

# New Solar Homes Partnership (NSHP) Training Seminar

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Renewable Energy Division

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# Agenda

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1. Welcome & Housekeeping
2. Program Information & Eligibility
3. NSHP Documentation
4. Energy Efficiency
5. PV Calculator
6. Online Application Tool
7. Application Clinic

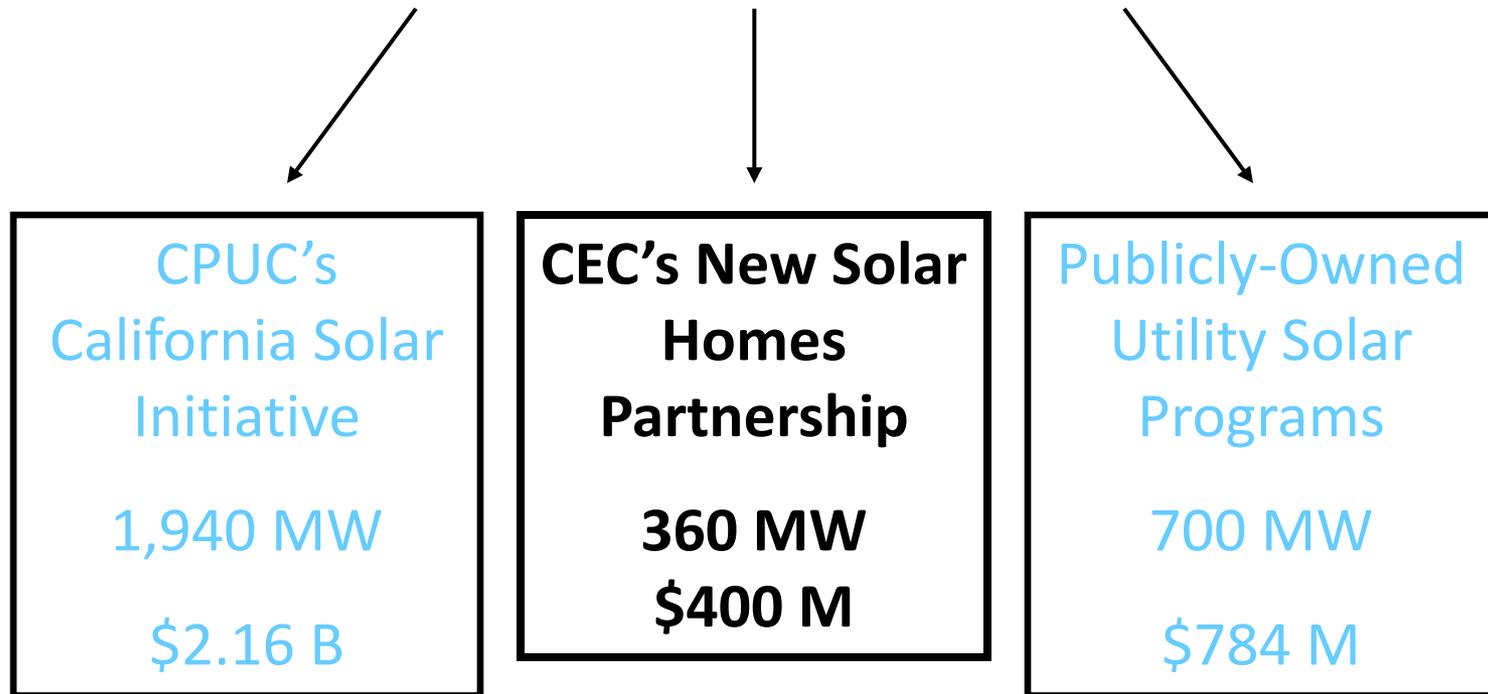
# Purpose

- Provide assistance to all parties participating in the NSHP program
  - Application Process
  - Required Documents
- Any comments or suggestions on improving the NSHP program can be sent to the California Energy Commission's Renewable Energy Office at [renewable@energy.ca.gov](mailto:renewable@energy.ca.gov)

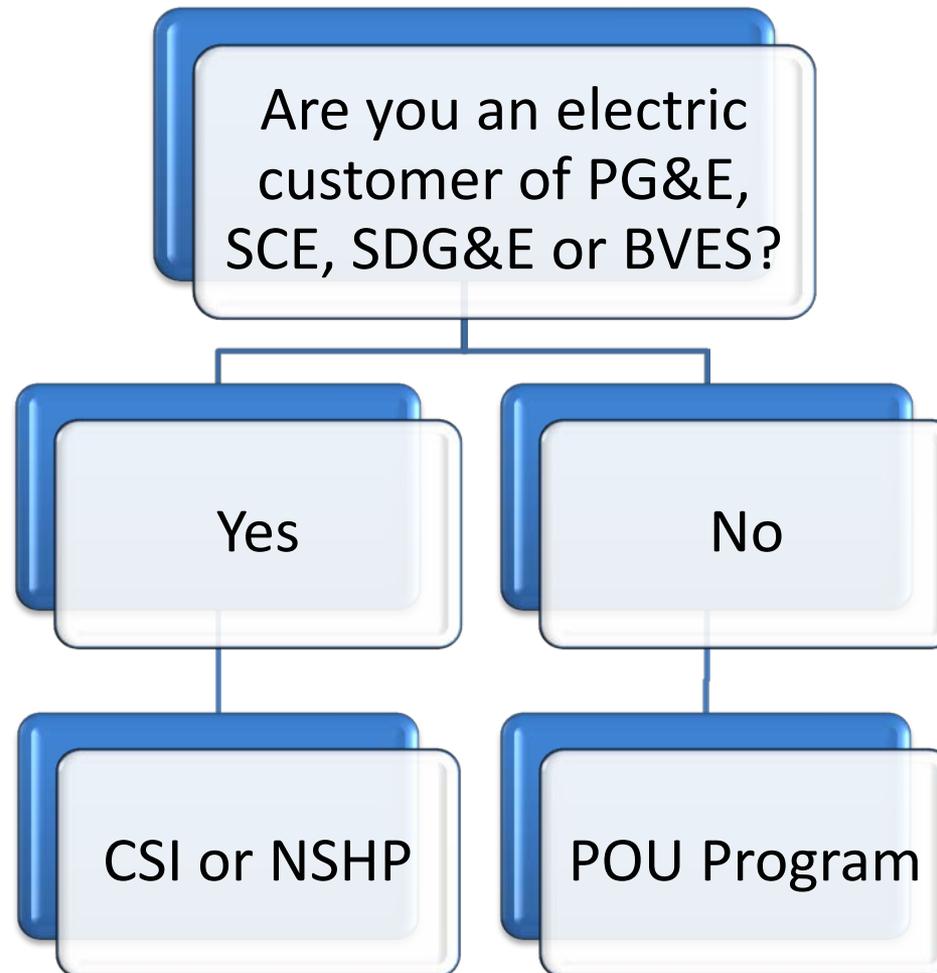
# NSHP Funding

- Last Updated 10/23/2014
  - Available Funding: \$63.9 Million
  - Requested Funding: \$25.0 Million
  - Remaining Funding: \$38.9 Million
- Potential Additional Funding Sources: Modified Reservations and Expired Projects

