adding Equipment for the Site

- Select “New Module”
• Select the module from the list of approved equipment
• List is searchable by name or manufacturer

The Asterisk (*) next to the Qty Heading (Above) indicates that you are required to select at least 1 Equipment Item by entering the Quantity of items that will be installed with your solar system.
Select Installer and Seller for Module

- Select the installer and seller from the drop down boxes
- Then select “Add Equipment”
Site Complete

Site Information: Complete
Attachments: Complete
Equipment: Complete

Before submitting your Site for approval, please review the following statuses. Complete any items where status is Incomplete.
**Ready to Submit Project**

Before submitting your Project for approval, please review the following statuses. Complete any items where status is Incomplete.

<table>
<thead>
<tr>
<th>Category</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Information</td>
<td>Complete</td>
</tr>
<tr>
<td>Attachments</td>
<td>Complete</td>
</tr>
<tr>
<td>Sites</td>
<td>Complete</td>
</tr>
</tbody>
</table>
Questions?
Energy Efficiency Overview

Victor Yakshin
Agenda

- Energy Standards
- Title 24 Documentation
- Finding Energy Consultant
- PV Credit
- PV System Eligibility
- PV Credit Calculation
- 2013 Standards
Determining Energy Standards


Title 24 Documentation

• CF-1R: Certificate of Compliance
  – Model of the house
  – How efficient it is compared to code

• PERF-1: Performance Certificate of Compliance.
  – Same thing as the CF-1R, but for high-rise/non-residential building.
Finding an Energy Consultant

• California Association of Building Energy Consultants (CABEC)
  – www.cabec.org

• 2013 Tier I/II:
  – A CEA who is approved by the California Association of Building Energy Consultants (CABEC) must sign the compliance documentation.
Let's build a more energy efficient California together!

View Member Benefits

Do you have a CABEC account?
Click here to log in!

Industry and Utility Supporters

QuietCool
ADVANCED WHOLE HOUSE FANS

WHAT'S HAPPENING LATELY

Non Code Change Years

<table>
<thead>
<tr>
<th>2013 Exam Status</th>
<th>Exam Requirements to be Certified for 2013 Code ** Additional requirements apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACM Pass</td>
<td>Done with exam portions of requirements</td>
</tr>
<tr>
<td>ACM Pass</td>
<td>Re-take and pass 2013 Multiple Choice exam</td>
</tr>
<tr>
<td>ACM Pass</td>
<td>Re-take and pass 2013 ACM</td>
</tr>
</tbody>
</table>

| 2016 & 2017       |                                                                              |
| ACM Pass         | Take and pass 2016 Multiple Choice Certification exam ($200 for CABEC Members, $300 for Non-members) |
| ACM Pass         | Take and pass 2016 Multiple Choice exam ($200 for CABEC Members, $300 for Non-members) |
| ACM Pass         | Take and pass 2016 Multiple Choice Certification exam ($100 for CABEC Members, $150 for Non-members) |

CABEC Conference 2017: Call
Search All Current CEAs

- Residential CEAs are displayed first, and Nonresidential CEAs below.
- Search by name or any other field below by clicking “Search” — and click column headings to sort.
- Looking for more information about an individual? Try our CABEC Member Search! or open in a new tab instead
- Please let us know using the contact form in the bottom right corner of the screen if anything seems wrong!

Search by Name
Find An Energy Consultant

Search All CABEC Members’ Professional Profiles

- View All Active CABEC Members

Search by NAME

Search by COMPANY

Filter by RES CEA STATUS

RES: Filter by Latest Standards

Filter by NR CEA STATUS

NR: Filter by Latest Standards

Filter by COUNTY

Filter by CITY

Filter by ZIP CODE

Search
Members

Search Again: by Name or Company, or refine by CEA cert status or location!

Search by NAME  Search by COMPANY  Filter by RES CEA STATUS

Filter by COUNTY  Filter by CITY  Filter by ZIP CODE  Search

ALL MEMBERS  1681

Viewing 1 – 283 of 283 members

Sean Allen
Energy Inspectors
City: Las Vegas
County: CLARK
Res CEA Status: Current Nonres CEA Status:

Mufeed Alshakhori
Mufeed Alshakhori
Balanced
Comfort
City: Fresno
County: Fresno
Res CEA Status: None

Chandra Apperson
Apperson Energy
Management
City: Redwood Valley
County: Mendocino
Res CEA Status:
PV Credit
PV Credit to 2016 Energy Standards

• Can be taken in place of HPW/HPA

• Significant change in building code

• We only pay incentives for the portion of the system that exceeds the system size required by the Title 24 compliance software.
What is a PV Credit?

• A credit in your Title 24 documentation towards meeting code based on the installed solar energy system.

• The eligible NSHP system size shall be the difference between the proposed system and the system size required to receive the PV credit in the Title 24 modeling software ("compliance size").
PV Credit Details

- Available for use on the CF-1R
- Not available for use on the PERF-1
- Size of the PV Credit varies
- Compliance size needed to claim PV credit depends on: Climate Zone, Conditioned floor area, occupancy (SF or MF), and standard design of a home.
  - Minimum compliance size is 2 kW DC for single-family residence, 1 kW DC for a multifamily unit.
Climate Zone PV Credit Availability

http://www.energy.ca.gov/maps/renewable/BuildingClimateZonesByZIPCode.pdf
How to Assess if PV Credit Was Taken?

- On the CF-1R in the Energy Use Summary, a negative value for the Proposed Design of the Photovoltaic Offset indicates that the photovoltaic credit was claimed.
PV Credit Taken Example

**Figure 2-4: 2016 Energy Standards Single-Family CF-1R Energy Use Summary**

<table>
<thead>
<tr>
<th></th>
<th>04</th>
<th>05</th>
<th>06</th>
<th>07</th>
<th>08</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Energy Use (kTDV/ft²·yr)</td>
<td>Standard Design</td>
<td>Proposed Design</td>
<td>Compliance Margin</td>
<td>Percent Improvement</td>
</tr>
<tr>
<td>Space Heating</td>
<td>22.18</td>
<td>17.75</td>
<td>4.43</td>
<td>20.0%</td>
<td></td>
</tr>
<tr>
<td>Space Cooling</td>
<td>5.49</td>
<td>1.79</td>
<td>3.70</td>
<td>67.4%</td>
<td></td>
</tr>
<tr>
<td>IAQ Ventilation</td>
<td>1.06</td>
<td>1.06</td>
<td>0.00</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Water Heating</td>
<td>8.48</td>
<td>8.48</td>
<td>0.00</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Photovoltaic Offset</td>
<td>---</td>
<td>-8.41</td>
<td>8.41</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Compliance Energy Total</td>
<td>37.21</td>
<td>20.67</td>
<td>16.54</td>
<td>44.5%</td>
<td></td>
</tr>
</tbody>
</table>

Source: California Energy Commission
PV Credit Taken, However NOT Needed?

