

October 10, 2014 – CABEC Conference  
IOU incentive programs overview

# California Advanced Homes Program

Residential New Construction



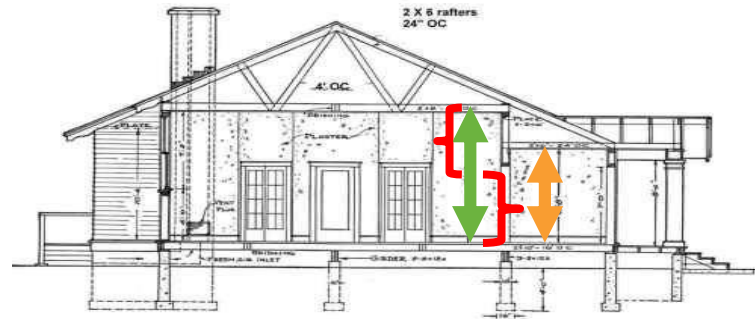
CALIFORNIA  
MULTI-FAMILY  
NEW HOMES



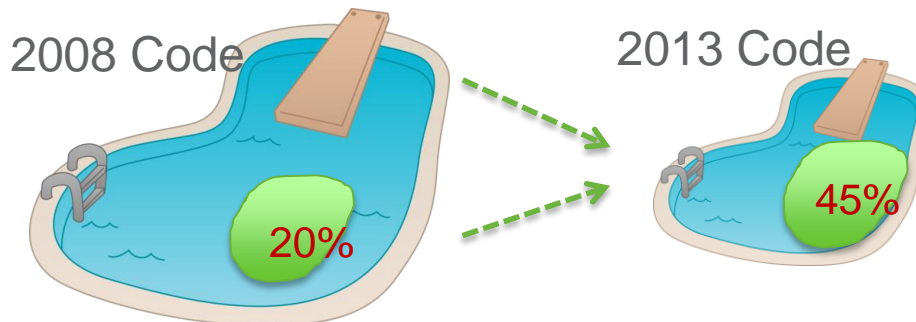
# Determining a new energy efficiency metric

***“Percent better than code” is a flawed, outdated metric.***

- It does not align conceptually with ZNE – the goal is to reduce use towards zero. What percent above code is ZNE?

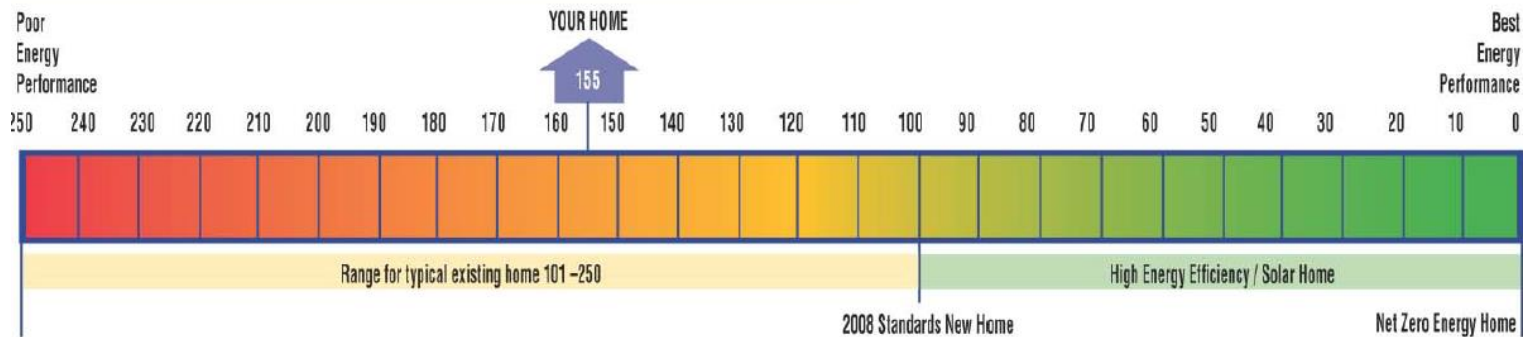


- It is not whole building – includes only 25% - 70% of a home’s energy use
- The baseline is getting too small as code improves – small energy savings can yield perverse ‘% above code’ results



# What is the CAHP Score?

## California Home Energy Rating Certificate



- “Miles-per-gallon” style rating on a home’s energy use
- Derived from the CA HERS Design Rating
- **Includes all energy end uses within home’s envelope:**
  - Heating, cooling, hot water, fans
  - Lighting, appliances, plug loads
- 2014 CAHP entry threshold = 84 (or lower)
- Calculated within Title 24 energy modeling software

