

# HPBA Pacific's ROUNDUP

## CA Codes Overview

*Lake Natoma Inn*

*May 8, 2012*

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# Qualifications

- Energy consulting – local, state and national
  - Energy analysis and design
  - Mechanical engineering – focused on hot and dry
  - Inspections and diagnostics –residential and commercial
  - Consulting – building products and utilities
- Residential
  - California – CBIA Energy and Codes Committee
  - Advisory Board – CALGreen
  - NAHB – Energy, Green Committees, IECC and Energy Efficient Buildings Tax Credit Working Groups
  - NGBS=ICC-700 Consensus Committee; Chair TG5-Energy
- Commercial
  - California Building Properties Association
  - BOMA California, NAOIP, ICSC, IREM, RILA



# Overview

## Drivers for Energy Policy in CA

- AB 32 – Global Warming Solutions Act
- CEC/CPUC Integrated Energy Policy Report
- Governor's office

## CEC T-24

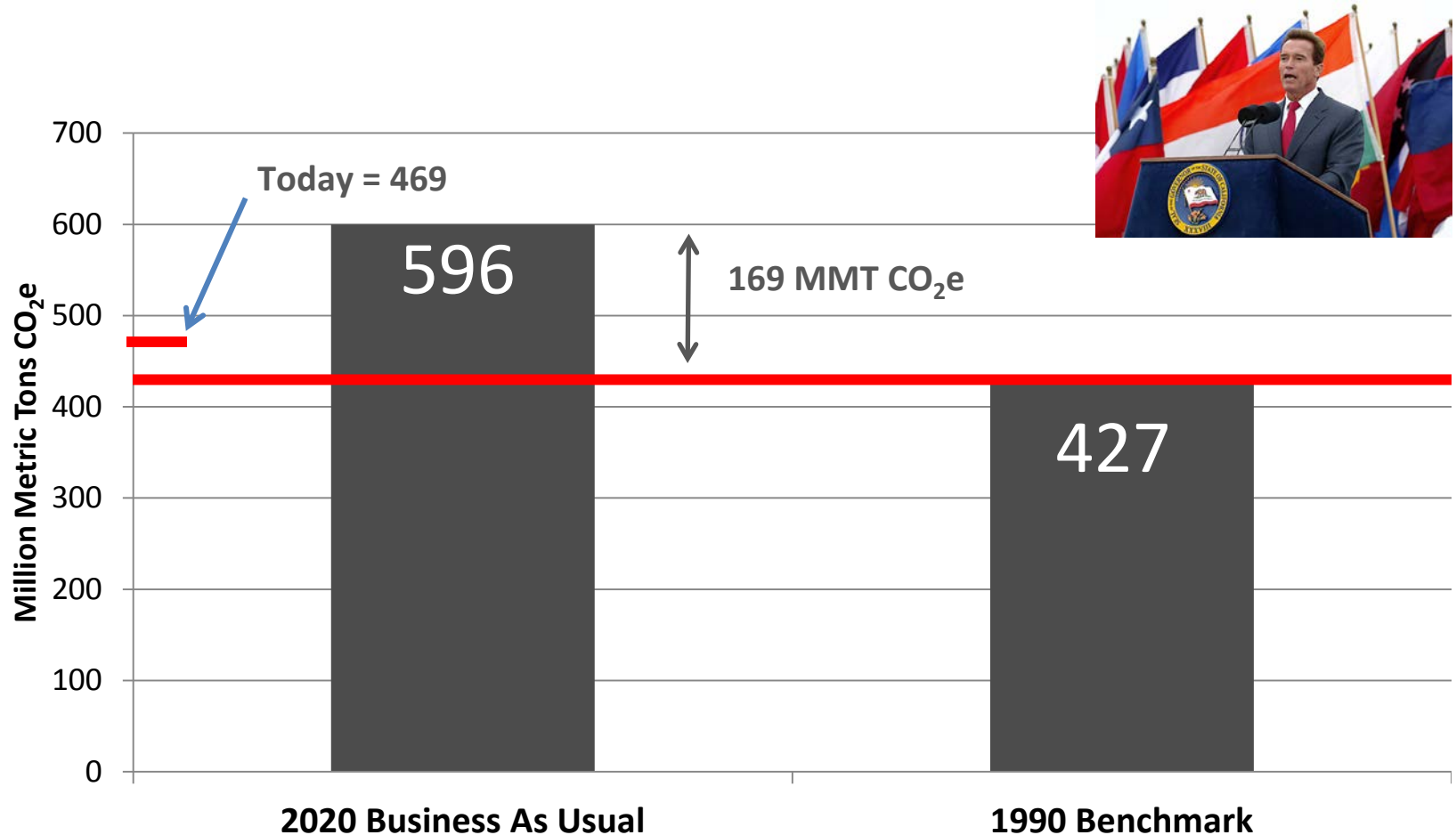
- 2013 Standards
  - Update
  - Process
- Compliance options