- Applicant must notify the Energy Commission to request that the eligible system size not be reduced by the compliance size.

- Verify by comparing compliance margin of the PV offset to the compliance energy total.
PV Credit Taken, However NOT Needed?

• If compliance energy total is > or = to PV offset, home could comply w/o the PV credit on efficiency measures alone.

Figure 3: How to Identify Whether the PV Credit Was Needed for Compliance
Impact of PV Credit

• Impact:
  – If the PV credit was used to comply with the 2016 Standards, the system size eligible for NSHP incentives will be reduced by the system size needed to claim the PV credit (“NSHP compliance size”).

  – Depending on the project type, the NSHP compliance size is determined by the “one size fits most” or “detailed” approach.
“One Size Fits Most Approach”

- Compliance Size for Single Family Homes (Buildings up to $2500Ft^2$)
- Homes with conditioned floor area $\leq 2500$ sq. ft, NSHP compliance size will be determined solely by Climate Zone.

<table>
<thead>
<tr>
<th>Climate Zone</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSHP Compliance Size (kW DC)</td>
<td>2.1</td>
<td>2.1</td>
<td>2.0</td>
<td>2.1</td>
<td>2.0</td>
<td>n/a</td>
<td>n/a</td>
<td>2.1</td>
</tr>
<tr>
<td>Climate Zone</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>NSHP Compliance Size (kW DC)</td>
<td>2.1</td>
<td>2.1</td>
<td>2.2</td>
<td>2.2</td>
<td>2.2</td>
<td>2.2</td>
<td>2.3</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Source: California Energy Commission
One Size Fits Most Approach Example #1

• Assume that a 4.0 kW DC system is being installed.

• Home is 2,200 $Ft^2$.

• Located in Climate Zone 12.
### One Size Fits Most Approach Example #1

<table>
<thead>
<tr>
<th>Climate Zone</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSHP Compliance Size (kW DC)</td>
<td>2.1</td>
<td>2.1</td>
<td>2.0</td>
<td>2.1</td>
<td>2.0</td>
<td>n/a</td>
<td>n/a</td>
<td>2.1</td>
</tr>
<tr>
<td>Climate Zone</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>NSHP Compliance Size (kW DC)</td>
<td>2.1</td>
<td>2.1</td>
<td>2.2</td>
<td>2.2</td>
<td>2.2</td>
<td>2.3</td>
<td>2.1</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Source: California Energy Commission
One Size Fits Most Approach Example #1

- 4 kW DC system, 2,200 $Ft^2$.

- CZ 12 Compliance Size = 2.2 kW DC

- NSHP Eligible System Size (DC) now becomes = 4.0 kW − 2.2 kW = 1.8 kW DC.
One Size Fits Most Approach Example #2

• Assume that a 4.0 kW DC system is being installed.

• Home is 2,500 $Ft^2$.

• Located in Climate Zone 3.
### One Size Fits Most Approach Example #2

<table>
<thead>
<tr>
<th>Climate Zone</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NSHP Compliance Size (kW DC)</strong></td>
<td>2.1</td>
<td>2.1</td>
<td>2.0</td>
<td>2.1</td>
<td>2.0</td>
<td>n/a</td>
<td>n/a</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Climate Zone</strong></td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td><strong>NSHP Compliance Size (kW DC)</strong></td>
<td>2.1</td>
<td>2.1</td>
<td>2.2</td>
<td>2.2</td>
<td>2.2</td>
<td>2.2</td>
<td>2.3</td>
<td>2.1</td>
</tr>
</tbody>
</table>

*Source: California Energy Commission*
One Size Fits Most Approach Example #2

- 4 kW DC system, 2,500 $Ft^2$.

- CZ 3 Compliance Size = 2.0 kW DC

- NSHP Eligible System Size (DC) now becomes = $4.0 \text{ kW} - 2.0 \text{ kW} = 2.0 \text{ kW DC}$. 
“Detailed Approach”

• Compliance Size for Single Family Homes (Buildings larger than 2500 $Ft^2$)

• Buildings with a conditioned floor area greater than 2500 sq. ft, NSHP compliance size shall be equivalent to the Title 24 size.
  – FI Calculator will calculate the compliance size using the following inputs which are found on each CF-1R:
    • Climate Zone
    • Conditioned Floor area
    • Photovoltaic offset
Detailed Approach Example

### GENERAL INFORMATION

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Project Name</td>
<td>CEC Example House</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Calculation Description</td>
<td>New Single Family Home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Project Location</td>
<td>123 Main Street</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>City</td>
<td>Sacramento, CA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>Standards Version</td>
<td></td>
<td>Compliance 2017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>Zip Code</td>
<td>12345</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07</td>
<td>Compliance Manager Version</td>
<td></td>
<td>BEMCmpMgr 2016.2.0 (592)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>Climate Zone</td>
<td>CZ12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>Software Version</td>
<td></td>
<td>CBECC-Res 2016.2.0 (857)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Building Type</td>
<td>Single Family</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Front Orientation (deg/Cardinal)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Project Scope</td>
<td>Newly Constructed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Number of Dwelling Units</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Total Cond. Floor Area (ft²)</td>
<td>2500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Number of Zones</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Slab Area (ft²)</td>
<td>2500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Number of Stories</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Addition Cond. Floor Area</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Natural Gas Available</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Addition Slab Area (ft²)</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Glazing Percentage (%)</td>
<td>16.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: California Energy Commission

### ENERGY USE SUMMARY

<table>
<thead>
<tr>
<th></th>
<th>05</th>
<th>06</th>
<th>07</th>
<th>08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Use (kTDV/ft²·yr)</td>
<td>Standard Design</td>
<td>Proposed Design</td>
<td>Compliance Margin</td>
<td>Percent Improvement</td>
</tr>
<tr>
<td>Space Heating</td>
<td>22.18</td>
<td>17.75</td>
<td>4.43</td>
<td>20.0%</td>
</tr>
<tr>
<td>Space Cooling</td>
<td>5.49</td>
<td>1.79</td>
<td>3.70</td>
<td>67.4%</td>
</tr>
<tr>
<td>IAQ Ventilation</td>
<td>1.06</td>
<td>1.06</td>
<td>0.00</td>
<td>0.0%</td>
</tr>
<tr>
<td>Water Heating</td>
<td>8.48</td>
<td>8.48</td>
<td>0.00</td>
<td>0.0%</td>
</tr>
<tr>
<td>Photovoltaic Offset</td>
<td>—</td>
<td>8.41</td>
<td>8.41</td>
<td>—</td>
</tr>
<tr>
<td>Compliance Energy Total</td>
<td>37.21</td>
<td>20.67</td>
<td>16.54</td>
<td>44.5%</td>
</tr>
</tbody>
</table>

