Energy Efficiency and Carbon Emissions

New and Existing Housing

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Building Industry Association

of Southern California

July 31, 2008

Thanks to the California Building Industry Association (CBIA)
And CONSOL for data and analysis presented here today!

Presentation Overview

Residential Energy Efficiency Improvements

Inventory and Statistics

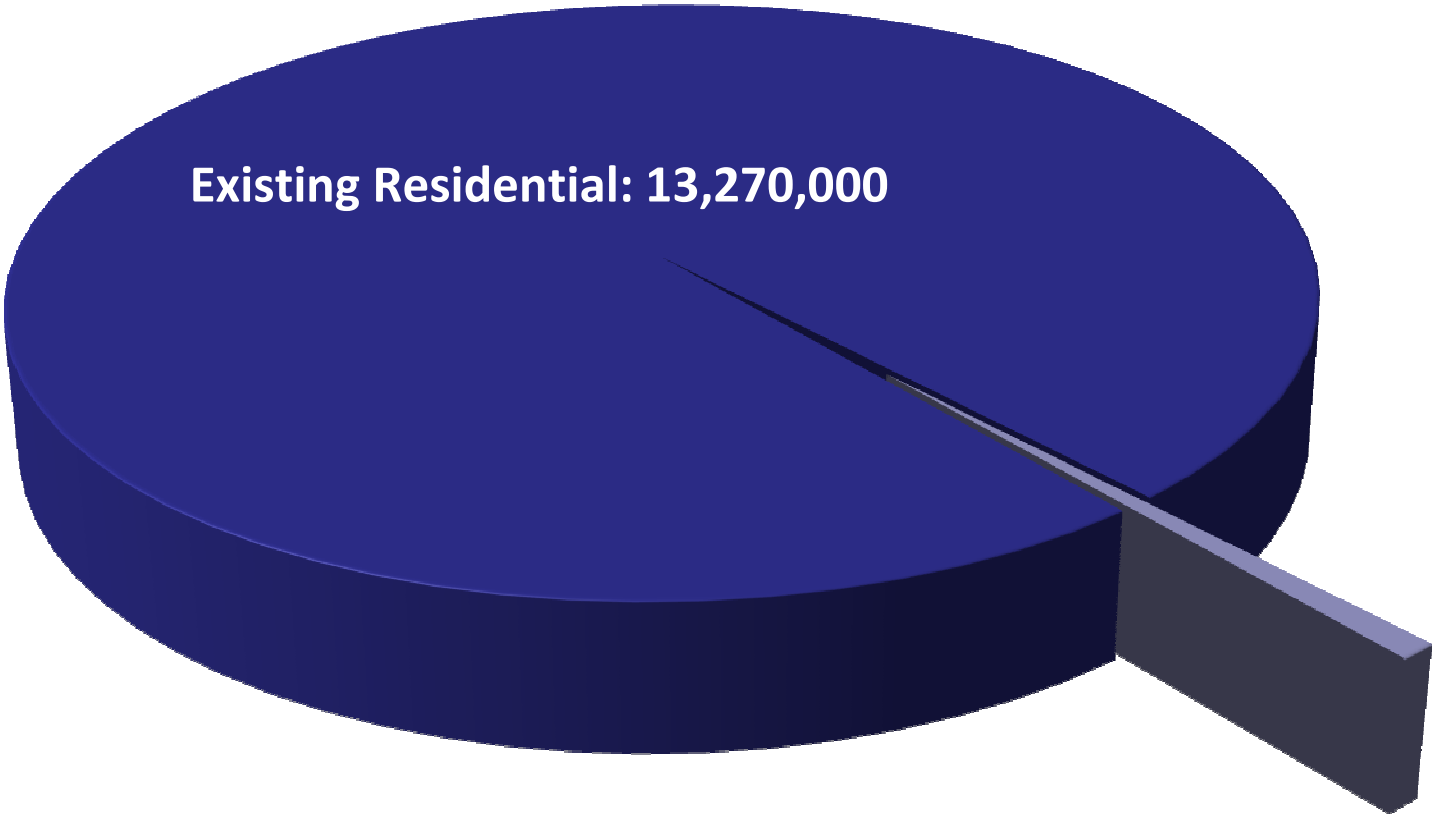
New Construction

- Energy uses
  - Regulated by energy code
  - Appliances
  - Lighting & Plug load
- Home size
- Translate energy into carbon emissions

