



California Advanced Homes Program

EPIC WISE Forum

July 14, 2016

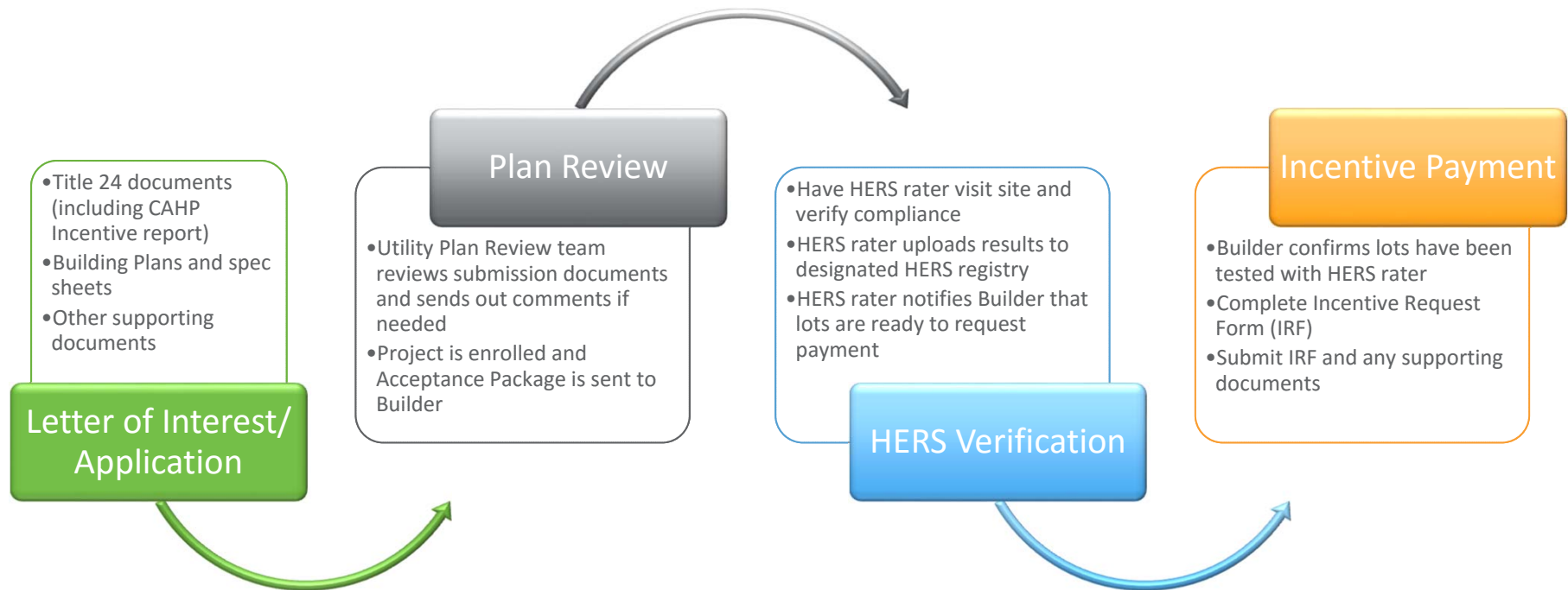
Presented by: Kim Knabel

What is the California Advanced Homes Program?

- Residential new construction program incentivizing sustainable design and construction
- Utility based statewide program
- Works with builders to exceed compliance with the California Code of Regulations, Title 24, Part 6
- Helping the building industry design and develop more environmentally-friendly communities while supporting the State of California's efforts for new homes to reach Zero Net Energy (ZNE) by 2020