# California Solar Initiative



# Which Program Do I Apply To?



# CSI or NSHP?

What kind of project will the solar system be installed on?

New Residential Construction Projects

NSHP

Existing Homes, Existing and New Commercial, Industrial, Government, Non-Profit and Agricultural Projects

CSI

# New Solar Homes Partnership Program Goals

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- Establish a self-sufficient solar industry where solar energy systems are a mainstream viable option for homes by 2016.
- Achieve 360 megawatts of installed solar electric capacity in California by the end of the program.
- Place solar energy systems on 50% of new homes by end of program.

# Important Dates

- 8/27/2014

Adoption of NSHP Guidebook, 8<sup>th</sup> Edition

- 9/1/2014

Effective Date of NSHP Guidebook, 8<sup>th</sup> Edition

- 9/1/2014

The California Energy Commission is the sole program administrator for NSHP

# Does the new Guidebook (Eighth Edition) Apply to Your Project?

- What if:
  - A reservation application has been submitted, but has not received Energy Commission approval
    - Written Notice
  - A payment claim has been submitted, but has not received Energy Commission approval
    - Time Extension Process
    - Partial Payment Calculation
    - Interconnection Letter
    - West Facing Incentive
    - PERF-1 Field Verification
    - NSHP-2
    - NSHP-3
    - Leases/PPAs

# Getting Ready to Participate in the New Solar Homes Partnership Program



# Before Applying to NSHP

- **Please Read the NSHP Guidebook and NSHP Web Tool Handout**
- Consider what stage of construction your project is in:
  - Can your project be designed to meet the minimum energy efficiency requirements?
  - Is your project eligible for incentives from your utility's energy efficiency new construction program?
  - Can everything in your project be verified by a HERS rater?

# Eligibility Requirements

- Project located in one of four investor-owned electric service territories (PG&E, SCE, SDG&E, BVES).
- Solar energy system will be at least 1 kW AC or larger and interconnected with the utility grid.
- The electricity from the system will offset the end-use customer's electric load.
- The system will be composed of new certified components from the Energy Commission's Lists of Eligible Equipment and will be covered by a 10-year warranty.

6 MONTHS?

# Eligibility Requirements Continued

- New residential construction
  - A residential building is considered “new” if the entire building structure is subject to current Title 24 Standards.
  - Solar permit shall be applied for prior to the issuance of the certificate of occupancy, but no later than **60** days after.
- Solar energy systems and energy efficiency measures are third-party verified.