Carbon footprint of new v. existing housing

- Emissions by build decade
- Cost effectiveness

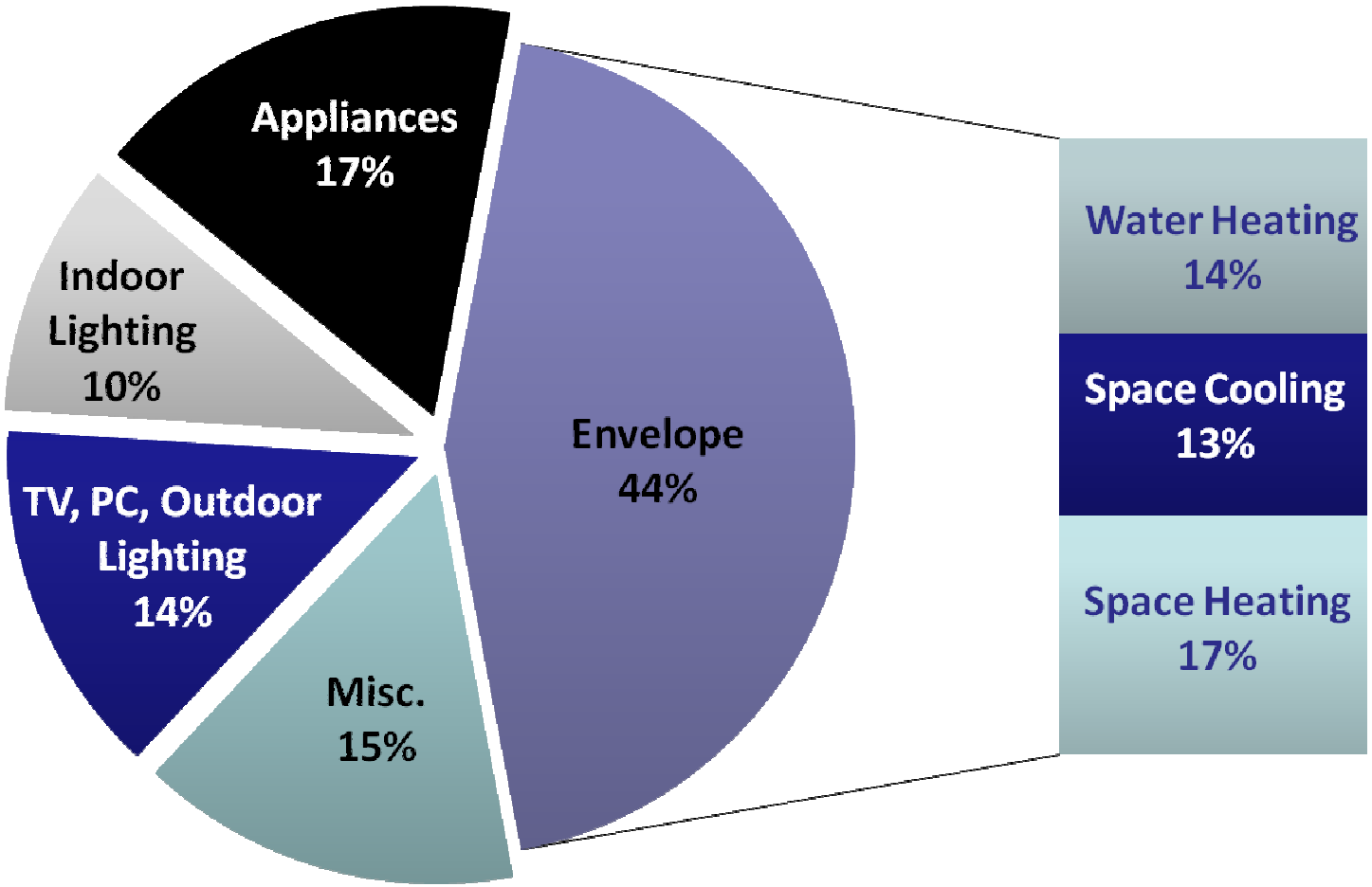