## CA Green Code

- Impact on fireplaces, gas heated fireplaces
- Process



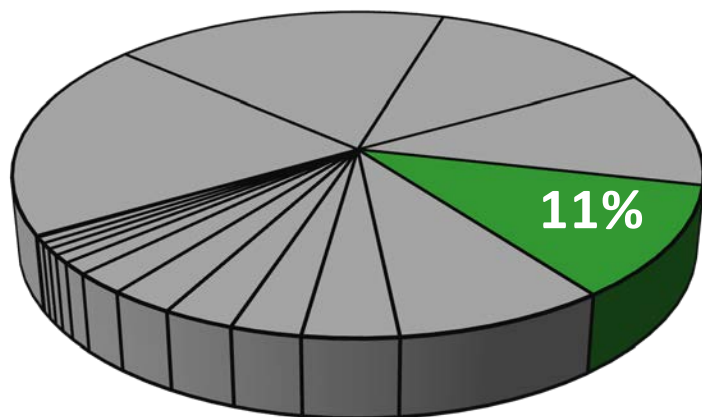
# AB 32 Global Warming Solutions Act



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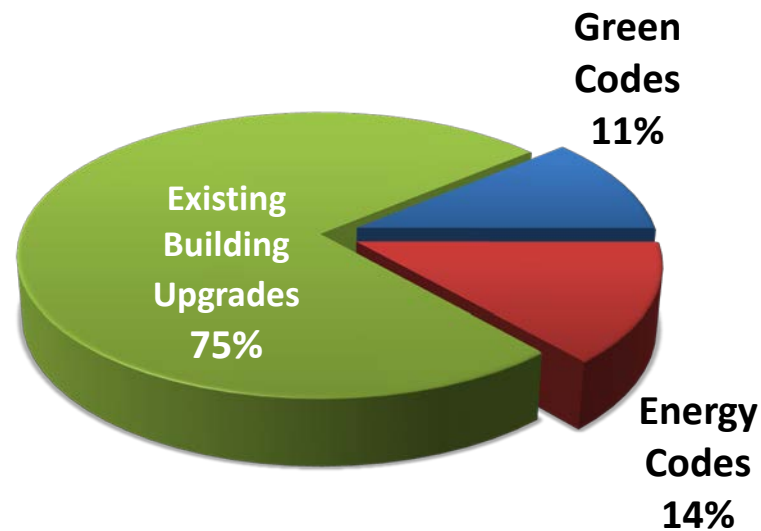
## CA Greenhouse Gas - Buildings

169 MMTCO<sub>2</sub>e



Building Related = 19.5 MMTCO<sub>2</sub>e

75% GHG (energy) savings from retrofits of existing buildings



# AB 32 Global Warming Solutions Act

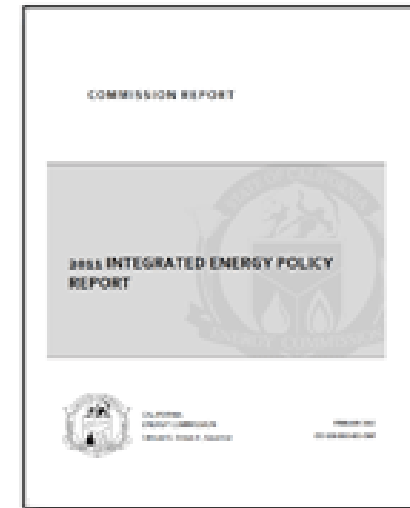
## ARB Residential Goals

Through 2020, ARB has estimated a potential 12 million metric ton reduction in CO<sub>2</sub>e from the following measures:

