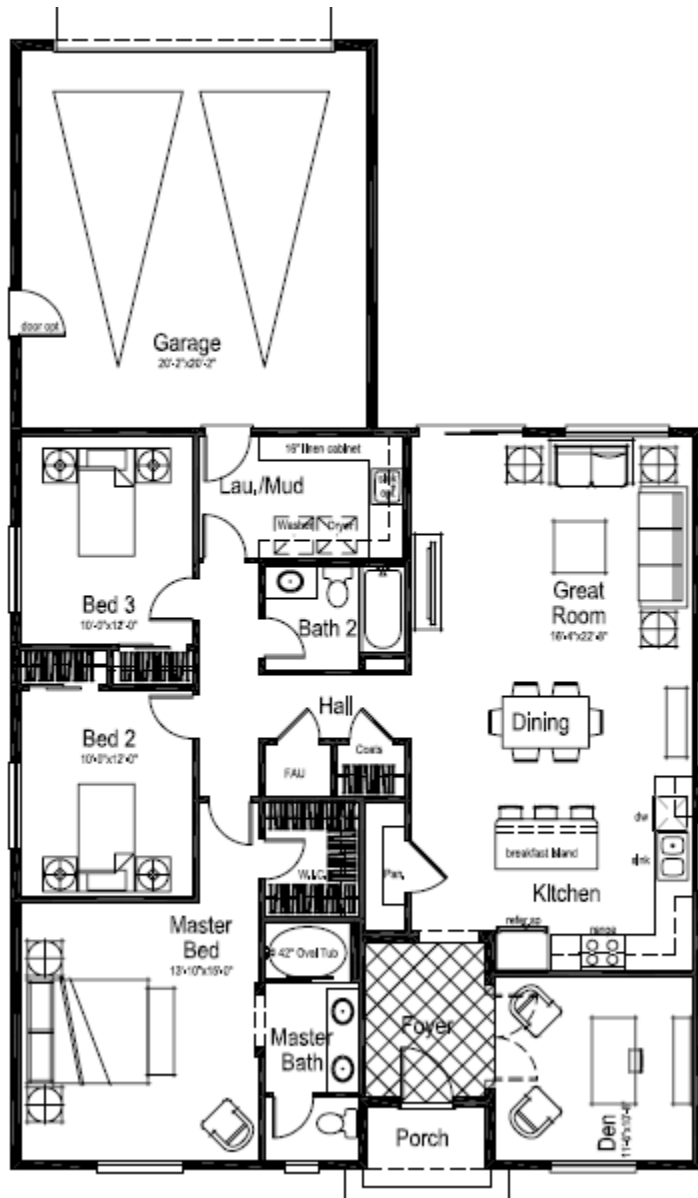


# THE SCE ZNE EXPERIMENT



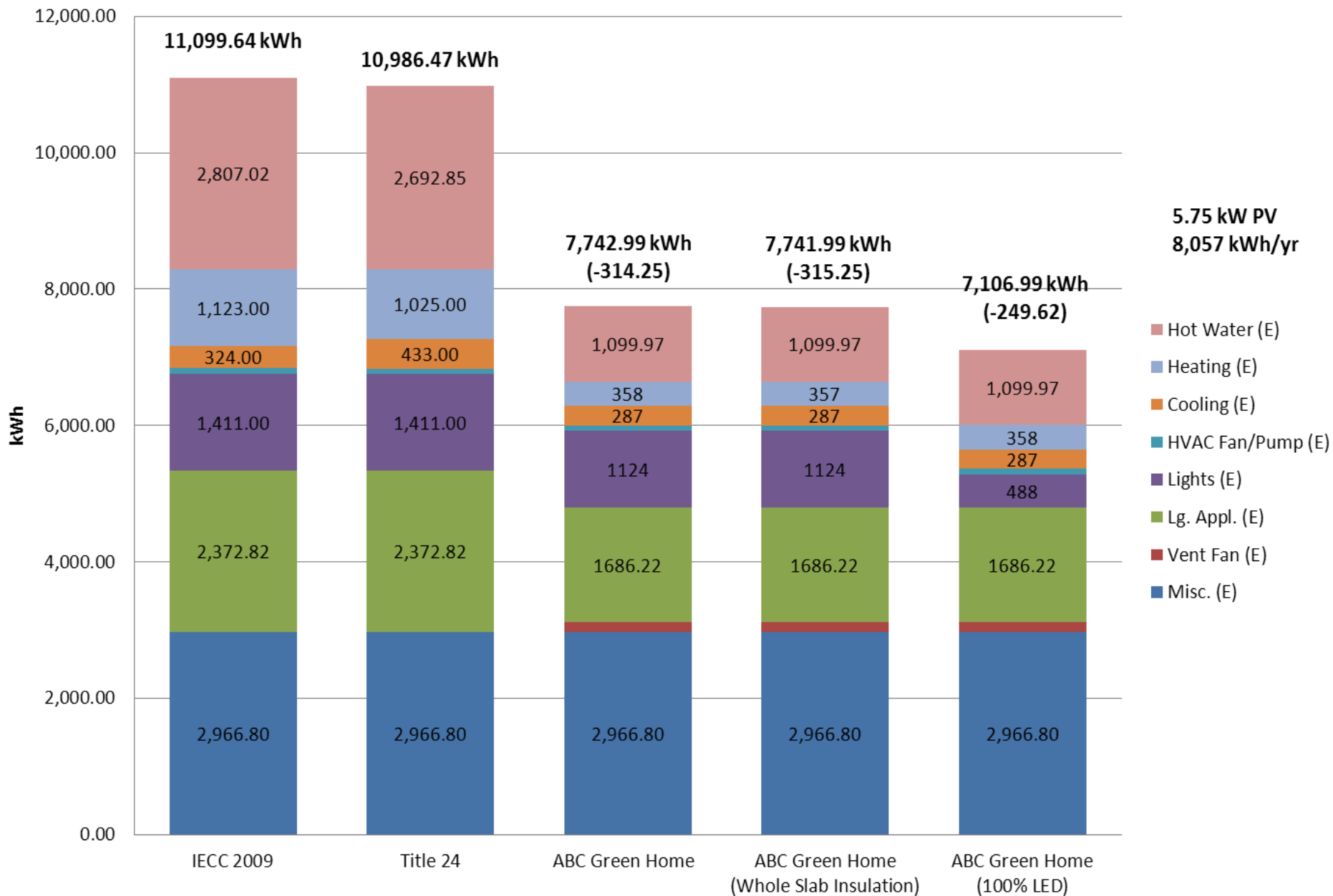
# THE ABC GREEN HOME

- Need to educate industry on design and construction
- Approved by CPUC to build, donate and monitor
- Will use as a touring facility until early 2014
- Will Donate to Habitat for Humanity for a new homeowner
- Monitor for 2 years



- 3 Bedroom 2 bath 1695 Square Feet
- Universal Design is a core feature.
- Virtual tour can be taken on [www.abcgreenhome.com](http://www.abcgreenhome.com)

# ABC Green Home Annual Site Energy



Improvements to Constructions

Element	Current WC		Recommended alternative	
	Description	Values	Description	Values
Exterior Walls	Wood Framed, R-25 cavity with R-4 External insulation, assumed Stucco rendering and gypsum internal finish	U-Value = 0.0604 (≈R-29) Equivalent R-Value = 23.5	As Proposed	As Proposed
Roof	Wood framed Cool roof, tiled, radiant barrier complete with R-49 insulation between joists	U-Value = 0.024 (≈R-49) Equivalent R-Value = 41.6	As Proposed	As Proposed