California Dwelling Units



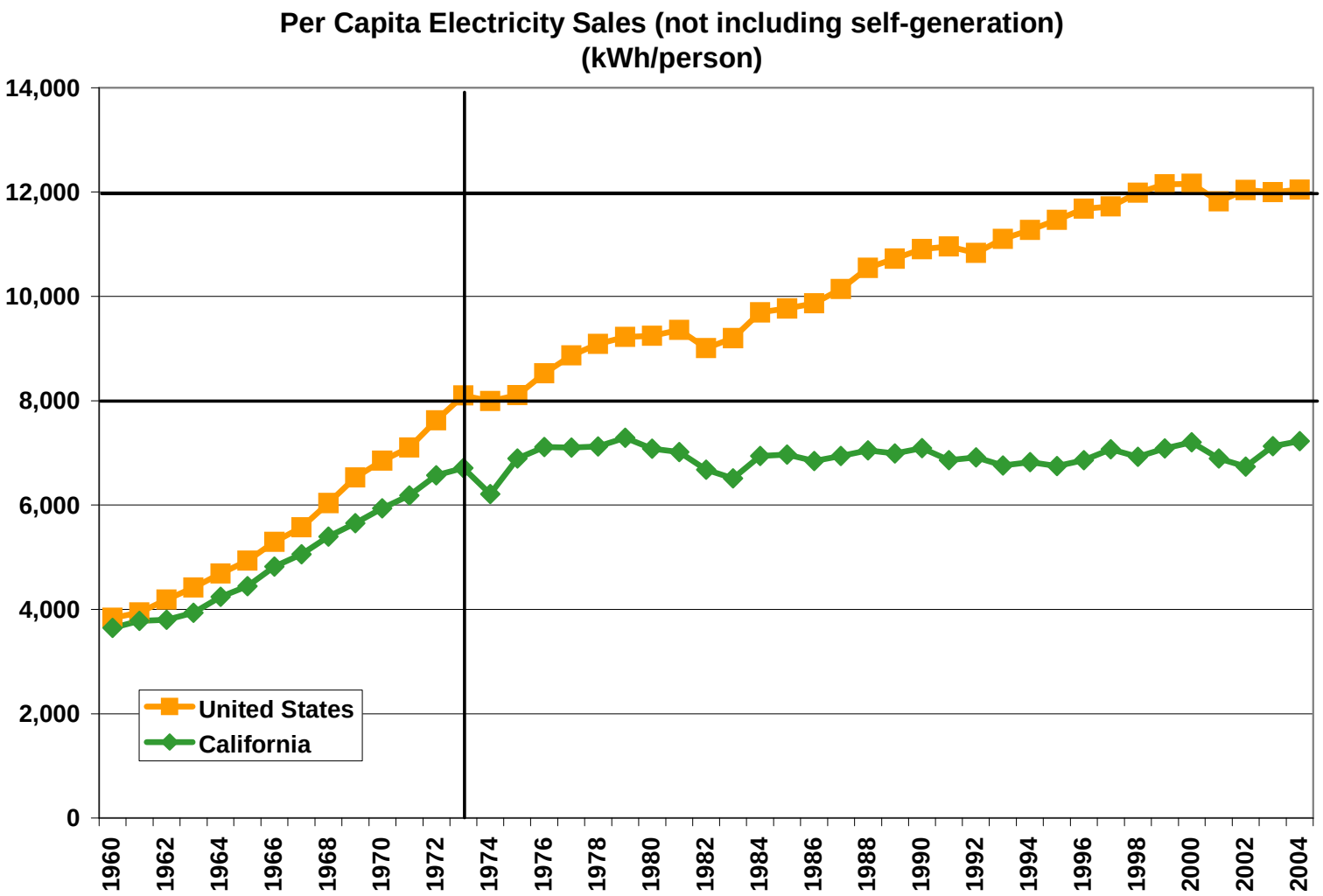
2007 Residential New Construction: 112,300