# Proposed 2014 CAHP Incentive Structures

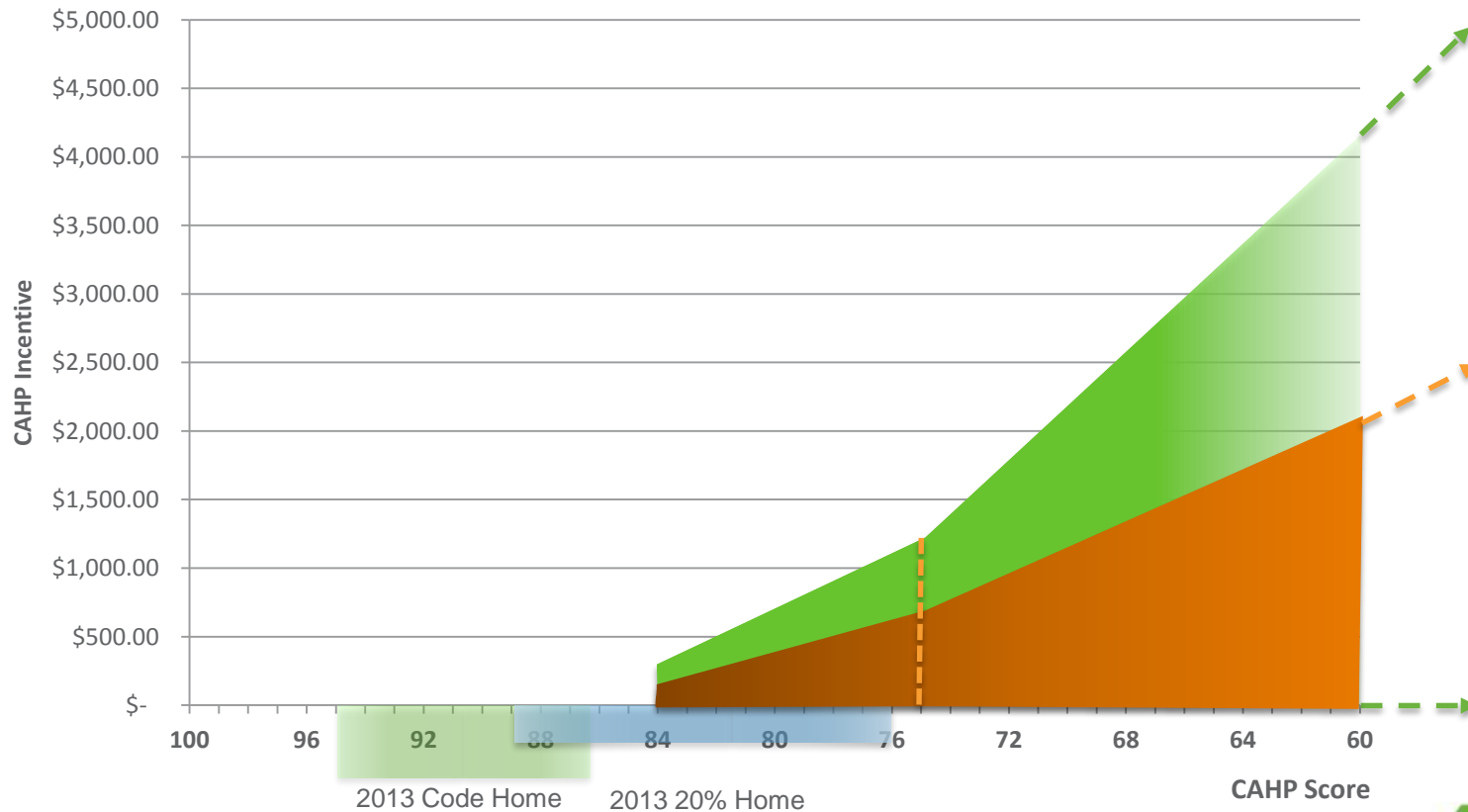
## CAHP: Single Family

- \$300 for program entry CAHP Score of 84
- \$100 for each point up to 75
- \$200 for each point thereafter
- ~\$1,000 anticipated program average

## CAHP: Multi-family Low Rise

- \$150 for program entry CAHP Score of 84
- \$50 for each point up to 75
- \$100 for each point thereafter
- ~\$500 anticipated program average