Slab	Slab on grade	F-Factor = 0.73	As Proposed	As Proposed
Semi-exposed floors/ ceiling (garage)	Wood framed, radiant barrier complete with R-49 insulation between joists	U-Value = 0.024 (≈R-49) Equivalent R-Value = 41.6	As Proposed	As Proposed
Windows	Dual Pane wood frame, LoE clear 3mm, 13mm air, 3mm clear	U-Value = 0.33 SHGC = 0.25	As Proposed	As Proposed

Improvements to HVAC

Equipment/ Service	Base WC		Recommended alternative	
	Efficiency/ Volume	Units	Efficiency/ Volume	Units
Lighting	0.25	W/ ft² (estimated)	As Proposed	W/ ft² (estimated)
Heating Furnace/ source	0.94	Thermal Efficiency/ AFUE	9.5 (for proposed alternative by WC Homes Team)	Heat Pump HSPF
Air Cooled DX Cooling	14	EER (system efficiency)	As Proposed	EER (system efficiency)
	0.858	kW/ ton	As Proposed	kW/ ton
Air Volume (Peak Total) ≈	485	cfm	As Proposed	cfm
Domestic Hot Water	0.94	Energy factor/ efficiency for gas fired storage water heater	As Proposed with the inclusion of a solar thermal system	Energy factor/ efficiency for gas fired storage water heater