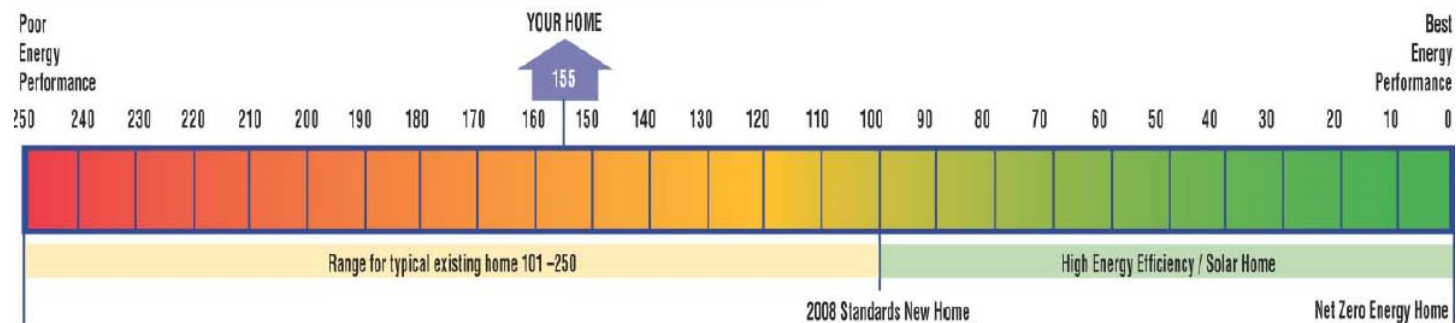


2014-15 CAHP Participation Process



CAHP Score – Single-family and Multi-family Low-rise

California Home Energy Rating Certificate



CAHP Score as a program metric

- Influenced by building envelope thermal efficiency
- Includes all energy end-uses (lighting, plug loads, appliances)
- Can be modeled using existing T24 compliance software
- Equitable across climate zones
- Distributed generation (PV, fuel cell, etc.) does not influence CAHP Score

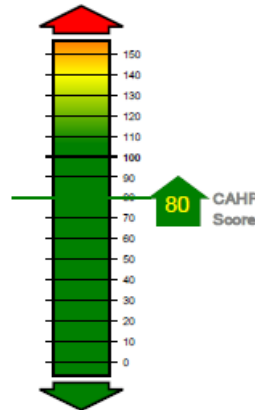
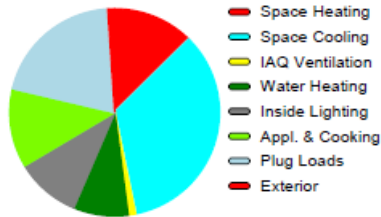


CAHP Incentive Report (CIR)

Home Incentive: \$ 700

CAHP Incentive Report

Project Size and Location		Orientation and Type	
Conditioned Floor Area	2202 sq. ft.	Project Type	Single Family
Climate Zone	CZ14 (Palmdale)	Front Orientation	North



CAHP Score - 80 = \$700

Kicker and Incentive Summary	
CAHP Score Initial	80
DOE Zero Energy Ready Home (3 possible)	- 0
Future Code Preparation (5 possible)	- 0
High Efficacy Lighting Credit (3 possible)	- 0
Low Energy Use Home (5 possible)	- 0
Ultra Low Use Home (5 possible)	- 0
CAHP Score Final	80
Total Project kTDV Energy	232,311
Incentive Amount	\$ 0,700

Project Savings Margins	
Project Savings (kW)	0.0
Project Savings (kWh/yr)	47
Project Savings (therms)	128

Energy Use Summary				
End Use	Savings (kWh/yr)	Savings (therms)	CAHP Std (kTDV/ft2)	Proposed (kTDV/ft2)
Space Heating	43.00	75.50	20.05	13.18
Space Cooling	4.00	0.00	52.26	36.19
IAQ Ventilation	0.00	0.00	1.21	1.21
Other HVAC	0.00	0.00	0.00	0.00
Water Heating	0.00	52.90	12.86	8.95
Inside Lighting	0.00	0.00	10.52	10.52
Appl. & Cooking	0.00	0.00	12.99	12.99
Plug Loads	0.00	0.00	21.35	21.35
Exterior	0.00	0.00	1.11	1.11
PV Credit				0.00
Compliance Total			86.38	59.53
TOTAL	47.00	128.50	132.35	105.50

Name of Model File: _____ Plan 234.2202
 Date and Time of Analysis: _____ 10:59, Fri, Mar 27, 2015

- Certified Energy Analyst runs Title 24 compliance energy model simulations
 - CBECC-Res
 - Energy Pro