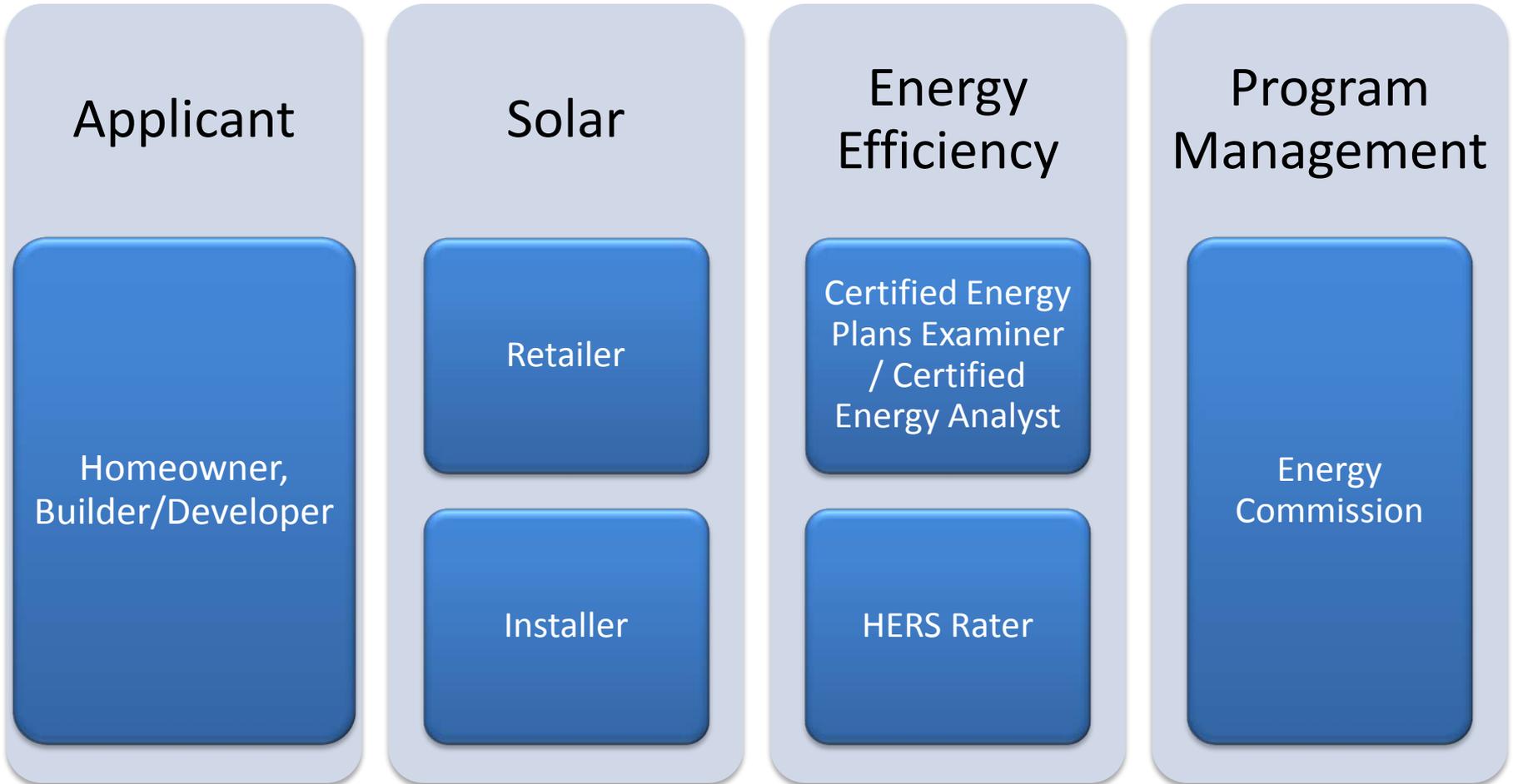
# Energy Efficiency Requirements

- 2013 Building Energy Efficiency Standards
  - **Code-Compliant:** Meets the 2013 Standards before...
- 2008 and 2013 Building Energy Efficiency Standards
  - **Tier 1:** minimum 15 percent beyond the Standards for combined space heating, cooling and water heating
  - **Tier 2:** minimum 30 percent beyond the Standards for combined space heating, cooling and water heating and 30 percent for space cooling
  - Non-Residential: Tier 1=10%, Tier 2=15%

# Retailers and Installers

- Contractors installing solar systems must have a California State A, B, C-10 or C-46 license. Solar systems may also be self-installed.
- Retailers and installers **may** self-register with the Energy Commission via the Go Solar California website,  
<http://www.gosolarcalifornia.ca.gov/database/addcompany.php>

# Involved Parties



FIND A CEPE, CEA, HERS RATER? CODE COMPLIANT PROJECTS?

# Incentive Structure

- One-time, upfront incentive
- Incentives decline as megawatt targets are achieved
- Incentives decline to zero at the end of the program
- <https://www.newsolarhomes.org/RebateLevels.aspx>
- Incentive amount calculated using the CEC-PV Calculator
- Expected Performance Based Incentive (EPBI)
- Incentives limited to the first 7.5 kW AC for a residential unit AND
- Incentive Amount Cap
  - Affordable Housing Residential Unit Project: Limited to 75% of the Total System Cost
  - Market-Rate Housing Project: Limited to 50% of the Total System Cost

# Market-Rate Housing

Code-Compliant Incentive (per watt, reference system)	Tier I Incentive (per watt, reference system)	Tier II Incentive (per watt, reference system)	Reserved Volume (MW-AC)
\$2.25	\$2.50	\$2.60	55.3
\$2.00	\$2.25	\$2.35	N/A
\$1.75	\$2.00	\$2.25	5
\$1.50	\$1.75	\$2.00	10
\$1.25	\$1.50	\$1.75	15
\$1.00	\$1.25	\$1.50/\$1.75	35
<b>\$0.75</b>	<b>\$1.00</b>	<b>\$1.50</b>	<b>50</b>
\$0.50	\$0.75	\$1.25	60
\$0.35	\$0.50	\$1.00	65
\$0.25	\$0.35	\$0.75	72

# Affordable Housing

Code-Compliant Incentive (per watt, reference system)	Residential Dwelling Unit Incentive (per watt, reference system)	Common Area Incentive (per watt, reference system)	Reserved Volume (MW-AC)
\$3.25	\$3.50	\$3.30	3.3
\$2.90	\$3.15	\$2.97	N/A
\$2.55	\$2.90		0.25
\$2.20	\$2.55		0.5
\$1.85	\$2.20		0.75
<b>\$1.50</b>	<b>\$1.85</b>		<b>3.5</b>
\$1.15	\$1.50		5.0
\$0.80	\$1.25		6.0
\$0.55	\$1.00		6.5
\$0.35	\$0.75		7.2

# Incentive Rates for Incentive Level 7\*

**Code-  
Compliant  
Incentive**

\$0.75/Watt

**Tier I  
Incentive**

\$1.00/Watt

**Tier II  
Incentive**

\$1.50/Watt

**Affordable  
Housing  
Incentive\***

\$1.85/Watt :  
Residential Units  
Only

**AFFORDABLE HOUSING: COMMON AREAS, TAX EXEMPT VS. NON-TAX EXEMPT**

# Project Types

## Custom Homes

## Large Developments

Projects/Phases of 6 or  
more homes  
AND

Solar on at least 50% of  
those homes

## Small Developments

Projects/Phases of less than  
6 homes  
AND/OR

Solar on less than 50%  
of homes.

RESERVATION PERIODS?

# Project Types Continued

## Common Areas

Areas in the development that are reserved for the use of the residents.