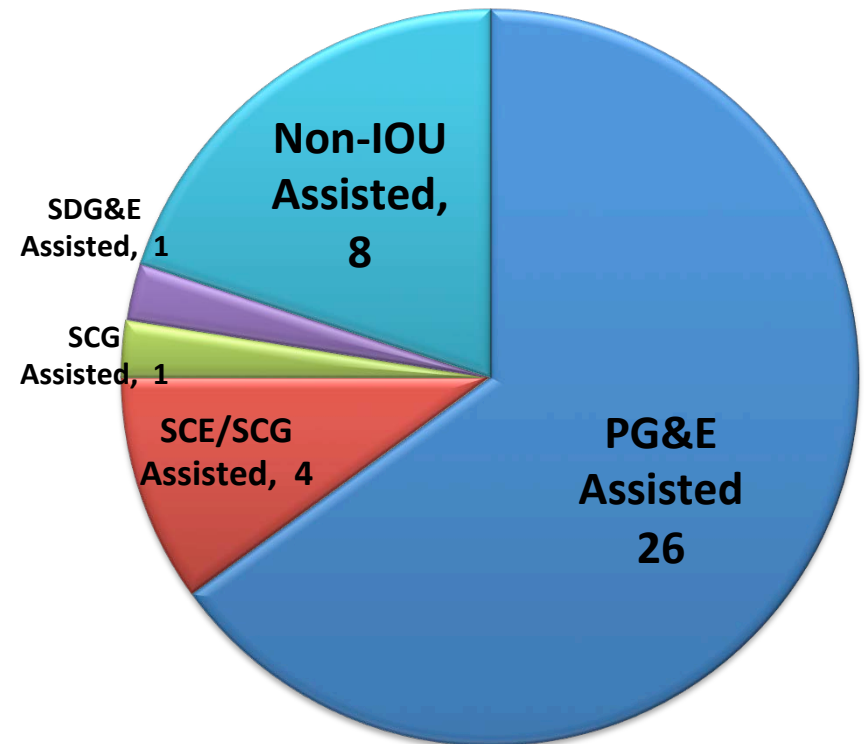
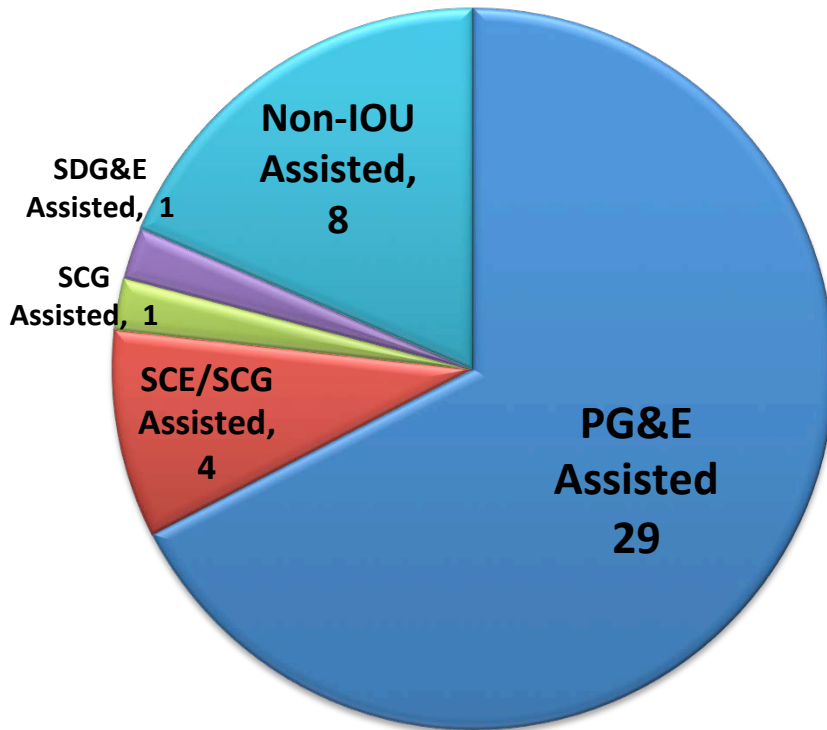
Improvements to attain Net Zero Energy

Metric	Proposed Home without improvements	Proposed Home with alternatives	% Savings
Energy (kWh)	7,752	8,449	-8.99%
Energy (Therms)	297	82	72.44%
Total Energy (kWh/ yr)	16,459	10,849	34.09%
PV Array Rating (kW DC)	11	8	28.87%
Min. PV Array Output (kWh/ yr)	16,459	10,849	34.09%
PV Array Area	593	562	5.25%
Solar Array Area	677	646	4.52%

# Adopted Reach Codes 2010-12

Residential: 43

Non Residential: 40



# Cost Effectiveness Studies to Streamline CEC Review Process

Majority of jurisdictions with CEC-approved Reach Codes reported that they could not have successfully adopted a Reach Code if C&S had not provided the study.