Source: California Energy Commission
Compliance Size for Multifamily Projects

- Low-rise MF Buildings:
  - compliance size shall be equivalent to Title 24 compliance size, which is determined by:
    - Climate Zone
    - Conditioned floor area
    - Photovoltaic offset
    - Number of dwelling units.
# Multifamily PV Credit

## General Information

<table>
<thead>
<tr>
<th>01</th>
<th>Project Name</th>
<th>MF with PV Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>Calculation Description</td>
<td>123 Main Street</td>
</tr>
<tr>
<td>04</td>
<td>City</td>
<td>San Jose, CA</td>
</tr>
<tr>
<td>05</td>
<td>Standards Version</td>
<td>Compliance 2017</td>
</tr>
<tr>
<td>06</td>
<td>Zip Code</td>
<td>07</td>
</tr>
<tr>
<td>08</td>
<td>Climate Zone</td>
<td>CZ4</td>
</tr>
<tr>
<td>10</td>
<td>Building Type</td>
<td>Multifamily</td>
</tr>
<tr>
<td>11</td>
<td>Front Orientation (deg/Cardinal)</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>Project Scope</td>
<td>Newly Constructed</td>
</tr>
<tr>
<td>13</td>
<td>Number of Dwelling Units</td>
<td>40</td>
</tr>
<tr>
<td>14</td>
<td>Total Cond. Floor Area (ft²)</td>
<td>40000</td>
</tr>
<tr>
<td>15</td>
<td>Number of Zones</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>Slab Area (ft²)</td>
<td>20000</td>
</tr>
<tr>
<td>17</td>
<td>Number of Stories</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>Addition Cond. Floor Area</td>
<td>N/A</td>
</tr>
<tr>
<td>19</td>
<td>Natural Gas Available</td>
<td>Yes</td>
</tr>
<tr>
<td>20</td>
<td>Addition Slab Area (ft²)</td>
<td>N/A</td>
</tr>
<tr>
<td>21</td>
<td>Glazing Percentage (%)</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

## Energy Use Summary

<table>
<thead>
<tr>
<th>Energy Use (kTDV/ft²-yr)</th>
<th>Standard Design</th>
<th>Proposed Design</th>
<th>Compliance Margin</th>
<th>Percent Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space Heating</td>
<td>3.12</td>
<td>3.74</td>
<td>-0.62</td>
<td>-19.9%</td>
</tr>
<tr>
<td>Space Cooling</td>
<td>4.43</td>
<td>10.49</td>
<td>-6.06</td>
<td>-136.8%</td>
</tr>
<tr>
<td>IAQ Ventilation</td>
<td>2.16</td>
<td>2.16</td>
<td>0.00</td>
<td>0.0%</td>
</tr>
<tr>
<td>Water Heating</td>
<td>28.32</td>
<td>23.24</td>
<td>5.08</td>
<td>17.9%</td>
</tr>
<tr>
<td>Photovoltaic Offset</td>
<td>---</td>
<td>-4.22</td>
<td>4.22</td>
<td>---</td>
</tr>
<tr>
<td>Compliance Energy Total</td>
<td>38.03</td>
<td>35.41</td>
<td>2.62</td>
<td>6.9%</td>
</tr>
</tbody>
</table>
PV System Eligibility

- Limits eligibility to systems installed with azimuths between 90 degrees and 280 degrees.

- Why?
  - Streamlines field verification requirements
  - Simplifies calculation for all projects.
PV System Eligibility

• Capacity outside of the eligible azimuth range can be counted toward solar compliance size (ineligible equipment).
  − Equipment installed outside of the eligible azimuth range of 90 to 280 may still be used to offset the solar compliance size requirement.

• If a system consists of panels both within and outside the eligible range, then the panels within the range will still be eligible.
  − Only applicable to Guidebook 10 projects.
PV System Eligibility Example

- Size Required for solar compliance (PV) credit: 2.0 kW
- Ineligible Equipment: 1.0 kW
- $X = $Eligible System Size$

\[
X \text{ (Eligible System Size)} - [\text{PV Credit} - \text{Ineligible}] \\
X - [2 - 1] \rightarrow X - 1
\]
PV Credit Calculation

- Size for Incentive (DC) =

\[
\text{Eligible Size(DC)} - (\text{PV Credit (DC)} - \text{Ineligible Size(DC)})
\]

when PV Credit is $>\text{ineligible}$

\[
\text{Eligible Size when PV Credit is } \leq \text{ineligible}
\]
PV Credit Calculation

• Eligible Size: are the kW that are installed within the azimuth range.

• PV Credit: The compliance size (remember, the minimum size must be 2.0 kW for sf, 1.0 for mf).

• Ineligible size: the kW that are installed outside of the azimuth range.
Ineligible Equipment Example

• Let us assume the following for a home:
  – 4.0 kW were installed that were eligible.
  – 4.0 kW were installed that were ineligible.

• The PV Credit (compliance size): 2.0 kW (the minimum compliance size required).
Ineligible Equipment Example

• It would look like this:
  4.0 kW(eligible) – [2.0kW(compliance size) – 4.0 kW(ineligible)]

• This would equal:
  4.0 kW – [-2.0 kW] → 4.0 kW + 2.0 kW = 6.0 kW eligible for incentive.

NONSENSE!!!!
Ineligible Equipment Example

• Remember, the PV Credit must be $\geq 0$; it cannot be negative!