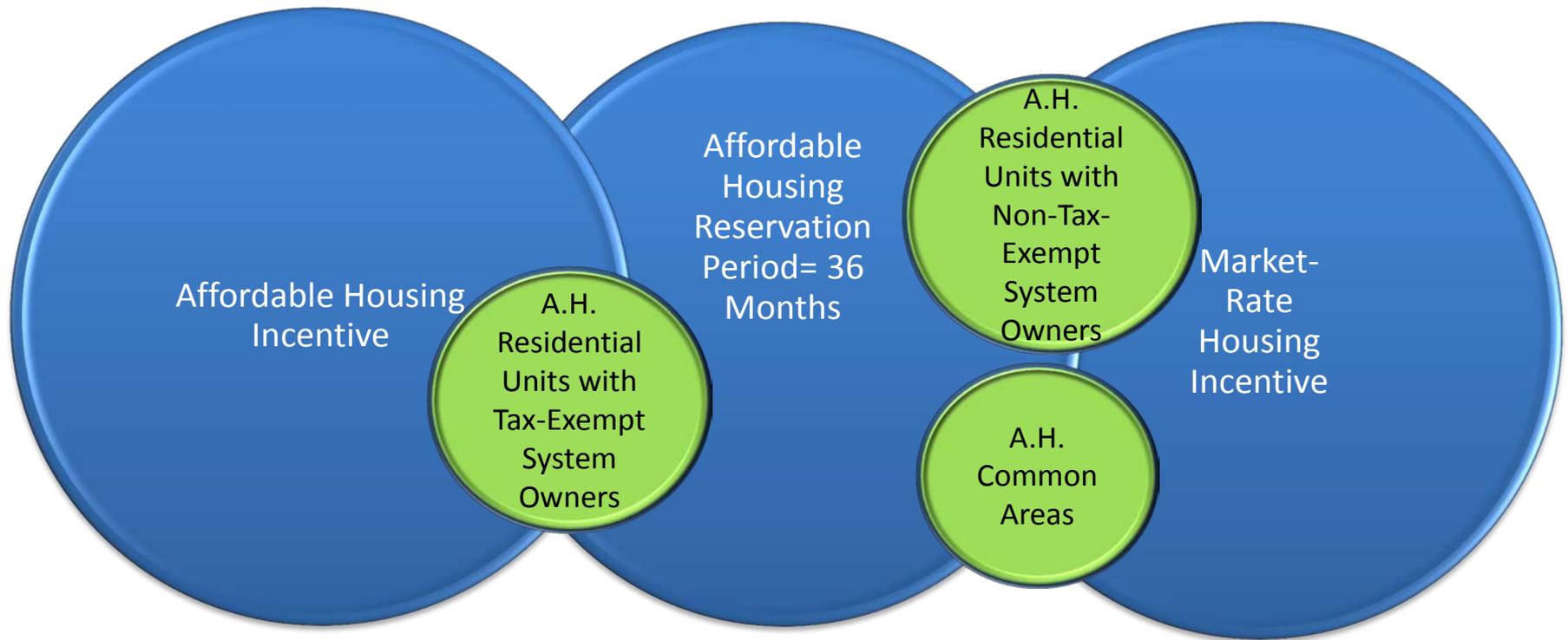
Example: Recreation Center, Pool House, etc.

## 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.

RESERVATION PERIODS?

# Affordable Housing Reservation Period vs. Incentive Level



# The Basic Process



## Reservation

- Applicant submits reservation application package.
- Energy Commission reviews and approves. Incentive is reserved for applicant.



## Installation and Verification

- Applicant installs PV system and energy efficiency measures.
- HERS rater verifies and tests measures installed.
- Building department finalizes solar permit.
- Applicant applies for interconnection.

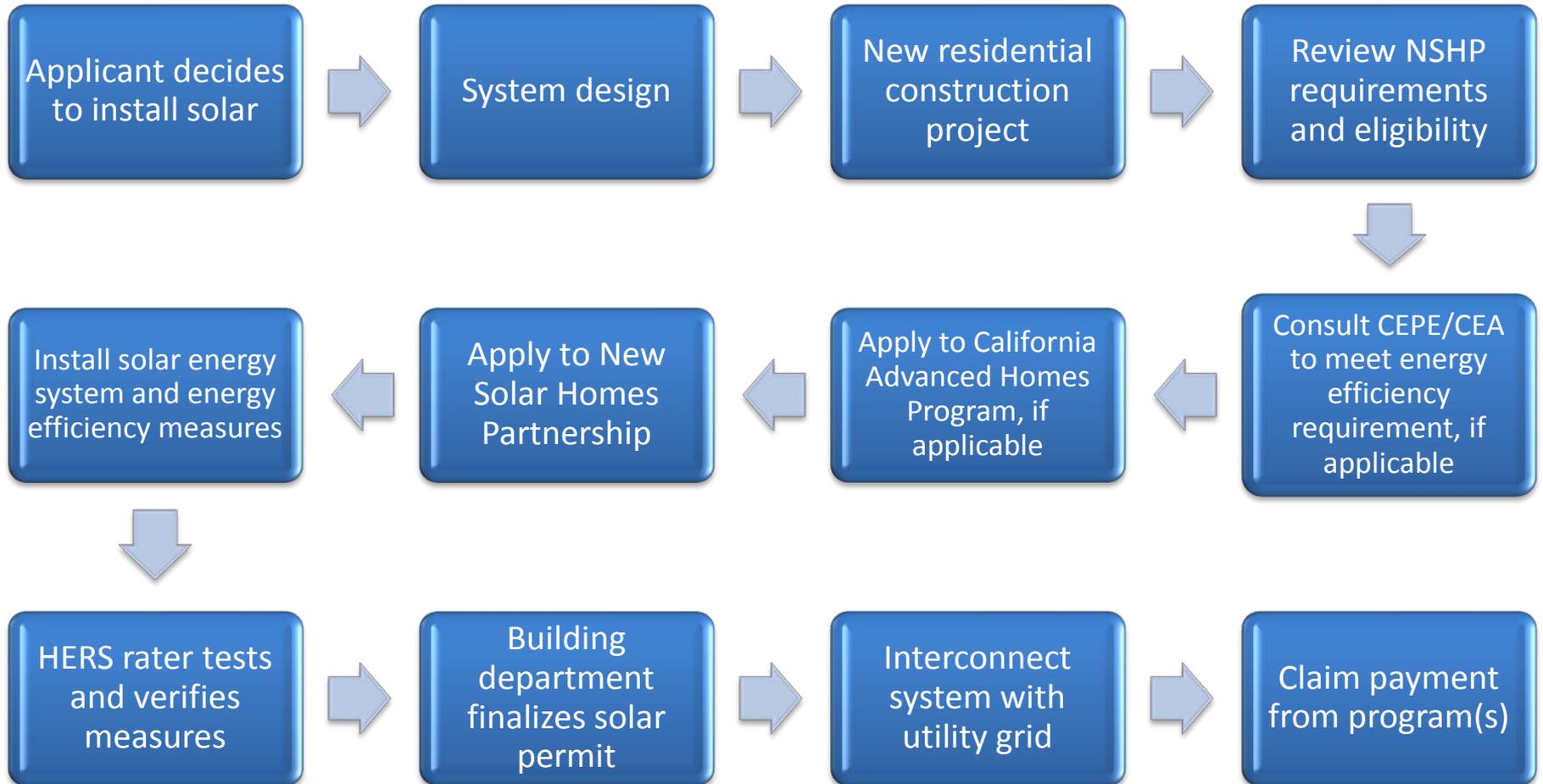


## Payment Claim

- Applicant submits payment claim package to incentive program(s).
- Energy Commission reviews and approves. Incentive is paid.