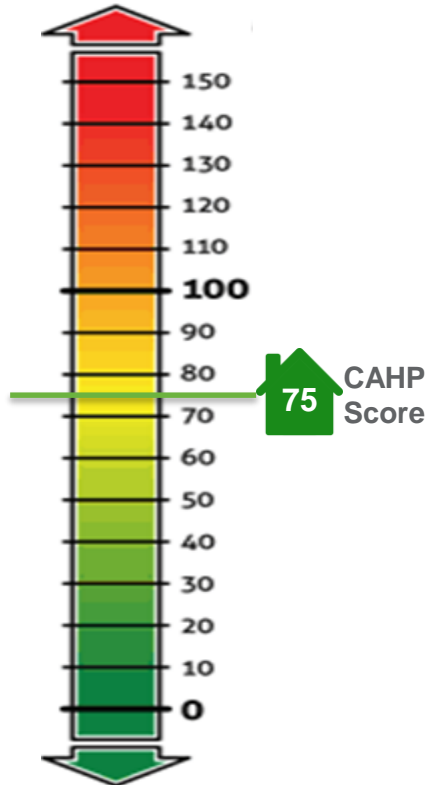
### 2014 CAHP Incentive Structure



## CAHP: Multi-family High Rise:

- \$150 per unit for 15% above code
- \$400 per unit for 30% above code

# How do I generate my CAHP Score?



- Have your energy consultant run your Title 24 compliance energy model simulations as normal
  - CBECC-Res
  - Energy Pro 6
- Run the same model to produce the **CAHP Incentive Report** (*refer to mock up on next slide*) which shows your CAHP Score, incentive, and energy use data of the home
  - *This functionality should become available soon (October 22<sup>nd</sup>). In the meantime please see the [CAHP Score and Incentive Estimate Tool](#) on the [PGE CAHP website](#) to generate your project's CAHP Score.*

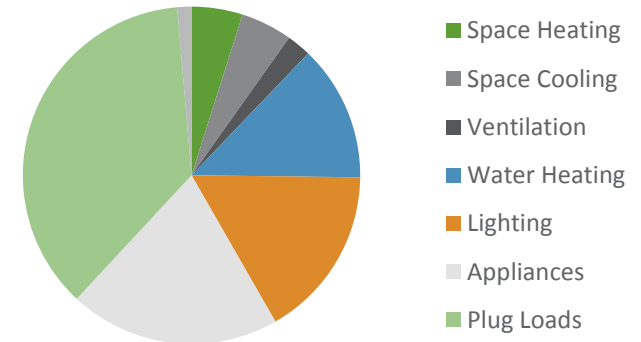
# Sample 2014 CAHP Incentive Report

Use CBECC-res or EnergyPro to generate program data

## 2014 CAHP Incentive Worksheet

Plan 4 1,422 sq.ft. Climate Zone 8 Fullerton Date: 7/30/2014 North – 98,175 kTDV

Energy Use (kTDV/ft2-yr)			
	Standard	Proposed	Margin
Heating	8.22	3.38	4.84
Cooling	11.78	3.4	8.38
Ventilation	1.61	1.61	0
Water Heating	18.78	9	9.78
Lighting	11.41	11.41	0
Appliances	13.95	13.95	0
Plug Loads	25.35	25.35	0
Exterior	0.94	0.94	0
<b>Total</b>	<b>92.04</b>	<b>69.04</b>	<b>23</b>

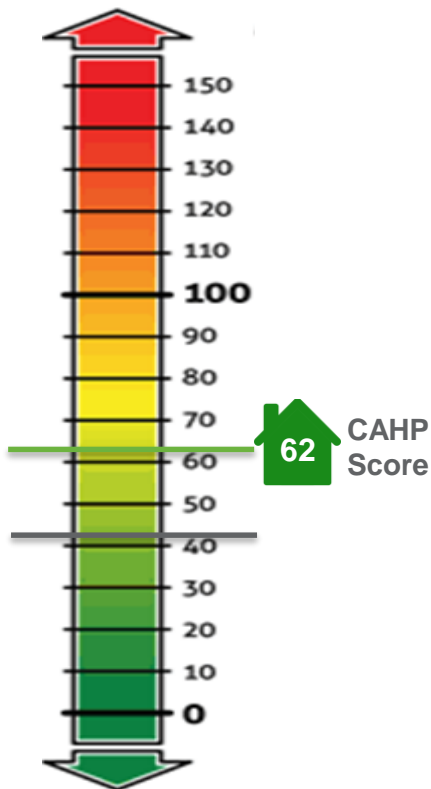


CAHP Points Awarded:  
Low-Energy Use Bonus- 5 points

- CAHP Score
- Low-Energy Use Bonus
- Ultra Low-Energy Bonus

Program Savings			
	Standard	Proposed	Margin
kW	4.3	3.2	1.1
kWh	3,698	3,503	195
Therms	268	148	120
Compliance %	92.04	57%	23