• Therefore the [-2.0 kW] $\rightarrow$ [0 kW] which would now become:

$$4.0 \text{ kW} - [0 \text{ kW}] = 4.0 \text{ kW}$$

that are eligible for the incentive.
# 2013 Energy Standards Requirements

<table>
<thead>
<tr>
<th>Tiers</th>
<th>Low-Rise</th>
<th>High-Rise/Non-Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code-Compliant</td>
<td>Meets <em>2013 Energy Standards</em> prior to claiming the PV credit for the <em>2013 Energy Standards</em>.</td>
<td>Meets <em>2013 Energy Standards</em> prior to claiming the PV credit for the <em>2013 Energy Standards</em>.</td>
</tr>
<tr>
<td>Tier I</td>
<td>15% better than standard on CF-1R</td>
<td>10% better than standard on PERF-1.</td>
</tr>
<tr>
<td>Tier II</td>
<td>30% better than standard on CF-1R</td>
<td>15% better than standard on PERF-1.</td>
</tr>
</tbody>
</table>
Questions?
BREAK TIME! 😊

BACK IN 5

- BATHROOM BREAK IN PROGRESS

KeepCalmAndPosters.com
Other Reservation Details and FI Calculator Demo

Lucio Hernandez
Agenda

• Incentive Disclosure Affidavit
• Affordable Housing
• Disadvantaged Communities
• Additional Information on Reservations
• Flexible Installation (FI) Calculator Demonstration
Incentive Disclosure Affidavit Form

• All projects where the payee is not the end user will need to complete the Incentive Disclosure Affidavit

• Eliminates need for NSHP Rebate amount to be listed in Lease/PPA
Affordable Housing

Affordable Housing/Disadvantaged Community Projects

- 36 month reservation period
- Minimum of 20% for extremely low, very low, lower, or moderate income
- Enables affordable housing common area project eligibility for the affordable housing residential incentive rate as long as 80% or more of the residential units are considered affordable
Regulatory Agreement (Affordable Housing Projects Only)

- Health and Safety code 50052.5, 50053, or 50199.4
- List project name and number of residential units
- Minimum of 20% units reserved for low income
- Income restricted for minimum 10 years
- Signed and executed with housing agency
Disadvantaged Communities (Affordable Housing Projects Only)

- Indicate on the NSHP-1
- Identify the census tract number in which the project is located or provide a copy of the CalEnviroscreen score for the project from http://oehha.ca.gov/calenviroscreen/report/calenviroscreen-version-20
- Disadvantaged Community Incentive (DCI) = (Incentive from FI Calculator) x 20%
System Size Justification (Common Area Projects Only)

- Letter or calculations containing the expected annual kWh usage of the common area for systems greater than 7.5kW.

- Completed and Signed by:
  - Certified Energy Analyst
  - Professional Engineer
  - Architect
  - C-10 licensed electrical contractor
Additional Information (All Project Types)

• Project-Level Funding
  – Like a bank account

• Considering Tenth Edition for existing projects
  – Applicant may send request to Renewable@energy.ca.gov
  – Submit FI-1 form and corresponding .huf file for all sites in project
CEC Application Review

• Projects reviewed in order they are submitted
• Application Approved
  – Reservation period begins (18 or 36 months)
• Application Disapproved
  – Errors (15 day correction period)
  – Re-Apply
• Ineligible Applications
FI Calculator Demo

- FI form previews on following slides
- Download at
Flexible Installation Calculator (for New Solar Homes Partnership) - - supports NSHP reservation applications and payment claims submitted under NSHP Guidebook, Tenth Edition through estimates of system performance. Use of this calculator is required for all projects reserved after March 8, 2017 including all 2016 Building Energy Efficiency Standards projects. Previously reserved projects can elect to adhere to the NSHP Guidebook, Tenth Edition and use this calculator.
Please enter your
first name: 
last name: 
e-mail address:

Choose what to do:  Subscribe ☐ | Unsubscribe ☐

Send  Reset

Note: Your first & last name and e-mail address must be exact and complete. Incorrect or incomplete addresses will not work. You will receive a welcoming e-mail to confirm your subscription.

If you do not wish to subscribe to the list serve, you can still download the latest version of the FI or CECPV Calculator on the: Download Page.
Download the Energy Commission Flexible Installation (FI) Calculator Version 1.1

The FI Calculator is only to be used for NSHP projects subject to the NSHP Guidebook, Tenth Edition, and may be used for the 2008, 2013, and 2016 updates of the California Building Energy Efficiency Standards. The FI Calculator is the only NSHP calculator available for projects complying with the 2016 update of the California Building Energy Efficiency Standards.

Applicants with projects subject to previous editions of the NSHP Guidebook may request their projects instead be subject to the requirements of the NSHP Guidebook, Tenth Edition in order to use the FI Calculator. These projects will be required to follow all other eligibility criteria and requirements from the new guidebook.

Updated: April 26, 2017

Note: To qualify for an incentive, residential buildings must receive electricity distribution service at the site of installation from one of four investor-owned utilities (IOUs) in California. The IOUs are: Pacific Gas & Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, and Southern California Water Company - doing business as Bear Valley Electric Service. On the list within the calculator, there are zip codes that are not served by the above utilities. You can determine what utility serves your project by going to the page called Finding Your Utility Company.

Version 1.1 Installation

(MSI file, 2.7 megabytes) Click the Link to download. Choose "Run" to launch the installer file. Follow the prompts from the install tool.

Current Equipment Library Version: Feb-17

Calculator Support

Flexible Installation Calculator User Guide

(PDF file, 1.1 MB)
Questions?
Energy Efficiency (EE) and Photovoltaic (PV) Verifications

Kevin Wong
Verifications Agenda

- Verifications Overview
- HERS Raters
- Photovoltaic (PV) Verification
  - Overview
  - Document Review
- Energy Efficiency (EE) Verification
  - Overview
  - Document Review
Verifications

• Purpose: Proposed Design vs Actual Design for Photovoltaic (PV) and Energy Efficiency (EE)

• Who: Builders, Solar Installers and Home Energy Rating Service (HERS) raters
Where to find a HERS rater

- HERS registries certified for 2008/2013 PV verification
  - CalCERTS
    - Calcerts.com
  - ConSol Home Energy Efficiency Rating Service (CHEERS)
    - Cheers.org

- Same registry for EE and PV verifications
Photovoltaic Verifications

Verified fields against FI-1: Shading, Azimuth, Equipment, Climate Zone, Performance

<table>
<thead>
<tr>
<th></th>
<th>Solar Installer</th>
<th>PV HERS Rater</th>
</tr>
</thead>
<tbody>
<tr>
<td>FI-2 or FI-2E</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>FI-3</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
NSHP Flexible Installation Certificate of Compliance

Single Family 1 Array String Inverter Mnt Shade

<table>
<thead>
<tr>
<th>Calculation Name</th>
<th>1/31/2017</th>
<th>3:22:50 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculation Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calculation Time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ZIP Code: 92316

Climate Zone: Dec-16

Equipment Library: Shaded

Number of Sites: 1

Inverters Per Site with Identical Design Details: 1

Calculation Type: Single Family, Market Rate, Residential

Efficiency Level: 2013 Code Compliant

PV SYSTEM INFORMATION

Inverter Manufacturer and Model: Power-One PVI-4.2-OUTD-US (240V)