0.86%

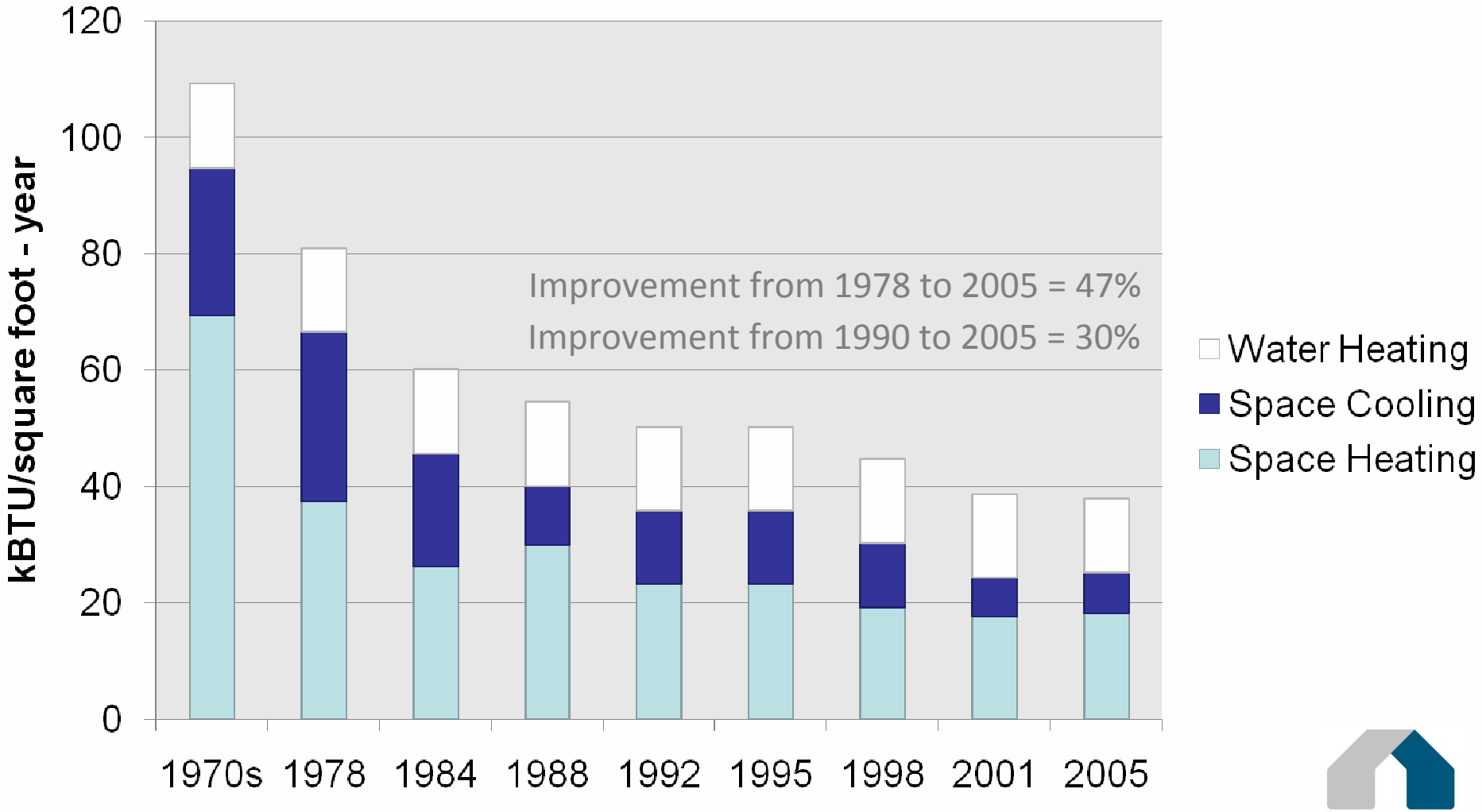
Typical Energy Use In The Home



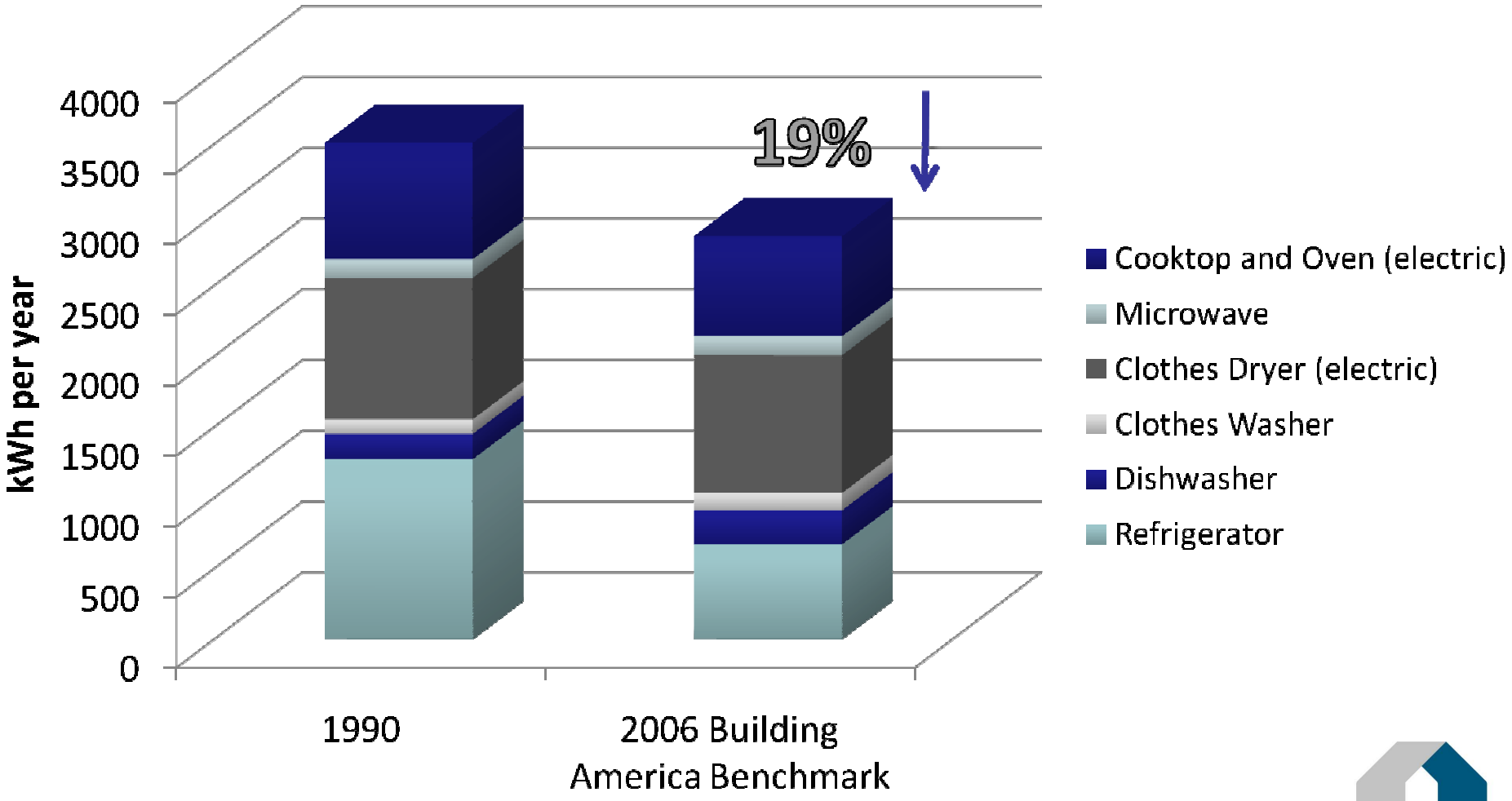