# The Detailed Process



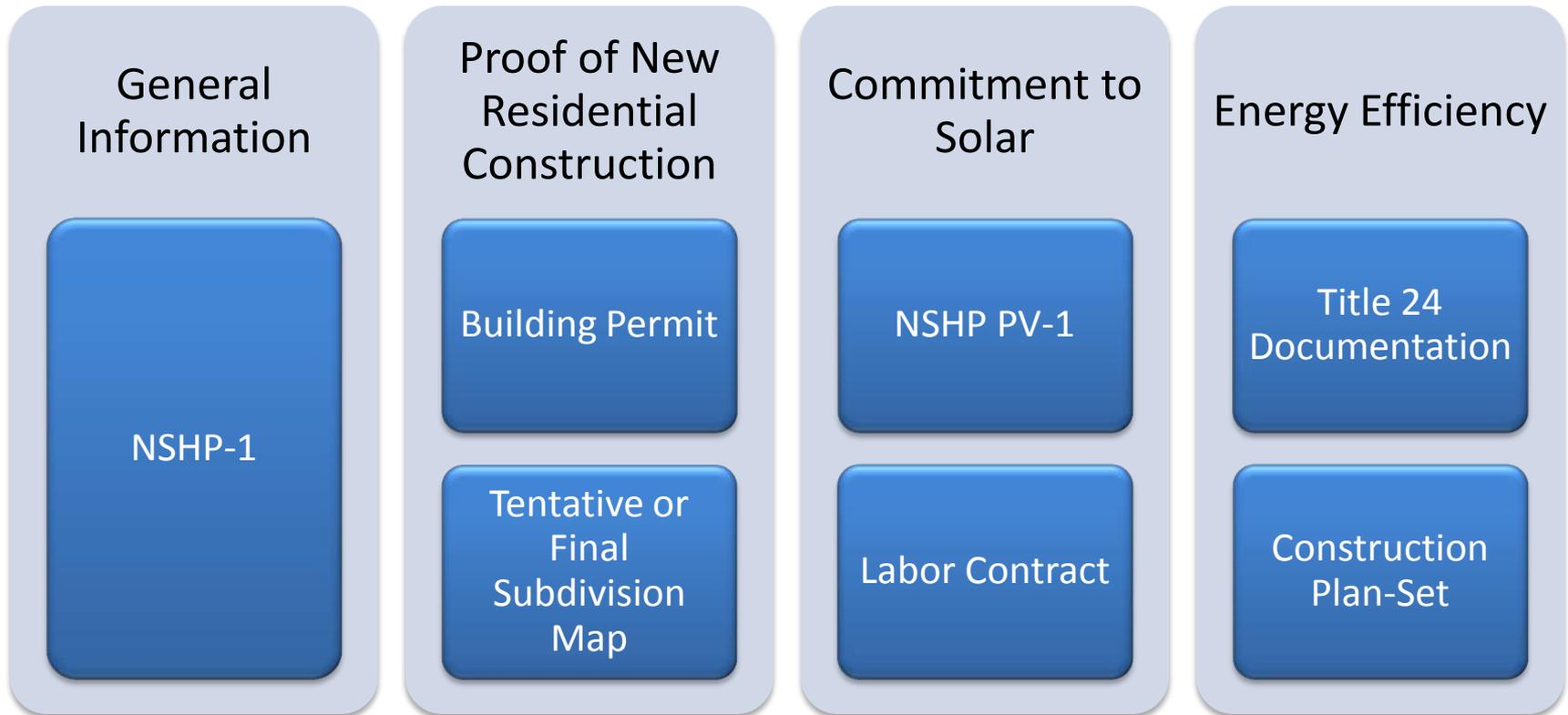
# Complete NSHP Reservation Applications and Payment Claims...

- Meet all NSHP program requirements and administrative expectations.
  - Have consistent names, site addresses, and equipment on all supporting documentation.
  - Have all of the required signatures on the documents.
- Use the newest versions of documents and calculation tools supplied and/or authorized by the California Energy Commission.
- Include all required supporting documentation with the reservation application or payment claim package.

# New Solar Homes Partnership: The Reservation Application



# Reservation Application Document Overview



## Additional Information for Certain Project Types

- Regulatory Agreement (Affordable Housing)
- System Size Justification

# Reservation Application Form (NSHP-1)

## What It Is:

- Provides general information on the project
  - Applicant information
  - Location
  - Housing type
  - Utility
  - HERS rater information
- Designation of an authorized representative
  - Authorized to sign NSHP forms on behalf of the applicant

**Who Provides It:** Applicant

100% COMPLETION?

# New Residential Construction Building Permit OR Subdivision Map

## What It Is:

- Document from the city or county stating that a new home is being constructed on the site where the solar energy system is being installed.
- A document that illustrates where all of the homes participating in the NSHP are located. The document should be recorded with the city or county.

**Who Provides It:** Applicant

IS THIS ALWAYS REQUIRED?

# Certificate of Compliance Form (NSHP PV-1)

## What It Is:

- It documents the system specifications and provides an estimated incentive amount.
- Each NSHP PV-1 comes with two digital files, .her and .emf. The .her file must be submitted in addition to the NSHP PV-1.
- ***No signature required.***

**Who Provides It:** Solar Retailer/Installer

# Installation Contract

## What It Is:

- The installation contract specifies the work the solar installer will be performing on the project.
- Indicates the specific system components to be installed on the project.
- Identifies estimated NSHP incentive amount.
- Self-installs?

**Who Provides It:** Solar Retailer/Installer

# Energy Efficiency Documentation – Title 24 Report (CF-1R/PERF-1)

## What It Is:

- A document that shows the energy efficiency measures being installed on the project. CF-1R is for residential projects. PERF-1 is for non-residential projects. Input file must also be submitted.

**Who Provides It:** This depends on the project's energy efficiency level and the applicable Building Standards.

**Reminder:** A Certified Energy Plans Examiner/ Certified Energy Analyst must be certified for the appropriate residential type and Building Standards that the home is constructed under.

UNDER WHAT CIRCUMSTANCES IS A PLAN CHECK NOT REQUIRED?