- New Construction
  - Market 186,000 new residential units per year through 2020
  - Mandatory Green Building Code in 2010 (100% homes)
    - Build 15% over 2008 Title-24
    - 20% reduction in indoor water use
  - 50% of new homes are built beyond code through 2020
    - Build 35% and 50% over 2008 Title-24
    - 10% increase in PV systems each year (100% in 2020)
- Existing Construction
  - 22% of existing homes voluntarily retrofit (2% per year)
  - 34% of existing homes mandatorily retrofit (3.5% per year)
    - both assume 25% decrease in energy use

# Integrated Energy Policy Report

- CPUC, CEC, CARB, ISO
- Coordination to implement Governor Schwarzenegger's 2020 energy policy goals
  - 33% energy from renewables
  - “Big Bold” Initiative – 2008
    - All new CA residential will be ZNE by 2020
    - All new CA commercial will be ZNE by 2030



# Zero Net Energy

ZNE Buildings make as much energy as they use

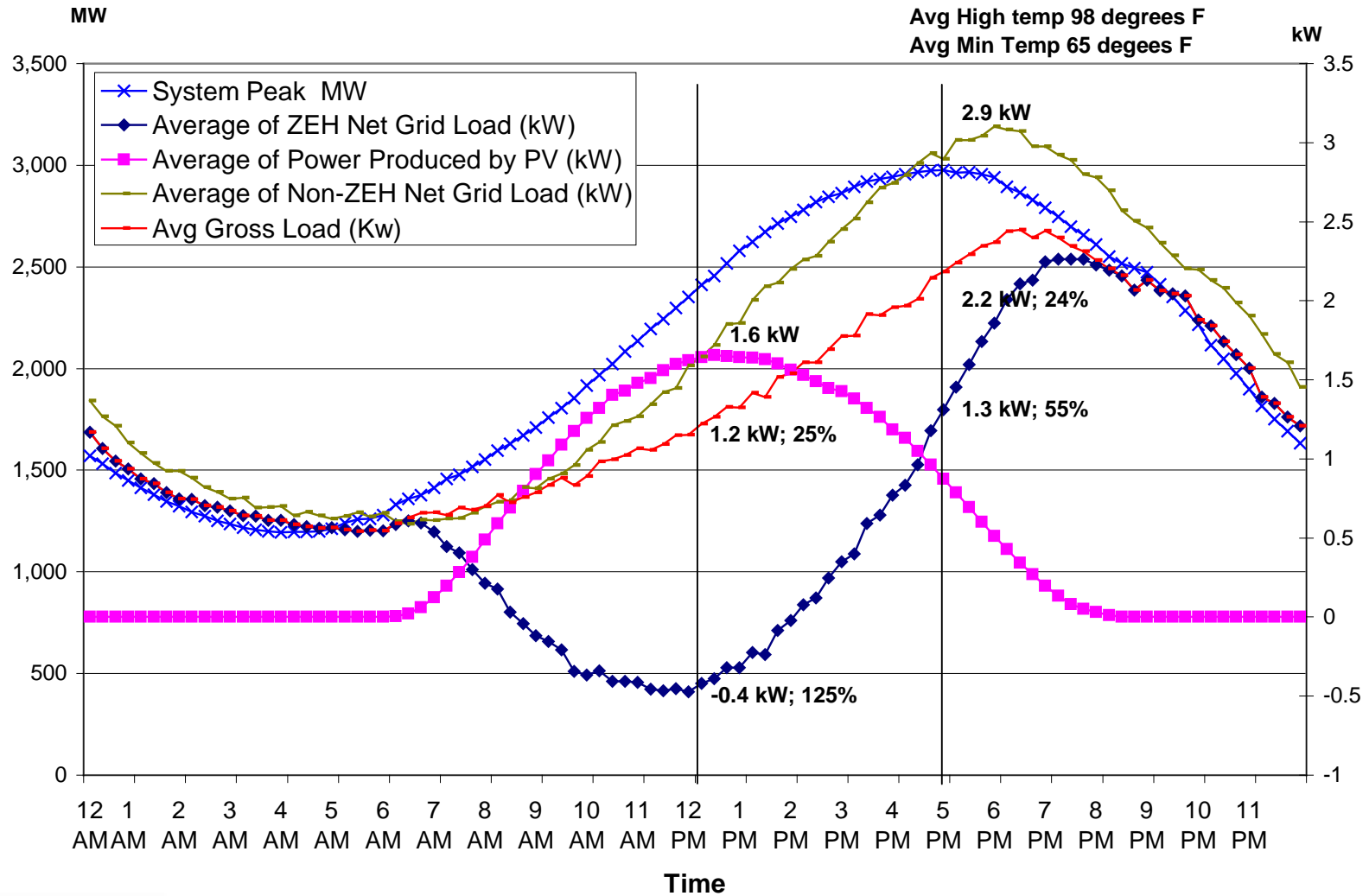


- They are energy (Btu) neutral; not dollar neutral