California History of Energy Efficiency



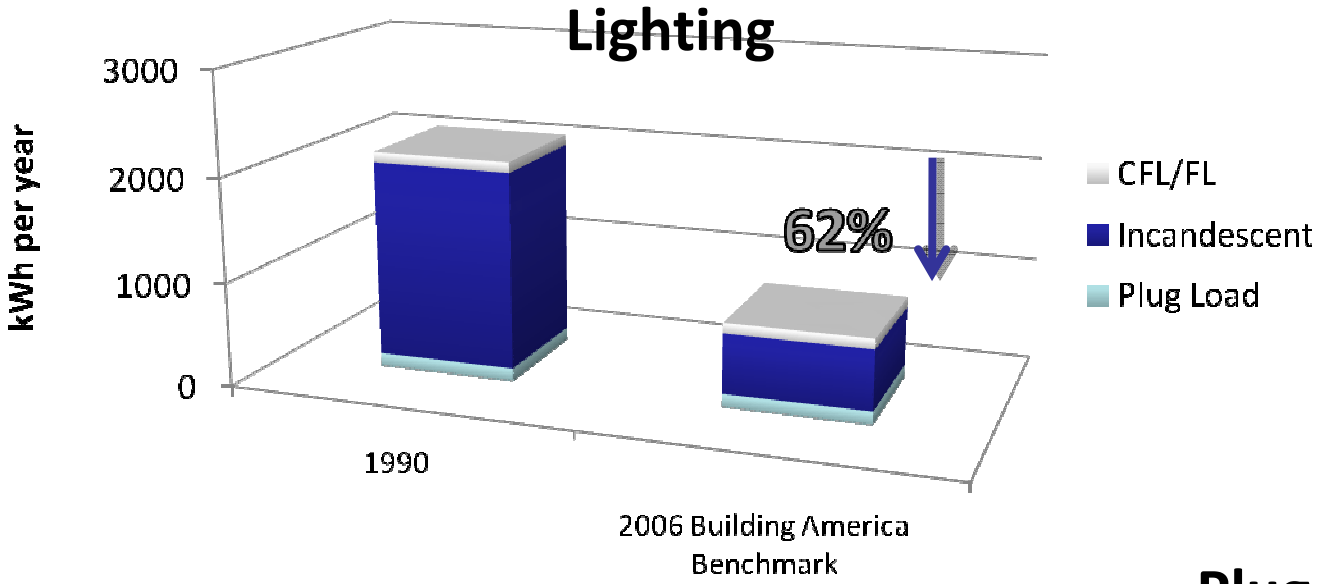
Effect Of Title-24