# Energy Efficiency Documentation – Construction Plan-Set

## What It Is:

- A compilation of the plans that shows what will be installed on the home.
- Specifically, the NSHP is looking for the set that includes:
  - Architectural, Electrical, Mechanical, and Plumbing
  - A window and door schedule that shows sizes and includes ALL skylights (if not shown on the floor plan)
  - Elevation, wall, roof, floor construction assemblies
  - Floor finish schedule (if CF-1R shows High Mass Design)
  - A site plan with a North arrow

**Who Provides It:** Applicant

IS THIS ALWAYS REQUIRED?

# Regulatory Agreement

## What It Is:

- A document generally between a developer and either the city/county, TCAC or other funding sources that requires the developer to restrict a certain number of units in the project for affordable housing.

## Who Provides It: Applicant

**Reminder:** Affordable Housing Projects Only

# System Size Justification

## What It Is:

- Documentation showing that the solar energy system is sized such that its expected performance is no greater than 100 percent of the building's on-site estimated annual electricity consumption. Acceptable documents are the estimated annual electricity consumption of the residential unit based on a detailed energy use calculation, or a letter detailing expected energy consumption.

**Who Provides It:** Certified Energy Plans Examiner (CEPE), Certified Energy Analyst (CEA), architect, engineer, C-10 licensed electrical contractor.

**When to Provide:** For Common Area systems greater than 7.5kW and if requested by Program Administrator

# Submitting the Reservation Application

## Step 1: READ THE NSHP GUIDEBOOK!

Make sure that your project is eligible

Make sure you're familiar with the program requirements

## Step 2: Gather the required project documentation.

Use the reservation checklist

Verify that all documents are complete with consistent information

## Step 3: Submit the reservation application.

Submittal via the NSHP Web Tool is encouraged

Keep it simple

## Step 4: Energy Commission Review

Tracking the Status of the Reservation Application

Plan Check (if applicable)

Qualifying for a Correction Period

## Step 5: Energy Commission Approval

# Other Reservation Application Related Details...

If you have a project with more than one home, then...

The reserved funding is tied to the project, not to the sites.

Think of it like a bank account:  
If a site requests less money...  
If a site requests more money...  
What if you run out of money...

You can add more sites to an existing project, if...

You have funding remaining for your project  
AND those additional sites are from the same subdivision as the original project  
AND your project has not expired  
AND you have not been paid an incentive for all sites within that original project.

# Other Reservation Application Related Details...

If you have a project with more than one structure...

All structures on the utility meter being served by the solar system must be plan checked and the Title 24 documentation submitted

Will your application receive a 10 business days corrections period?

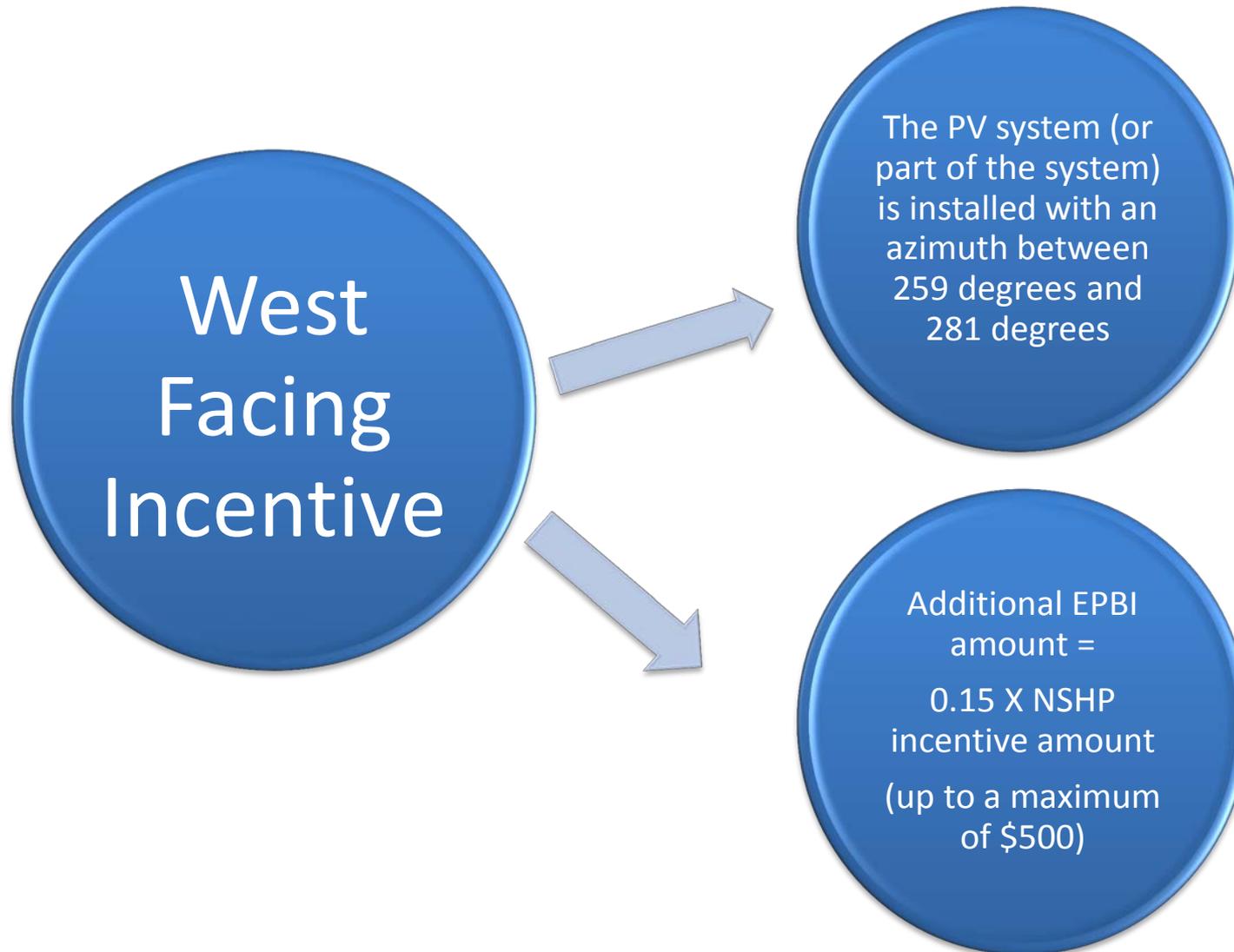
Complete Application =  
**YES**

Incomplete Application =  
**NO**

6 month rule

Equipment installed more than six months prior to submitting an initial reservation application is **not eligible**