Module Manufacturer and Model: SunPower SPR-240VH-PR-0

Array #1 Module Quantity: 20

Total System Modules: 20

Initial Eligible System Size: 4.05 kW DC

kW AC Receiving Incentives: 4.05

SHADING

<table>
<thead>
<tr>
<th>Array #</th>
<th>Minimally Shaded?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

Annual Solar Access: 100%

CALCULATION RESULTS

<table>
<thead>
<tr>
<th>Incentive Level</th>
<th>Incentive Rate ($)</th>
<th>Per Site Incentive</th>
<th>Project Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>$1.00</td>
<td>$20.00</td>
<td>$50.00</td>
</tr>
<tr>
<td>6</td>
<td>$1.00</td>
<td>$20.00</td>
<td>$50.00</td>
</tr>
<tr>
<td>7</td>
<td>$2.00</td>
<td>$20.00</td>
<td>$140.00</td>
</tr>
<tr>
<td>8</td>
<td>$2.00</td>
<td>$20.00</td>
<td>$140.00</td>
</tr>
</tbody>
</table>

NOTES

This PIC output form lists the FF features and specifications needed to comply with the current NSHP-Guidebook requirements. The FF installation will require installer testing and final verification as approved MHSB Rate. The final NSHP incentive amount paid to the applicant is subject to change based on the specifications and configuration of the installed system.

For current incentive level, please visit: https://www.energy.ca.gov/rates/Pages/Utility/RateAdjust/NSHP.aspx

R Calculator v0.58.7

Note: system outputs in above table do not account for any shading of the system.
## Forms (FI-2)

### FI Installation Certificate

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Number</td>
<td>[Value]</td>
</tr>
<tr>
<td>Make</td>
<td>[Value]</td>
</tr>
<tr>
<td>Year of Manufacture</td>
<td>[Value]</td>
</tr>
<tr>
<td>Equipment Type</td>
<td>[Value]</td>
</tr>
<tr>
<td>Installation Date</td>
<td>[Value]</td>
</tr>
</tbody>
</table>

### Field Measurements for Performance Verification

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value Measured</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient Temperature (°C)</td>
<td>[Value]</td>
<td>[Value]</td>
</tr>
<tr>
<td>Solar Irradiance, Array 1 (W/m²)</td>
<td>[Value]</td>
<td>[Value]</td>
</tr>
<tr>
<td>Solar Irradiance, Array 2 (W/m²)</td>
<td>[Value]</td>
<td>[Value]</td>
</tr>
<tr>
<td>Solar Irradiance, Array 3 (W/m²)</td>
<td>[Value]</td>
<td>[Value]</td>
</tr>
</tbody>
</table>

### Performance Variations

<table>
<thead>
<tr>
<th>Item</th>
<th>Method Used</th>
<th>Value</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Array 1-3 Expected Output from Field</td>
<td>[Value]</td>
<td>[Value]</td>
<td>[Value]</td>
</tr>
<tr>
<td>Array 1-3 Expected Output from Field</td>
<td>[Value]</td>
<td>[Value]</td>
<td>[Value]</td>
</tr>
<tr>
<td>Array 1-3 Expected Output from Field</td>
<td>[Value]</td>
<td>[Value]</td>
<td>[Value]</td>
</tr>
<tr>
<td>Total Expected Output (W)</td>
<td>Sum of lines 1-3</td>
<td>[Value]</td>
<td>[Value]</td>
</tr>
<tr>
<td>Electric Production (W) as shown on the meter or performance meter display</td>
<td>Line #1 + Line #2</td>
<td>Line #3</td>
<td>[Value]</td>
</tr>
</tbody>
</table>

---

1. As array is additionally connected and characterized at least 1/2 of the array on the right handshake when the array is not fully shaded.
2. The minimum irradiance is obtained through the use of a solar simulator test of minimum, model, and solar test.
3. L1:Use of a standard test conditions from the field measurement table along with the ambient temperature (to be the 75°F from the applicable test)
Forms (FI-3)
PV Sample Testing

• Benefit
  – One test will cover all system designs installed within the same sample group.

• Requirements
  – Sites from same subdivision/project
  – Group closes when (whichever occurs first):
    • 15 sites are added to group
    • 6 months elapsed
Sample Group Testing Process

- Testing Process
  - One site will be pulled at random for testing
  - Three tries before all sites must be tested
  - Additional sites added to group after testing can be passed by association
# Energy Efficiency Verifications

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CF-3R</td>
<td>X*</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>EE-3 (Above Code Features)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

* Only one of the two forms is needed.
Final Building Permit

- Document completed by the building department from your jurisdiction.
- Things to look for:
  - Scope of work
  - Final sign-off
  - Site address
CF-3R

- Completed by a HERS rater to verify that HERS measures requirements are met. This will vary per home.
EE-3 (Above Code Features)

- Completed by a HERS rater to verify that additional energy features have been completed.

**Site Details**

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Lot 13 - Tract 6003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Address</td>
<td>2138 East Makenna Drive</td>
</tr>
<tr>
<td>Lot Identification</td>
<td>13</td>
</tr>
<tr>
<td>View/Edit...</td>
<td>Plan &amp; Programs: T24, CAHP, NSHR, PV</td>
</tr>
</tbody>
</table>

**Site Details**

- **Mech20**: Duct Leakage Test - New, McCaffrey Homes, California Living & Energy, Required (Title-24), Passed
- **Mech22**: Airflow & Pan Watt Draw, McCaffrey Homes, California Living & Energy, Required (Title-24), Passed
- **Mech23**: High EER Equipment, McCaffrey Homes, California Living & Energy, Required (Title-24), Passed
- **Mech25/26**: Refrigerant Charge, McCaffrey Homes, California Living & Energy, Required (Title-24), Passed
- **Mech28**: Low Leakage Air Handler, McCaffrey Homes, California Living & Energy, Required (Title-24), Passed
- **NonHERS**: Non-HERS Verification, California Living & Energy, Optional (Above Code), Passed
- **PV**: Photovoltaic, Donald R Dick Air Conditioning, California Living & Energy, Required (Title-24), Passed

**CHEERS Non-HERS Verification**
Above Code Features

• Completed by a HERS rater to verify that additional energy features have been completed.