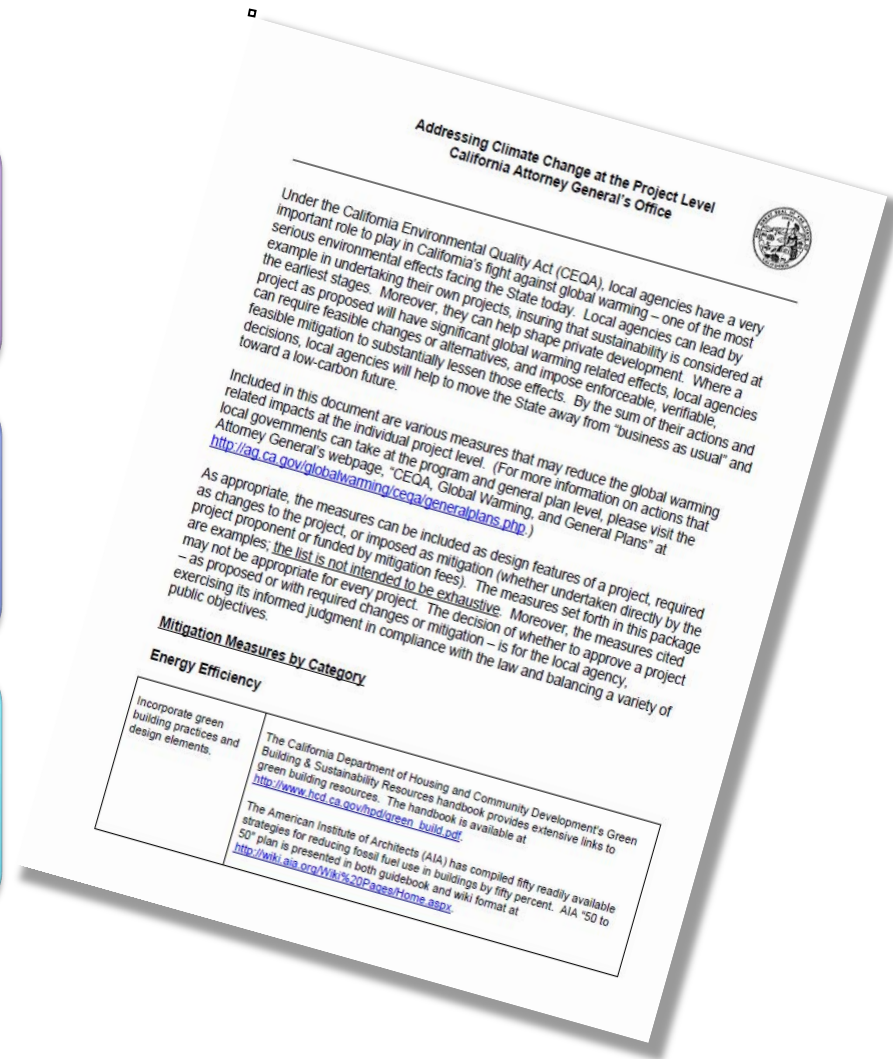
C&S will again collaborate with CEC on methodology and modeling assumptions and obtain CEC “pre-approval” of Cost Effectiveness studies.

# Addressing Climate Change at Project Level Attorney General Memo (2009)

Identifies California Environmental Quality Act (CEQA) as important tool to reduce GHG

Local jurisdictions can impose enforceable, verifiable, feasible GHG mitigation measures

Energy Efficiency tops the list of recommended GHG mitigation measure





# Reach Code Support: New Tool 2013-14

Reducing greenhouse gas emissions was main driver for adopting Reach Codes in 2010-12 Cycle.

Building departments require T24 Energy Calculation reports which model energy savings and CO2 emissions that Planning departments can use to enforce Climate Action Plans and CEQA GHG requirements

C&S proposing a tool to aid jurisdictions with adopted Reach Codes to track energy savings as measurable metric for reporting reduction of greenhouse gas emissions  
(1KWh = 1 lb CO2)