# Other Reservation Application Related Details...



# Other Reservation Application Related Details...

## Tips for Expediting Your Reservation Review

Use the Plan Check Checklist provided in your handout packet and online (see next slide for example)

Highlight useful information in your submitted documentation

Use the reservation application checklist to make sure you have submitted everything

Contact the Renewable Call Center for additional help

# Tips for a Quick Plan Check

- CEC access to project in HERS Provider Registry
- CF-1R: Include the ZIP file for 2008 projects. For 2013 projects you will need to provide a .XML file. Include these files with your Reservation application package.
- NSHP PV-1: Include the .her file with your Reservation application package.
- Fill out the table below and include it with your Reservation application package as part of your Title 24 documentation. You can find this table on the Go Solar California website at: <http://www.gosolarcalifornia.org/documents/nshp.php>. The name of the document is: *Tips for a Quick NSHP Plan Check*.

Location of Plan Check Required Information in Construction Plans (Optional, but providing this information will help speed up the plan check process)	
Information on Construction Plans	Location in Plans (Sheet/Page or Spec. Sheet)
• Ceiling, Floor and Roof/Attic Insulation values (R-values)	
• If applicable: Cool Roof values (thermal emittance and aged solar reflectance)	
• Fenestration (window and door) efficiency values (U-factors, Solar Heat Gain Coefficients [SHGC])	
• Window and door areas/dimensions	
• HVAC efficiency values/specifications (SEER/EER, AFUE, COP, etc)	
• Water heating efficiency values/specifications (Energy Factor, Thermal Efficiency, Standby Loss)	
• If applicable: Solar Water Heating Solar Savings Fraction (provide copy of solar fraction calculator as well)	

# More Reservation Application Related Details...

Reservation Funding Decrease Schedule	
Interval	Funding Decrease
12 months	Requested incentive <15% original amount, funding may be reduced up to 85% of original amount
18 months	Requested incentive <35% original amount, funding may be reduced up to 65% of original amount
24 months	Requested incentive <55% original amount, funding may be reduced up to 45% of original amount
30 months	Requested incentive <75% original amount, funding may be reduced up to 25% of original amount

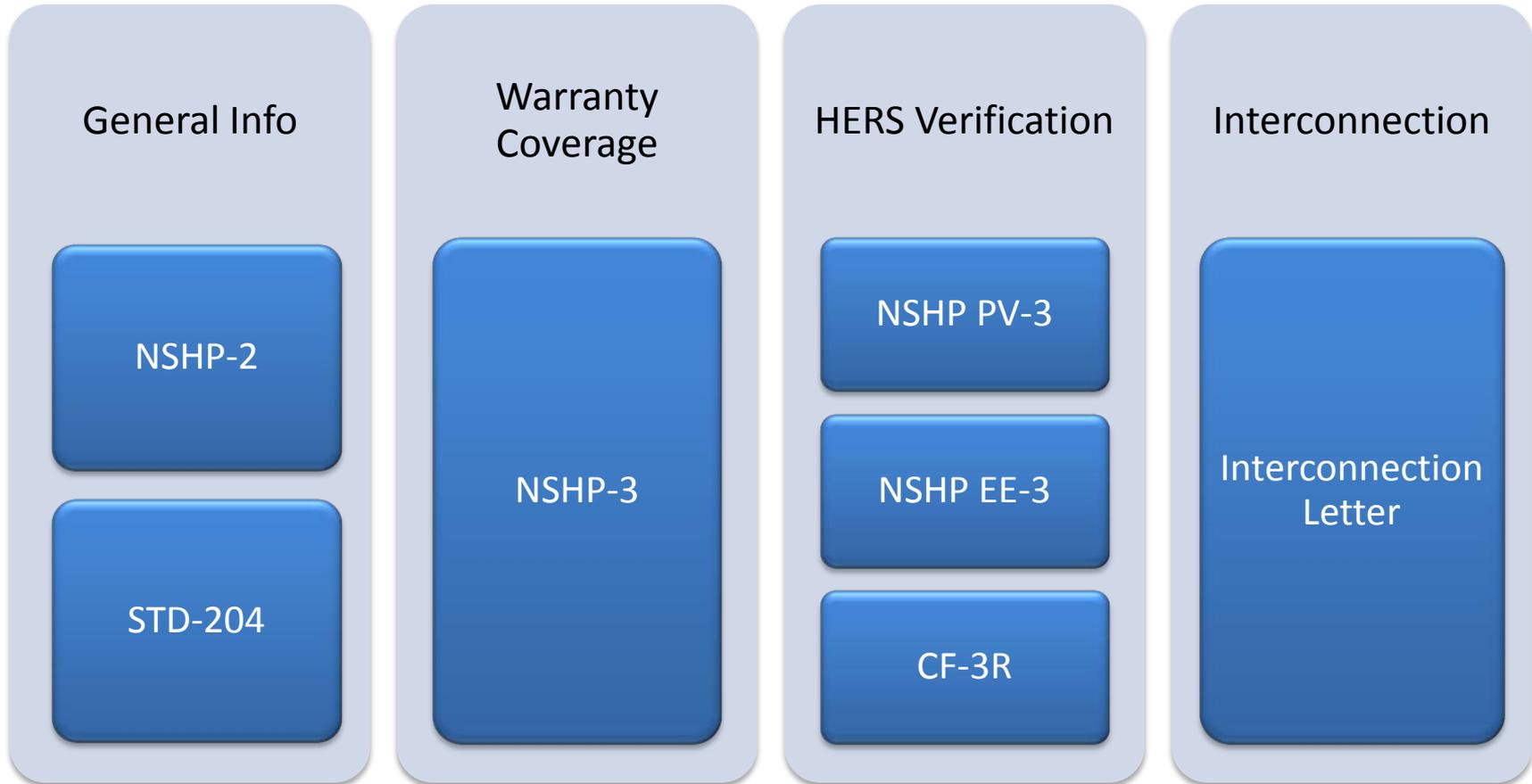
- Large Developments
- Evaluation Criteria
  - Sum of incentive amounts for Submitted Sites vs. Reservation Amount

WHAT COUNTS AS A SUBMITTED SITE?