CalCERTS Additional Energy Features
Registry Access

- Applicable for CalCERTS projects only
- Contact the individual managing your project in the HERS registry
- Access should be granted to the “California Energy Commission”
Questions?
NSHP Payment Claim Applications

Eric Ritter
Agenda

• Web Tool Site Information & Attachments Pages

• Overview & Explanation of Required Documents
  – NSHP-2 Payment Claim Form
  – NSHP-3 Ten Year Warranty and Cost Documentation
  – Utility Approval of Interconnection
  – Lease Agreement/Power Purchase Agreement
  – PV/EE verification documents
  – Revised FI-1 form

• Explanation of submission process in web tool

• Explanation of review process
• Fill out the site-level information by clicking on either of the information links highlighted in the red boxes.
<table>
<thead>
<tr>
<th>Rebate Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Valuation (TDV): 125556</td>
</tr>
<tr>
<td>Incentive Calculator:</td>
</tr>
<tr>
<td>Rebate Amount*: $1,255.00</td>
</tr>
<tr>
<td>Title 24 Margin*: 0.00 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Permits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Permit Issue Date*: 04/13/2017</td>
</tr>
<tr>
<td>Certificate of Occupancy Date*: 04/27/2017</td>
</tr>
<tr>
<td>Solar Permit*:</td>
</tr>
<tr>
<td>Issue Date: 04/12/2017</td>
</tr>
<tr>
<td>Cost: $50.00</td>
</tr>
<tr>
<td>Electric Grid Interconnection Date*: 04/06/2017</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Acquired By*:</td>
</tr>
<tr>
<td>Purchase</td>
</tr>
<tr>
<td>Lease</td>
</tr>
<tr>
<td>Power Purchase Agreement (PPA)</td>
</tr>
<tr>
<td>Incentive Structure*:</td>
</tr>
<tr>
<td>Affordable Housing</td>
</tr>
<tr>
<td>Market Rate</td>
</tr>
<tr>
<td>Equipment Cost*: $5,000.00</td>
</tr>
<tr>
<td>Installation Cost*: $5,000.00</td>
</tr>
<tr>
<td>Balance of System Cost:</td>
</tr>
<tr>
<td>Total Cost: $10,500.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Efficiency Provider (EE)*: CalCERTS</td>
</tr>
<tr>
<td>Raters Cost (EE)*: $50.00</td>
</tr>
<tr>
<td>Photovoltaic System Provider (PV)*: CalCERTS</td>
</tr>
<tr>
<td>Raters Cost (PV)*: $50.00</td>
</tr>
<tr>
<td>Total HERS Rater Cost: $100.00</td>
</tr>
</tbody>
</table>

- TDV must be greater than 1
- Permit dates
- Sale arrangement information and total system cost
- HERS registry used for verifications
- Click Save and Return
Web Tool Site Information

- The site information status will change to ‘Complete’ once all of the required fields are complete.
Web Tool Site Attachments

- Click on either of the links highlighted in the red box.
Web Tool Site Attachments

<table>
<thead>
<tr>
<th>Guidebook Requirement</th>
<th>Attach</th>
<th>Mail In</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Building Permit Signoff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final System Cost Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HERS EE Verification Forms CF-4R / CF-3R and NSHP EE-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HERS PV Verification Form (NSHP FI-3)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interconnect Authorization Letter*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lease / PPA Agreement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Documents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revised FI Calculator Form (NSHP FI-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signed NSHP-2 Form (Must be mailed to Program Administrator.)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STD-204 Payee Data Form*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ten-Year Warranty and Final Cost Form (NSHP-3)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utility Energy Efficiency Program Payment Approval Letter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NSHP-2 Payment Claim Form

Create the NSHP-2 by clicking “Download payment claim form” in the web tool site attachments page

<table>
<thead>
<tr>
<th>Guidebook Requirement</th>
<th>Attach</th>
<th>Mail In</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Final Building Permit Signoff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Final System Cost Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. HERS EE Verification Forms CF-4R / CF-3R and NSHP EE-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. HERS PV Verification Form (NSHP FI-3)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Interconnect Authorization Letter*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Lease / PPA Agreement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Miscellaneous Documents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Revised FI Calculator Form (NSHP FI-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Signed NSHP-2 Form (Must be mailed to Program Administrator,)*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>10. STD-204 Payee Data Form*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>11. Ten-Year Warranty and Final Cost Form (NSHP-3)*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>12. Utility Energy Efficiency Program Payment Approval Letter</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
</tbody>
</table>
State of California

NSHP-2
New Solar Homes Partnership Payment Claim Form

[CEC use only]

Payment Request = $ ________________
Payment Approval Date: ________________
Staff Member Initials: ________________
Project Name: ________________

Reservation ID
Project Name or Address
Site ID: NP0007GF
125 Fake St Sacramento, CA 90016
NS003USE

1. Confirmation of Reservation Amount

Test2 has been granted a reservation of $1,255.00 for a 2.76 kW solar energy system. This reservation is for a Custom Home project and will expire on 10/21/2018. The system is being installed at 125 Fake St. The payment will be made to ________________ (designated payee).

The solar energy system must be installed prior to submitting the NSHP-2. Failure to meet these requirements will cause the payment of NSHP incentives to be delayed or withheld. The NSHP-2 form must be postmarked by the expiration date and all required supporting documentation must be submitted no later than 3 months or 90 calendar days, whichever is later, after the expiration date or the reservation will expire and the incentive amount will be forfeited. This reservation is non-transferable. System must be installed at the installation address.

2. System Details

Sales Arrangement: [ ] Purchased [ ] Leased [ ] PPA
Occupancy Permit Date: 4/27/2017 Solar Permit Application Date: ________________ Solar Permit Issue Date: 4/12/2017

I certify that, to the best of my knowledge, the above dates are correct: ________________
NSHP-2 Payment Claim Form

1. Ensure all of the information that populated from the web tool is accurate.

1. Confirmation of Reservation Amount

Test2 has been granted a reservation of $1,255.00 for a 2.76 kW solar energy system. This reservation is for a Custom Home project and will expire on 10/21/2018. The system is being installed at 125 Fake St. The payment will be made to test test (designated payee).

The solar energy system must be installed prior to submitting the NSHP-2. Failure to meet these requirements will cause the payment of NSHP incentives to be delayed or withheld. The NSHP-2 form must be postmarked by the expiration date and all required supporting documentation must be submitted no later than 3 months or 90 calendar days, whichever is later, after the expiration date or the reservation will expire and the incentive amount will be forfeited. This reservation is non-transferable. System must be installed at the installation address.
2. Ensure the sale arrangement information and permit dates are accurate. Initial with blue or black ink.

3. Identify any changes to the equipment since the reservation was approved.

Have any of the equipment or installation specifications changed since the reservation was approved? ☐ Yes ☐ No

If yes, note the changes before claiming payment.
4. Indicate which form will be used to verify efficiency and if there were any changes to the building standards or energy efficiency levels since the reservation was approved.
NSHP-2 Payment Claim Form

5. Designate who should receive the NSHP payment ONLY IF it differs from the payee designated on the NSHP-1 reservation app

5. Payment Assignment

Is payment assigned to another party?
- Yes (Please fill out all the sections below.)
- No (Please skip Section 6 and complete all others.)