CAHP SF & Multifamily Low-Rise Incentive Structures

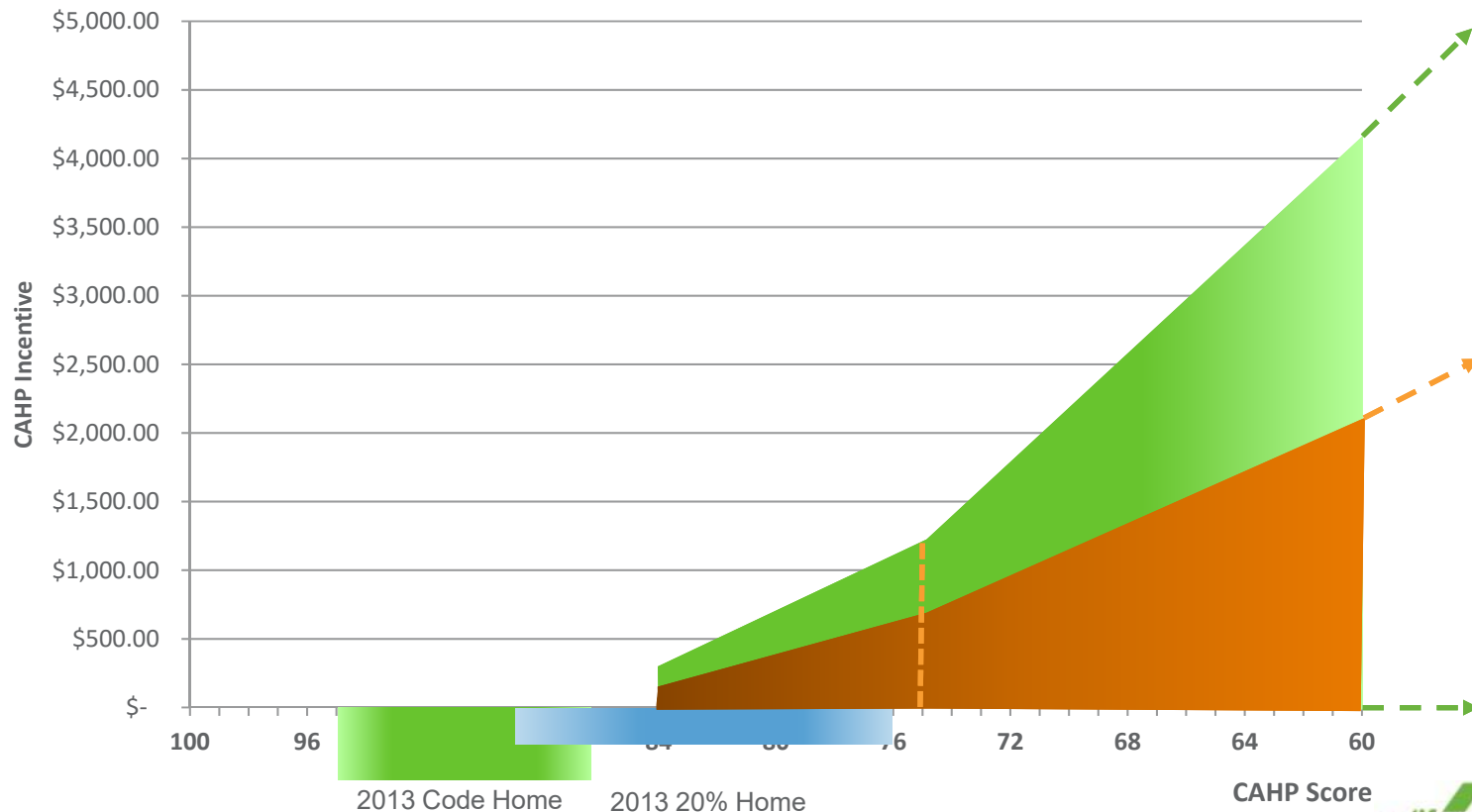
CAHP-SF

- \$300 for program entry CAHP Score of 84
- \$100 for each point up to 75
- \$200 for each point thereafter

CAHP-MFLR (half of CAHP SF)

- \$150 for program entry CAHP Score of 84
- \$50 for each point up to 75
- \$100 for each point thereafter

2014 CAHP Incentive Structure



CAHP Incentive Structure

Final CAHP Score	=	SF Incentive	MFLR Incentive
84	=	\$300	\$150
83	=	\$400	\$200
82	=	\$500	\$250
81	=	\$600	\$300
80	=	\$700	\$350
79	=	\$800	\$400
78	=	\$900	\$450
77	=	\$1,000	\$500
76	=	\$1,100	\$550
75	=	\$1,200	\$600
74	=	\$1,400	\$700
73	=	\$1,600	\$800
72	=	\$1,800	\$900
71	=	\$2,000	\$1,000
70	=	\$2,200	\$1,100
69	=	\$2,400	\$1,200
68	=	\$2,600	\$1,300
67	=	\$2,800	\$1,400