# New Solar Homes Partnership: The Payment Claim



# Payment Claim Document Overview



## Additional Information for Certain Projects

- Lease Agreements or Power Purchase Agreements
- Building Permit Sign-Off

# Payment Claim Form (NSHP-2)

## What It Is:

- A document that confirms the incentive amount for the site.
- Requests data on various components of the NSHP process.
- Allows the payment to be reassigned.
- *Original, wet signatures required on form.*
- Mail document to CEC.

**Who Provides It:** Applicant

100% COMPLETION?

# Payee Data Record (STD-204)

## What It Is:

- A standardized State document that must be completed by any entity that will be receiving funds from the State.

**Who Provides It:** Applicant or Payee

# Ten-Year Warranty Form (NSHP-3)

## What It Is:

- This document indicates what is being covered by the ten-year warranty.
- Manufacturer's warranties for modules and inverters also required if only system installation is covered by ten-year warranty.

**Who Provides It:** Solar Retailer/Installer

# Lease Agreement/PPA

## What It Is:

- Agreements for systems that are not purchased.
- An agreement made with end-use customer (i.e. builder or homebuyer).
- Requirements:
  - Term  $\geq$  10 Years
  - Identify NSHP incentive amount and benefit
  - Options at end of lease term
  - Repayment
  - Total system cost may not include: financing fees, origination fees, processing fees, or administration fees

## Who Provides It: Solar Retailer/Installer

# HERS Verification Forms (CF-3R, NSHP EE-3, NSHP PV-3)

## What It Is:

- Forms verifying that the newly constructed home contains all of the energy efficiency features listed during the plan-check.
- Forms verifying that the solar energy system was installed according to the design and shading criteria entered into the PV Calculator.
- Final building permit sign-off or occupancy permit can be turned in for projects that submitted a PERF-1.

**Who Provides It:** Verified in the HERS Registry by the Energy Commission in most cases.

# Interconnection Letter

## What It Is:

- A letter from the utility providing authorization for the solar energy system to be interconnected to the utility grid.
- VNEM allocations should match the NSHP-1.

**Who Provides It:** Applicant

# Final Building Permit Signoff

## What It Is:

- Documentation provided by the building department that verifies the **building** meets the required California Building Code.
  - Inspection Record with signatures, Certificate of Occupancy

**Who Provides It:** Applicant

REQUIRED FOR ALL PROJECTS?

# Final System Cost Documentation

## What It Is:

- Documentation that clearly identifies the final amount paid or legally incurred by the **system owner** for the purchase and installation of the solar energy system.
  - **NO** financing fees, origination fees, processing fees, administrative fees, etc.

**Who Provides It:** Solar Retailer/Installer

# Submitting the Payment Claim

## Step 1: READ THE NSHP GUIDEBOOK!

Make sure you're familiar with the program requirements

Plan ahead to make sure you can meet the program deadlines

## Step 2: Gather the required project documentation.

Use the payment claim checklist

Verify that all documents are complete with consistent information

## Step 3: Submit the payment claim.

Submittal via the NSHP Web Tool is encouraged

The NSHP-2 with original signatures must be mailed in

## Step 4: Energy Commission Review

Tracking the Status of the Payment Claim

Qualifying for a Correction Period

## Step 5: Energy Commission Approval

# Other Payment Claim Related Details...

## 60 day rule

The application for the solar permit shall be submitted to the building dept prior to occupancy, but no later than 60 days after the issuance of occupancy permit

If you turn in your NSHP-2 on or before the reservation expiration date...

You have 90 calendar days to submit the remaining documents for the payment claim package.

# Other Payment Claim Related Details...

**Partial Payment**

**=**

**0.75 X NSHP INCENTIVE**

## Requirements...

Your project is participating in your utility's new construction program

AND on or before the reservation expiration date, you've submitted all documents in the payment claim package with the exception of the CF-3R and NSHP EE-3

You will have up to 90 calendar days after the reservation expiration date to submit the CF-3R and NSHP EE-3, and request the balance of your incentive

# Other Payment Claim Related Details...

## Lease 10% Rule

The NSHP incentive amount requested when claiming payment may exceed the NSHP funding amount identified in the lease by up to 10%, without requiring a revised lease agreement or addendum

If the NSHP incentive amount requested exceeds the amount identified in the lease by more than 10%, a revised lease agreement or addendum must be provided in order to claim the higher incentive amount.

If the NSHP incentive amount identified in the lease is more than the requested NSHP incentive amount, the total requested incentive amount will be paid

# Other Payment Claim Related Details...

## Petition the Executive Director

- Incorrect application of NSHP Guidebook rules to deny, reduce, cancel, or revoke a reservation
- Guidebook 8: Chapter VI, Section K (pg 52)

## Time Extensions

- Executive Director determines there were circumstances beyond the applicant's control that caused a delay in:
  - Submitting NSHP-2 on or before expiration date
  - Submitting documentation required during 90-calendar-day period after reservation expiration
- Guidebook 8: Chapter VI, Section O (pg 53)

# NSHP Resources

## Go Solar California Website

- <http://www.gosolarcalifornia.ca.gov/index.php>

## NSHP Online Application Tool

- <https://www.newsolarhomes.org>

## NSHP Forms and Documents

- <http://www.gosolarcalifornia.ca.gov/documents/nshp.php>
- <http://www.energy.ca.gov/title24/>

# NSHP Training Seminars

All NSHP Training Seminar materials are located at:  
<http://www.gosolarcalifornia.ca.gov/nshp/training/>

Future NSHP Training Seminars:

- 11/19/14 – At CEC – 9:30 am to 12:30 pm
- 12/17/14 – At CEC – 9:30 am to 12:30 pm

# Contact Information

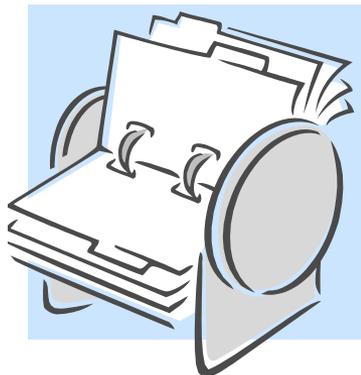
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California Energy Commission

Renewables Call Center

[renewable@energy.ca.gov](mailto:renewable@energy.ca.gov)

(844) 217-4925 or (916) 653-0237



# Questions

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