Assignment Request
I, [name], the applicant or authorized representative of the applicant as specified on the NSHP-1 form, hereby assign the right to receive payment for the above noted reservation under the NSHP to the following individual or entity and request that payment be forwarded to this individual or entity at the address below. A STD-204 must be submitted for the person/entity receiving the payment, if it is not already on record with the Energy Commission.

Name:
Address:
Phone Number:
6. Sign section 6 with blue or black ink. Electronic signatures are not acceptable.
7. Mail a physical copy with a wet signature to the following address:

NSHP PROGRAM
California Energy Commission
1516 9th St. MS-45
Sacramento, CA 95814
NSHP-2 Payment Claim Form

8. There is no need to upload this document to the web tool since you will be mailing in a physical copy, however the web tool requires you to click ‘mail in’ in the site attachments page in order for the payment claim to be ready to submit.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Lease / PPA Agreement</td>
</tr>
<tr>
<td>7.</td>
<td>Miscellaneous Documents</td>
</tr>
<tr>
<td>8.</td>
<td>Revised FI Calculator Form (NSHP FI-1)</td>
</tr>
<tr>
<td>9.</td>
<td>Signed NSHP-2 Form (Must be mailed to Program Administrator.)*</td>
</tr>
<tr>
<td>10.</td>
<td>STD-204 Payee Data Form*</td>
</tr>
<tr>
<td>11.</td>
<td>Ten-Year Warranty and Final Cost Form (NSHP-3)*</td>
</tr>
<tr>
<td>12.</td>
<td>Utility Energy Efficiency Program Payment Approval Letter</td>
</tr>
</tbody>
</table>
NSHP-2 Payment Claim Form

• EXPIRATION: The postmark date for the NSHP-2 must be on or before the project reservation expiration date
  – You have an additional 90 days or 3 months after your reservation expires to submit the remaining documentation

• Extension requests are given on a limited basis
  – Must be approved by CEC Executive Director
  – Instructions for applying for extensions can be found in the NSHP Guidebook, Tenth Edition, A-9 & A-10
NSHP-3 Ten Year Warranty and Cost Documentation

Create the NSHP-3 by clicking “Download Warranty Form” in the web tool

<table>
<thead>
<tr>
<th>Guidebook Requirement</th>
<th>Attach</th>
<th>Mail In</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Final Building Permit Signoff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Final System Cost Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. HERS EE Verification Forms CF-4R / CF-3R and NSHP EE-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. HERS PV Verification Form (NSHP FI-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Interconnect Authorization Letter*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Lease / PPA Agreement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Miscellaneous Documents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Revised FI Calculator Form (NSHP FI-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Signed NSHP-2 Form (Must be mailed to Program Administrator.)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. STD-204 Payee Data Form*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Ten-Year Warranty and Final Cost Form (NSHP-3)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Utility Energy Efficiency Program Payment Approval Letter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
State of California

NSHP-3
New Solar Homes Partnership Ten-Year Warranty and System Cost Form

1. System Information

This warranty applies to the following 2.76 kW solar electric generation system
Equipment Description: HiIS-S265RG, M215-60-2LL-IG-S2X (240V)
Located at: 125 Fake St Sacramento, CA 90016
Installation Cost: __________________________ Equipment Cost*:
Balance of System Cost: __________________________ Total Cost:

2. Warranty Coverage

This ten-year warranty is subject to the terms below (check one of the boxes):

- **All components of the generating system AND the system’s installation.** Said warrantor shall bear the full cost of diagnosis, repair, labor, and replacement of any system or system component, at no cost to the customer. Said warrantor also assumes coverage of the major system components in all situations where the manufacturer warranty does not cover the entire ten-year period; or

- **System’s installation only.** Said warrantor shall bear the full cost of diagnosis, repair, labor, and replacement of any system or system component, exclusive of the manufacturer’s coverage, at no cost to the customer. Copies of manufacturer ten-year warranty certificates for the major system components (i.e. photovoltaic modules and inverter) **MUST** be provided with this form.

- **Owner-builder or self-installed installation.** Warranty is inclusive only of the manufacturer’s coverage. Copies of manufacturer ten-year warranty certificates for the major system components (i.e. photovoltaic modules and inverter) **MUST** be provided with this
NSHP-3 Ten Year Warranty and Cost Documentation

1. Fill out all cost information. This replaces the need to include a final invoice.

1. System Information

This warranty applies to the following 3.66 kW solar electric generation system
Equipment Description: HiS-S265RG, PVI 3.0 OUTD-S-US-Z-M-A (208V)
Located at: 123 fake st Sacramento, CA 90023
Installation Cost: ____________________ Equipment Cost*: ____________________
Balance of System Cost: ____________________ Total Cost: ____________________
NSHP-3 Ten Year Warranty and Cost Documentation

2. Select the appropriate coverage type

2. Warranty Coverage

This ten-year warranty is subject to the terms below (check one of the boxes):

- **All components of the generating system AND the system’s installation.** Said warrantor shall bear the full cost of diagnosis, repair, labor, and replacement of any system or system component, at no cost to the customer. Said warrantor also assumes coverage of the major system components in all situations where the manufacturer warranty does not cover the entire ten-year period; or

- **System’s installation only.** Said warrantor shall bear the full cost of diagnosis, repair, labor, and replacement of any system or system component, exclusive of the manufacturer’s coverage, at no cost to the customer. Copies of manufacturer ten-year warranty certificates for the major system components (i.e. photovoltaic modules and inverter) **must** be provided with this form.

- **Owner-builder or self-installed installation.** Warranty is inclusive only of the manufacturer’s coverage. Copies of manufacturer ten-year warranty certificates for the major system components (i.e. photovoltaic modules and inverter) **must** be provided with this form. The owner-builder or self-installer assumes coverage of all other aspects of the ten-year warranty.
3. Indicate the warranty effective date. This date should not be more than 4 months before the date of interconnection.

General Terms

This warranty extends to the original purchaser and to any subsequent purchasers or owners at the same location during the warranty period. For the purpose of this warranty, the terms “purchaser,” “subsequent owner,” and “purchase” include a lessee, assignee of a lease, and a lease transaction, or a host customer, assignee of a power purchase agreement, and a power purchase agreement. This warranty is effective from ____________________________ (date of completion of the system installation). A copy of this warranty is provided to the purchaser of the solar electric generating system.
NSHP-3 Ten Year Warranty and Cost Documentation

4. Fill out the contact information for the warrantor and sign with blue or black ink. An electronic signature is not acceptable.
NSHP-3 Ten Year Warranty and Cost Documentation

5. OPTIONAL: For projects with multiple sites, section 4 can be used in place of filling out multiple NSHP-3 forms. An excel file can also be attached with the necessary information.
NSHP-3 Ten Year Warranty and Cost Documentation

6. Scan the NSHP-3 and upload it to the webtool. NSHP-3 does not need to be mailed in. Also upload copies of manufacturer’s warranty if NSHP-3 does not cover system components.