- Carbon neutral, or zero emissions (not in CA definition)
- Independent from grid (CA definition still connected to the grid)

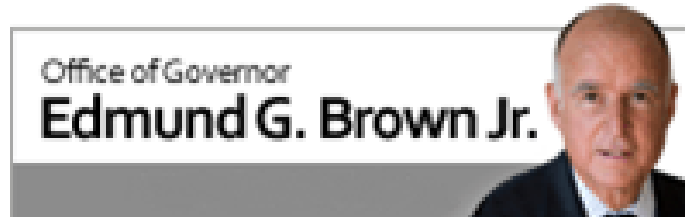


# Zero Net Energy

Average 15 Minute Interval Peak Demand ZEH vs. Non ZEH July, 2005



# Governor's Office



Three priorities:

#1 priority = balanced budget

#2 priority = balanced budget

#3 priority = balanced budget

# California Energy Commission

- CEC leads CA energy policy
- 5 Commissioners appointed by the Governor
- Triennial adoption = 2013 Standards
  - 24 month process (20 workshops; four hearings)
  - 15 Day Language released this week
  - Code adopted by CEC at Business Meeting end of May
  - Implemented January 1, 2014
    - Residential – housing/apartments 3 stories and less
    - Commercial – most other buildings



# Purpose of CA Energy Codes

What is Title 24, *Part 6* vs. *Part 11*?



Part 6 is the CA Energy Code

Part 11 is the CA Green Code

What does Part 6 try to do?

~~Reduce energy use in new buildings~~

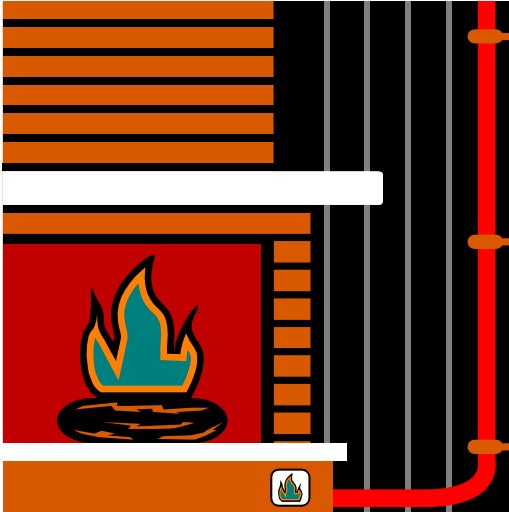
Reduce peak load!