Final CAHP Score	=	SF Incentive	MFLR Incentive
66	=	\$3,000	\$1,500
65	=	\$3,200	\$1,600
64	=	\$3,400	\$1,700
63	=	\$3,600	\$1,800
62	=	\$3,800	\$1,900
61	=	\$4,000	\$2,000
60	=	\$4,200	\$2,100
59	=	\$4,400	\$2,200
58	=	\$4,600	\$2,300
57	=	\$4,800	\$2,400
56	=	\$5,000	\$2,500
55	=	\$5,200	\$2,600
54	=	\$5,400	\$2,700
53	=	\$5,600	\$2,800
52	=	\$5,800	\$2,900
51	=	\$6,000	\$3,000
50*	=	\$6,200	\$3,100

*If CAHP Score is below 50 please add the following dollar amount per point reduction:
SF \$200/MFLR \$100

MFHR Incentive	=	
MFHR-1	=	\$150
MFHR-2	=	\$400

CAHP Bonus Points

CAHP Points reduce your **CAHP Score** and increase your incentive. They were developed and will be awarded for energy efficiency measures not included in current modeling software. **CAHP Points** are included in the Title 24 compliance software and are shown on the **CAHP Incentive Report**.

5 CAHP Points – Future Code Preparation measures – [SF & MFLR Only]

- High R-value walls R-21 + 4 and 2x6 (0.051 U-value or better)
- Heating & cooling distribution efficiency - ducts & air-handler in conditioned space (DCS)/Ductless (see CAHP Rep for other options)
- High-performance water heating - tankless gas or condensing gas storage water heater (see CAHP Rep for other options)
- Quality Insulation Installation (QII)
- ACH3 at 50Pa (IECC minimum)

3 CAHP Points – DOE Zero Energy Ready Home – [SF & MFLR Only]

3 CAHP Points – High Efficacy Lighting Credit

5 CAHP Points – Low Energy Use bonus (100,000 kTDV/year) – [SF Only]

- Production Market attainable absolute energy goal

5 CAHP Points – Ultra Low Energy Use bonus (60,000 kTDV/year) – [SF Only]

- Correlated to the approx. energy output of a 3.5 kW PV panel

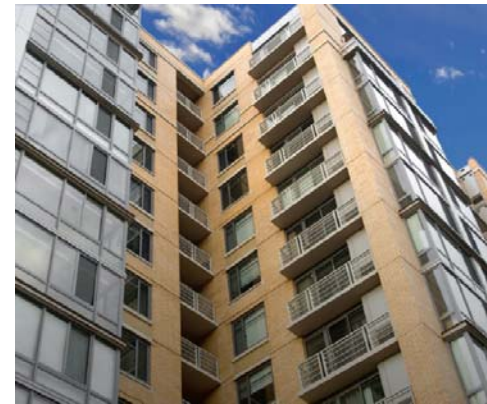
Additional Bonus Kickers:

Maintain:

- ENERGY STAR New Homes Program – Marketing Support Bonus
- Thermostatic Shower Restriction Valve

CAHP for Multifamily High-Rise

- For **multi-family high-rise** (MFHR), the minimum baseline qualification is **15% above 2013 Title 24** building code
- **\$150 per unit** flat-rate for buildings achieving **15% to 29.9%** above 2013 Title 24 building code
- **\$400 per unit** flat-rate for buildings achieving **30% or better** above 2013 Title 24 building code
- For MFHR projects the **maximum incentive per project** is **\$250,000** (includes incentives and any bonus kickers).
- The custom incentive for each building is calculated by the Title 24 energy modeling software on the PERF-1 form. Incentives are specific to the orientation of each building and number of units for each multifamily building.



CAHP: LADWP-SoCalGas Modifications

Multi-family High-rise (MFHR) CAHP Qualification

Reduced to 10% Above Title 24

LADWP-SoCalGas Joint Service Territory only

(effective April 1, 2016)



MFHR projects now qualify for CAHP when achieving 10% above 2013 Title 24 building code and will earn incentives of \$150 per unit at this entry level. Projects achieving 30% or more above Title 24 will continue to qualify for \$400 per unit.

CAHP: LADWP-SoCalGas Modifications

Relax 100% Project Compliance Rule

LADWP-SoCalGas Joint Service Territory only
(effective April 1, 2016)



- CAHP LADWP/SoCalGas will now accept partial single-family and multi-family low-rise project enrollments.
- Previous rules required that all plans, in all orientations meet minimum CAHP qualification threshold or the entire project would be rejected.
- With this program enhancement, any plans in a project that are 100% compliant in all orientations can be enrolled; while plans that are NOT compliant in any direction will not be included for enrollment in the project. CAHP participation and savings will be increased while maintaining a positive efficiency influence in the industry.

Questions?

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