**CAHP Score; 62 = \$3,800**



# CAHP Points – A new way to include incentive bonuses

**CAHP Points** reduce your **CAHP Score** and increase your incentive. The program developed and awards CAHP points for energy efficiency measures not included in current modeling software. **CAHP Points** will be included in the Title 24 compliance software and shown on the **CAHP Incentive Report**.

## **5 CAHP Points – Future Code Preparation Measures**

- High R-value Walls R-21 + 4 and 2x6 (0.051 U-value or better)
- Heating and Cooling Distribution Efficiency
  - High Performance Attics, Ducts in conditioned space (DCS), Ductless, or see your utility for other options
- High Performance Water Heating
  - Tankless gas or Condensing gas storage water heater, or see your utility for other options
- Quality Insulation Installation (QII)
- ACH3 @ 50Pa (IECC minimum)

## **3 CAHP Points – DOE Zero Energy Ready Home** (formally known as DOE Challenge Home)

## **5 CAHP Points – Low Energy Use bonus (100,000 kTDV/year)**

- Production Market attainable absolute energy goal

## **5 CAHP Points – Ultra Low Energy Use bonus (60,000 kTDV/year)**

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

*Additional CAHP Points under development including credit for home energy management systems, 100% high efficacy lighting, ENERGY STAR Appliances Package standard, and other new technologies*



# 2014 CAHP Participant Examples

Building Location	San Jose (CZ 4)	Riverside (CZ 10)	San Diego (CZ 7)	Fresno (CZ 13)
Building Type	2,100 default geometry	2,100 default geometry	2,100 default geometry	2,100 default geometry
CAHP Score	<b>81</b>	<b>69</b>	<b>80</b>	<b>55</b>
Annual Energy Use KTDV	154,749	152,712	116,970	165,858
Energy Efficiency Measures	2013 Prescriptive Plus:	2013 Prescriptive Plus:	2013 Prescriptive Plus:	2013 Prescriptive Plus:
Envelope	QII	QII, R-21 wall cavities, U28/S22 Windows, 3.0 ACH50 blower door, Cool Roof (0.90 emit.)	QII	QII, R-21 wall cavities, R-8 ext wall ins., R-10 24" Slab edge ins, 24" OC stud spacing, R-13 rood deck ins, U28/S22 Windows, 1.0 ACH50 blower door, Cool Roof (0.90 emit.)
HVAC	SEER 14, EER 12, 84% AFUE	SEER 14, EER 12, 84% AFUE	-	SEER 18, EER 14, 95% AFUE
DHW	0.82 EF Tankless	-	0.95 EF Tankless, all pipes insulated	0.97 EF Tankless, all pipes insulated
Other	-	R-8 ducts		R-8 ducts, ducts in conditioned space
Incentive	<b>\$600</b>	<b>\$2,400</b>	<b>\$700</b>	<b>\$5,200</b>