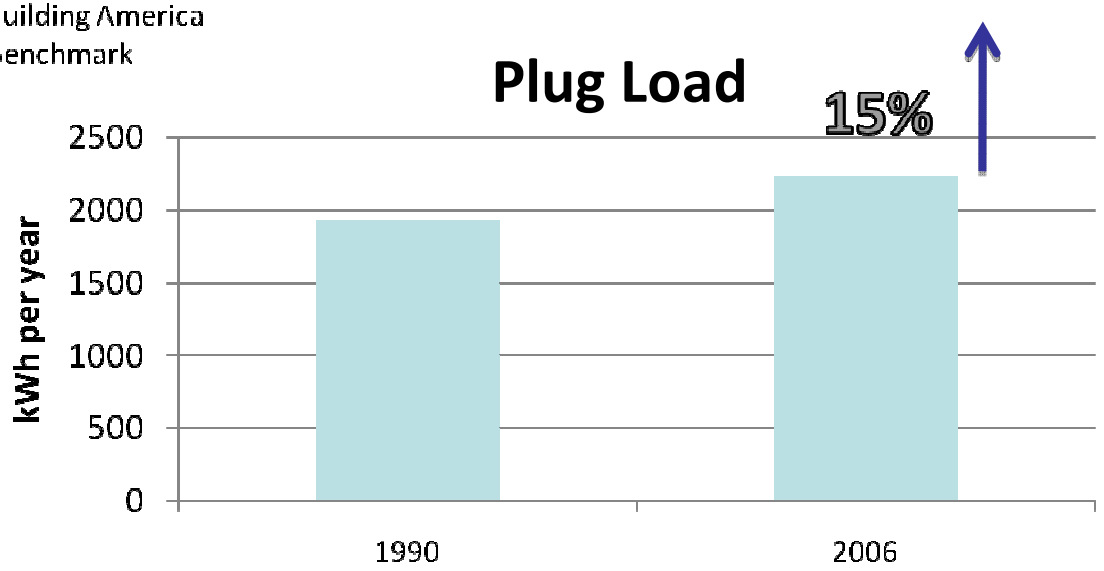


Appliance Comparison



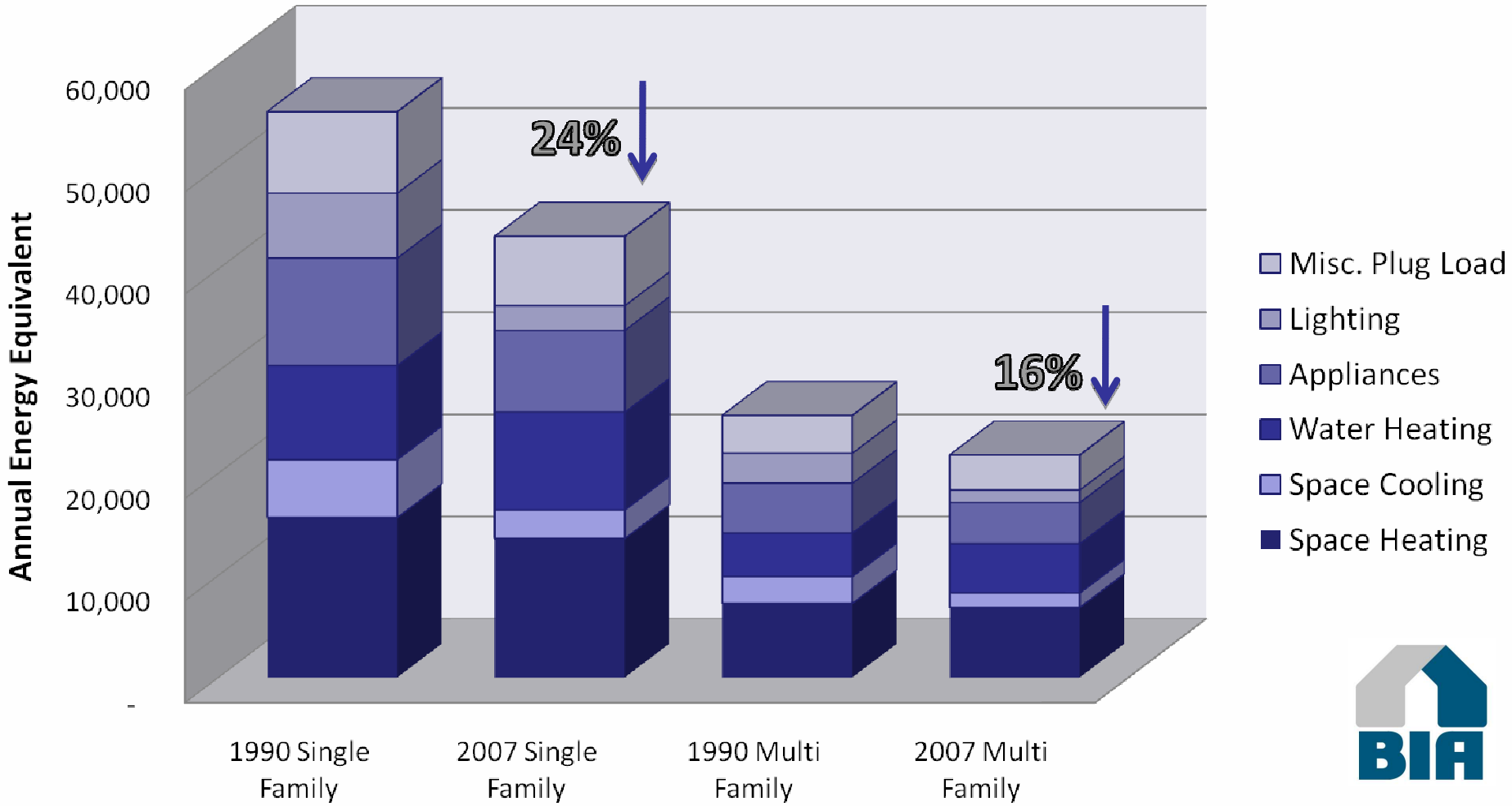