# 2013 Standards Impact

- Most stringent energy code increase in history = 33%
- Significant opposition from CBIA – Governor's Office told CEC to reduce stringency per CBIA's objections
- Building industry impact – Governor's office; support for tax increase to balance budget



# HPBA Code Issues

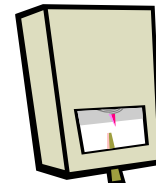


- 2013 code proposed to eliminate two-zone modeling
- Moving towards ZNE - In a few years, gas vented heating fireplaces could only be allowed in new construction if they compensate for energy usage
- No current credit for gas-vented fireplace heating value to home.

# CEC Terms and Process

## How to approach based on your market

- The Standards set rules for new construction; (two – zone modeling)
- Alternative Calculation Manual – defines math
  - Two-zone modeling
  - Credits for installing zonal heating
    - No ducts – credit for no heat loss from ducts (new)
    - Reduce leakiness of fireplaces – reduce air infiltration (existing)
- Compliance Option
  - Determine requirements for credit
    - Minimum furnace efficiency
    - Thermostat that controls both systems/zones
    - Zonal controls – openable areas
  - Language and examples for building officials



# HPBA Opportunity

## CEC Compliance Option

- Determine credit for installing gas vented fireplace (new)
  - Preserve gas-vented fireplaces as feature in RNC
  - Enhance importance of zonal control
- Measures in ACM as Compliance Option also are in loading order for retrofit
  - Cost effective alternative when considering energy upgrade
  - Home Energy Rating Score (HERS) process



# CA Green Code *CAL*Green

- Mandatory Green Code for all new buildings
- Formed by State Advisory Group
  - Residential – headed by HCD
  - Commercial – headed by BSC
- 3 or 4 workshops; two drafts, 12 months = code
- Direct access to staff

# CALGreen Code Cycle

- Revised on a triennial cycle
- Update revised last summer
  - effective July 2012
  - [www.hcd.ca.gov/CALGreen.html](http://www.hcd.ca.gov/CALGreen.html)
- Next version is full revision
  - Had two advisory Group meetings
  - Will conclude June 2012
  - Effective 1/1/14

# HPBA Issues in *CAL*Green

## Clarify impact on fireplaces

### SECTION 4.503 FIREPLACES

4.503.1 General. Any installed gas fireplace shall be a direct-vent sealed combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA Phase II emission limits where applicable. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.



# New *CAL* Green Language

## SECTION 4.503

### FIREPLACES, WOODSTOVES AND FUEL BURNING APPLIANCES

**4.503.1 General.** ~~Any installed gas fireplace shall be a direct vent sealed combustion type. Any installed woodstove or pellet stove shall comply with U.S. EPA Phase II emission limits where applicable. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.~~ Woodstoves, gas fireplaces, pellet stoves and fireplaces shall comply with applicable local ordinances and be installed in accordance with manufacturer's installation instructions.

**4.503.2 Gas fireplaces.** Decorative gas appliances shall be direct-vent appliances and shall be listed in accordance with ANSI Z21.50/CSA2.22. Gas fireplace heaters shall be direct-vent appliances and shall be listed in accordance with ANSI Z21.88/CSA2.33.

**4.503.3 Wood burning appliances.** Fireplace inserts and woodstoves shall be listed in accordance with UL 1482 and shall be certified in accordance with the requirements of the EPA Standards of Performance for New Residential Wood Heaters, Title 40 CFR Part 60 Subpart AAA.

**4.503.4 Factory-built fireplaces.** Factory-built fireplaces shall be listed in accordance with UL 127.

**Note:** For the purposes of this section, factory-built fireplaces shall include, but not be limited to, prefabricated metal "zero clearance" fireboxes and prefabricated blocks of reinforced precast lightweight concrete masonry or refractory masonry, which are assembled in the field using grout and mortar specified by the manufacturer.

**4.503.4.1 Wood burning factory-built fireplaces.** Wood burning factory-built fireplaces shall be qualified at the U.S. EPA's Voluntary Fireplace Program Phase 2 emissions level of 5.1 g/kg of wood burned.

**4.503.5 Pellet stoves.** Automatic feed, pellet fuel-burning room heaters that are intended to burn wood pellets or other suitable solid fuel shall be tested and listed in accordance with ASTM E1509-04.

# Questions?