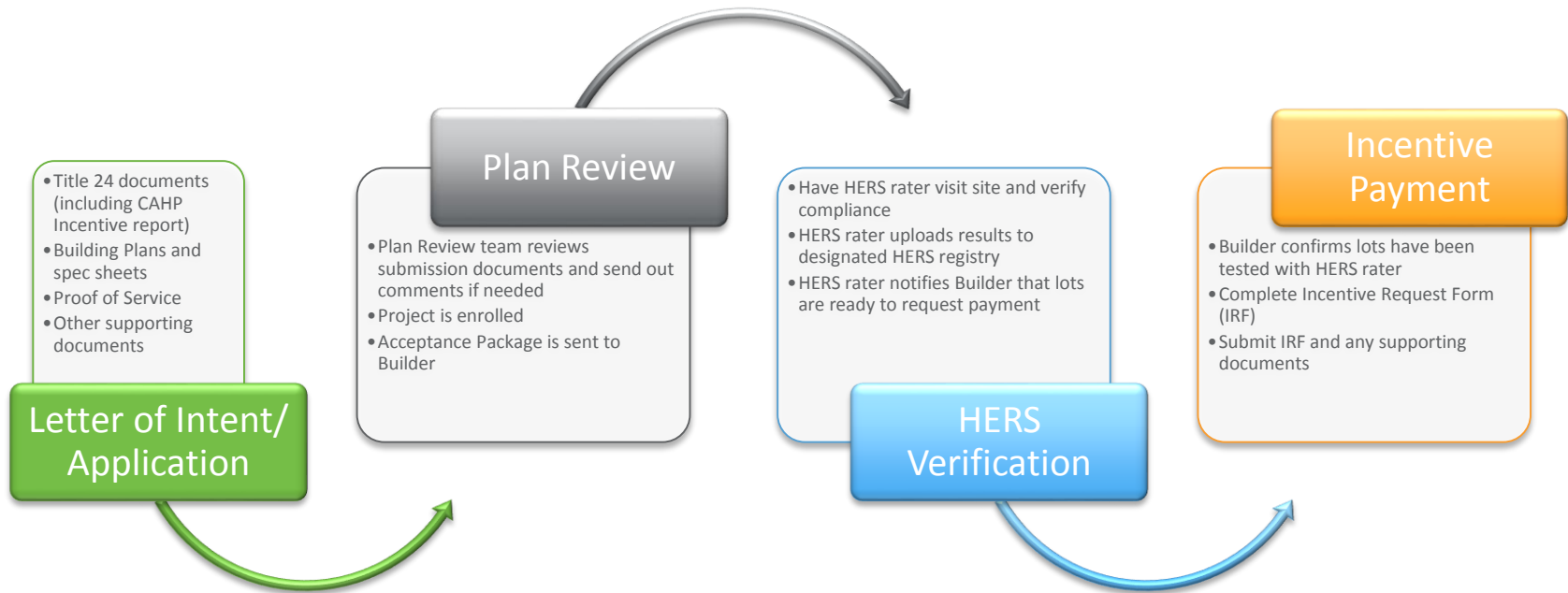
Individual results may vary considerably





# 2014 CAHP Participation Process

The CAHP Participation process will remain the same



# Reminder on CAHP Permit-to-Program Rules

CAHP cycles run in parallel with the Energy Code. The building permit you pull must correspond to the appropriate CAHP cycle in order to be eligible for incentives.

**2008 Energy Code**  
(Effective until June 30, 2014)

**% Above Code based  
program cycles**

All CAHP lots  
enrolled on or before  
June 30, 2014

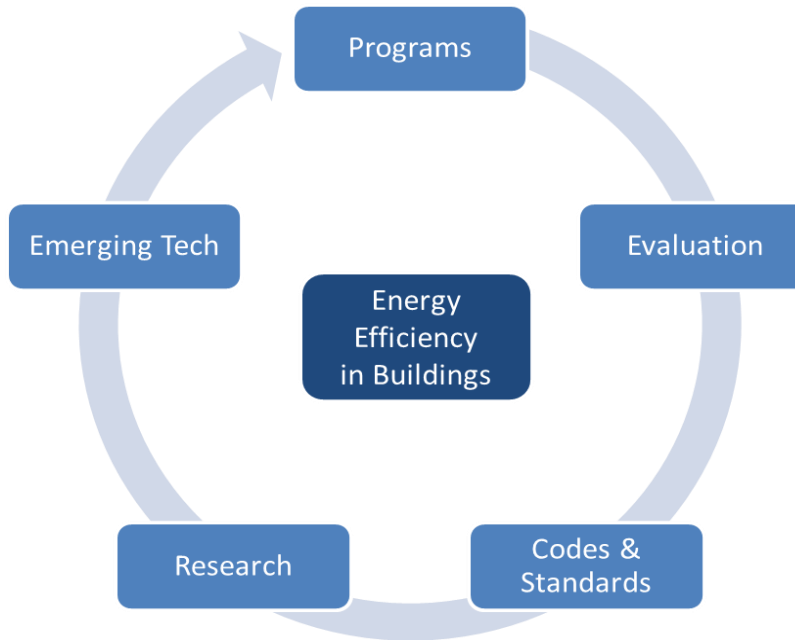
**2013 Energy Code**  
(Effective July 1, 2014)

**CAHP Score based  
program cycles**

All CAHP lots  
enrolled on or  
after July 1, 2014

# Thank you!

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**We're here to help builders today for tomorrow's environment.**