Impact Of Light And Plug Load



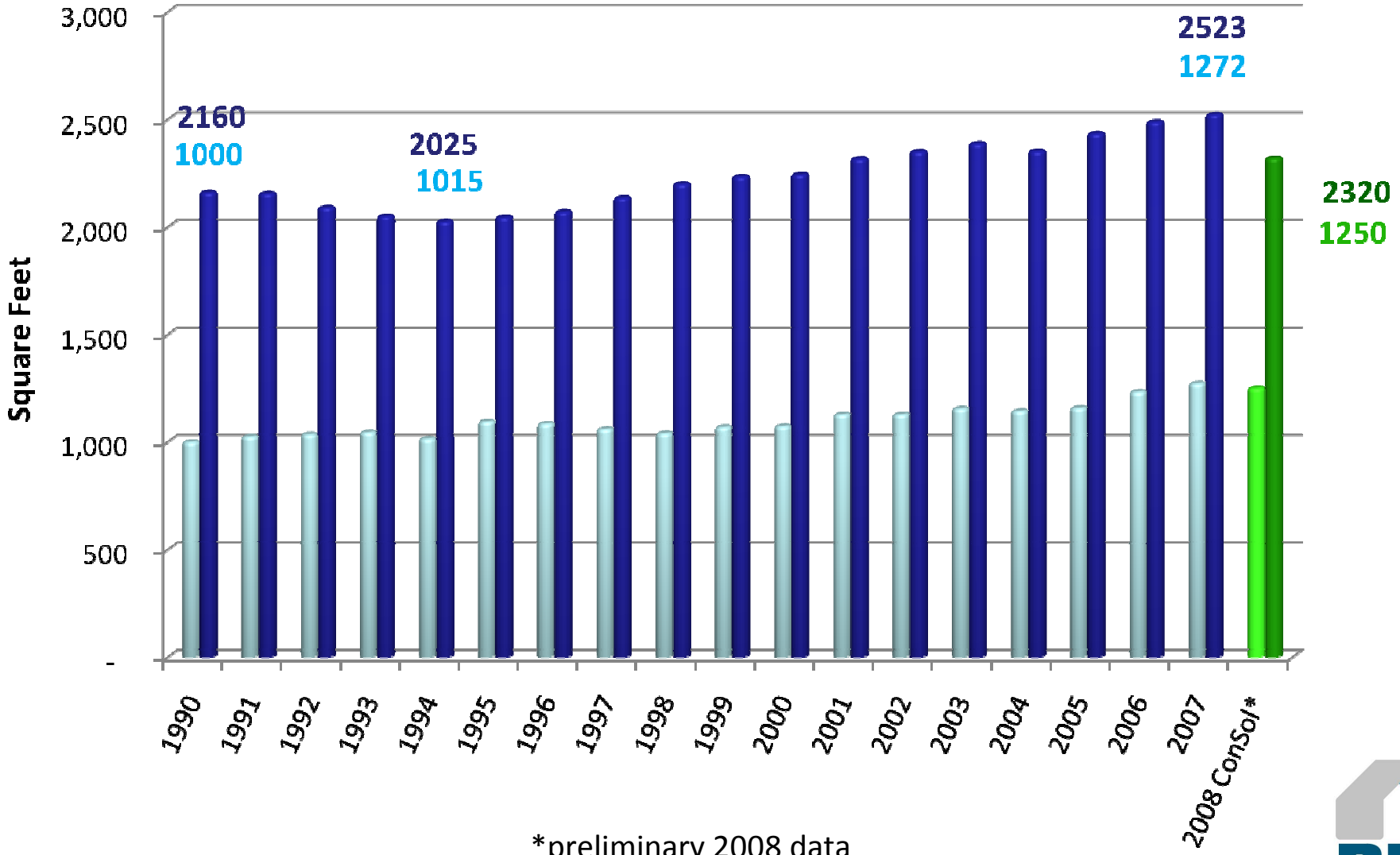


Whole House Energy Use