<table>
<thead>
<tr>
<th>Guidebook Requirement</th>
<th>Attach</th>
<th>Mail In</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Final Building Permit Signoff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Final System Cost Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. HERS EE Verification Forms CF-4R / CF-3R and NSHP EE-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. HERS PV Verification Form (NSHP FI-3)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Interconnect Authorization Letter*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Lease / PPA Agreement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Miscellaneous Documents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Revised FI Calculator Form (NSHP FI-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Signed NSHP-2 Form (Must be mailed to Program Administrator,)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. STD-204 Payee Data Form*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Ten-Year Warranty and Final Cost Form (NSHP-3)*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>12. Utility Energy Efficiency Program Payment Approval Letter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Utility Approval of Interconnection

• Upload official utility communication to web tool (i.e. email, screenshot, or PDF)

• Key items:
  – site address
  – PTO effective date

• Ensure PTO date is accurate in the web tool and on the NSHP-2

February 02, 2017

RE: Permission to Operate Account No.

Dear [Redacted]

Thank you for your participation in Pacific Gas and Electric Company's (PG&E) Solar and Net Energy Metering (NEM) Program. Your new generating system at [Redacted] was inspected and authorized for permission to operate on 02/02/2017 by generator log number [Redacted]. You may now interconnect to PG&E's electric grid and experience the benefits of renewable power. The equipment covered by this "Permission to Operate" includes:
Utility Approval of Interconnection

Upload to the web tool

<table>
<thead>
<tr>
<th>Guidebook Requirement</th>
<th>Attach</th>
<th>Mail In</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Building Permit Signoff</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>Final System Cost Documentation</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>HERS EE Verification Forms CF-4R / CF-3R and NSHP EE-3</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>HERS PV Verification Form (NSHP FI-3)*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>Interconnect Authorization Letter*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>Lease / PPA Agreement</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>Miscellaneous Documents</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>Revised FI Calculator Form (NSHP FI-1)</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>Signed NSHP-2 Form (Must be mailed to Program Administrator.)*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>STD-204 Payee Data Form*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>Ten-Year Warranty and Final Cost Form (NSHP-3)*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>Utility Energy Efficiency Program Payment Approval Letter</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
</tbody>
</table>
Lease Agreement/Power Purchase Agreement (PPA)

• Not required if end-use customer is purchasing the PV system

• Key items that must be included in the lease/PPA
  – Term of agreement is a minimum of 10 years
  – Lessee must have the option to remove the system at no cost at the end of the term
  – Lease must demonstrate that NSHP funding benefits the end-use customer
  – Lease must include a provision that the lessor will be the party responsible for repaying the NSHP funding if the lease or PPA is terminated early
Lease Agreement/Power Purchase Agreement (PPA)

Upload to the web tool

<table>
<thead>
<tr>
<th>Guidebook Requirement</th>
<th>Attach</th>
<th>Mail In</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Final Building Permit Signoff</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>2. Final System Cost Documentation</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>3. HERS EE Verification Forms CF-4R / CF-3R and NSHP EE-3</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>4. HERS PV Verification Form (NSHP FI-3)*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>5. Interconnect Authorization Letter*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>6. Lease / PPA Agreement</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>7. Miscellaneous Documents</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>8. Revised FI Calculator Form (NSHP FI-1)</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>9. Signed NSHP-2 Form (Must be mailed to Program Administrator.)*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>10. STD-204 Payee Data Form*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>11. Ten-Year Warranty and Final Cost Form (NSHP-3)*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>12. Utility Energy Efficiency Program Payment Approval Letter</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
</tbody>
</table>
EE/PV Verification Documents

• CEC staff will be verifying the CF-3R and FI-3 directly in the HERS registry that you identify in your NSHP-2.
• There is no need to upload these documents to the web tool, however the web tool requires you to click ‘mail in’ on the FI-3 in order for the payment claim to be ready to submit in the web tool.

<table>
<thead>
<tr>
<th>Guidebook Requirement</th>
<th>Attach</th>
<th>Mail In</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Final Building Permit Signoff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Final System Cost Documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. HERS EE Verification Forms CF-4R / CF-3R and NSHP EE-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. HERS PV Verification Form (NSHP FI-3)*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
<tr>
<td>5. Interconnect Authorization Letter*</td>
<td>Attach</td>
<td>Mail In</td>
</tr>
</tbody>
</table>
EE/PV Verification Documents

• If you indicated on your NSHP-2 that you are using your final building permit to prove energy efficiency attainment, you must upload this document to the web tool.

• Key Items:
  – Building permit address must match
  – Must have a final sign off
Revised FI-1 Calculator Form

- If the specifications of your PV system have changed since your project was originally reserved, you must re-run the FI calculator and upload the FI-1 to the web tool.
Submission

- Site status will be “Incomplete” until all necessary documents are uploaded and information filled out.
Submission

- Once all documents are uploaded, status will change to “Ready to Submit”
- Click “Submit”
Submission

- Status will change to “Submitted”
Payment Claim Review

• CEC staff will begin payment claim review after receiving the physical NSHP-2 in the mail. You will know the payment review has begun when the status changes to ‘received’.
Payment Claim Review

• If CEC staff find any errors in the payment claim during the review process, we will send a corrections email to the primary contact listed on the project and the status will change to ‘More Information’.

• Once you have corrected the errors listed in the corrections email, resubmit the payment claim by clicking the ‘submit’ button.
Payment Claim Review

• Once CEC approves the payment claim review, the site status will change to ‘Approved by CEC’.
Payment Claim Review

• Once the incentive check is issued by the CEC, the site status will change to ‘Finished’.

<table>
<thead>
<tr>
<th>Site ID: NS003USE</th>
<th>Address/Name: 125 Fake St</th>
<th>Status: Finished</th>
</tr>
</thead>
</table>

**Before submitting your Site for approval, please review the following statuses. Complete any items where status is Incomplete.**

- Site Information: Complete
- Attachments: Complete
- Equipment: Complete
CONGRATULATIONS!

You’ve now completed the NSHP process!
Questions?
Contact Us!

Renewables Call Center
Monday through Friday 8am – 5pm
(844) 421-6229 or renewable@energy.ca.gov