Sacramento Average—Climate Zone 12

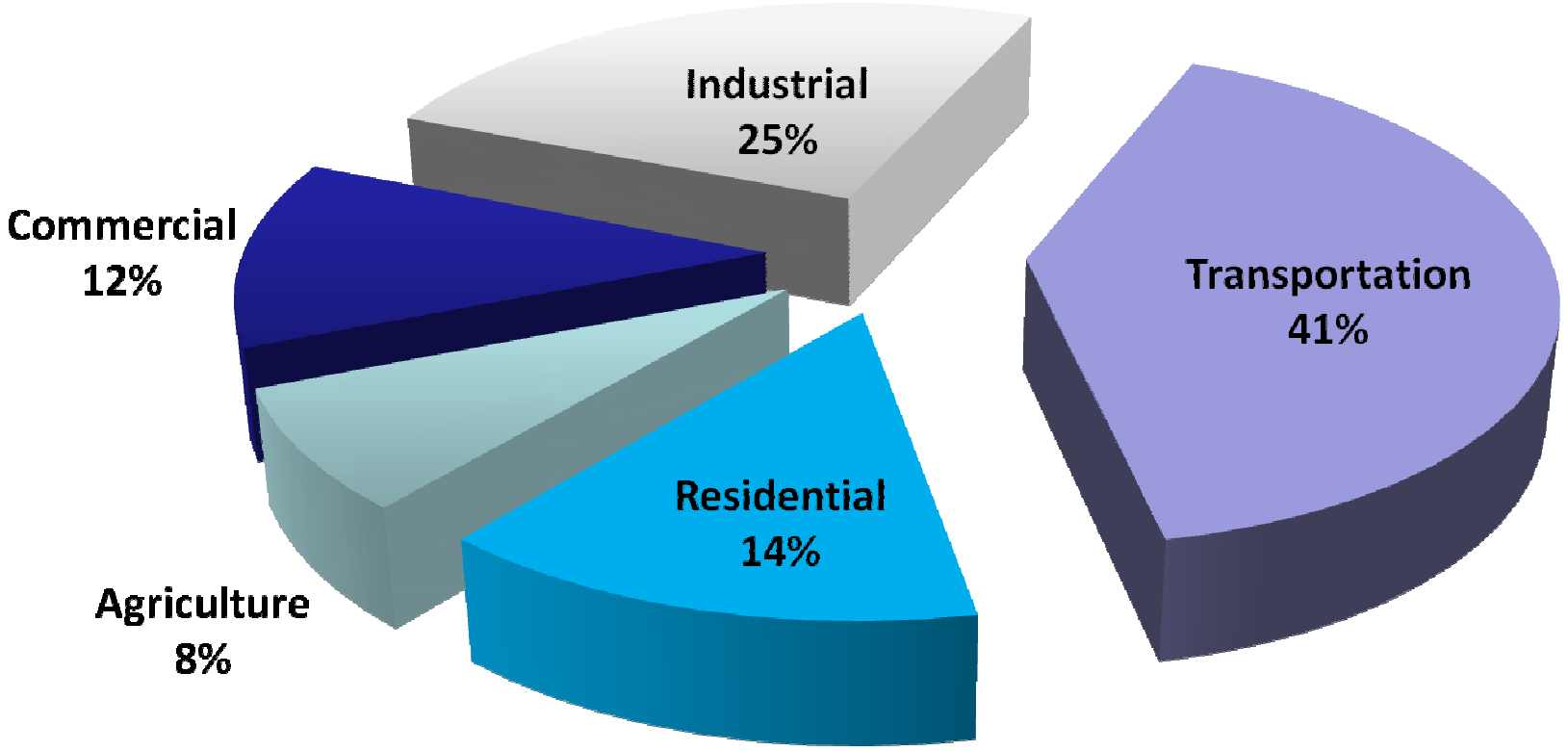


House Size In Western U.S.



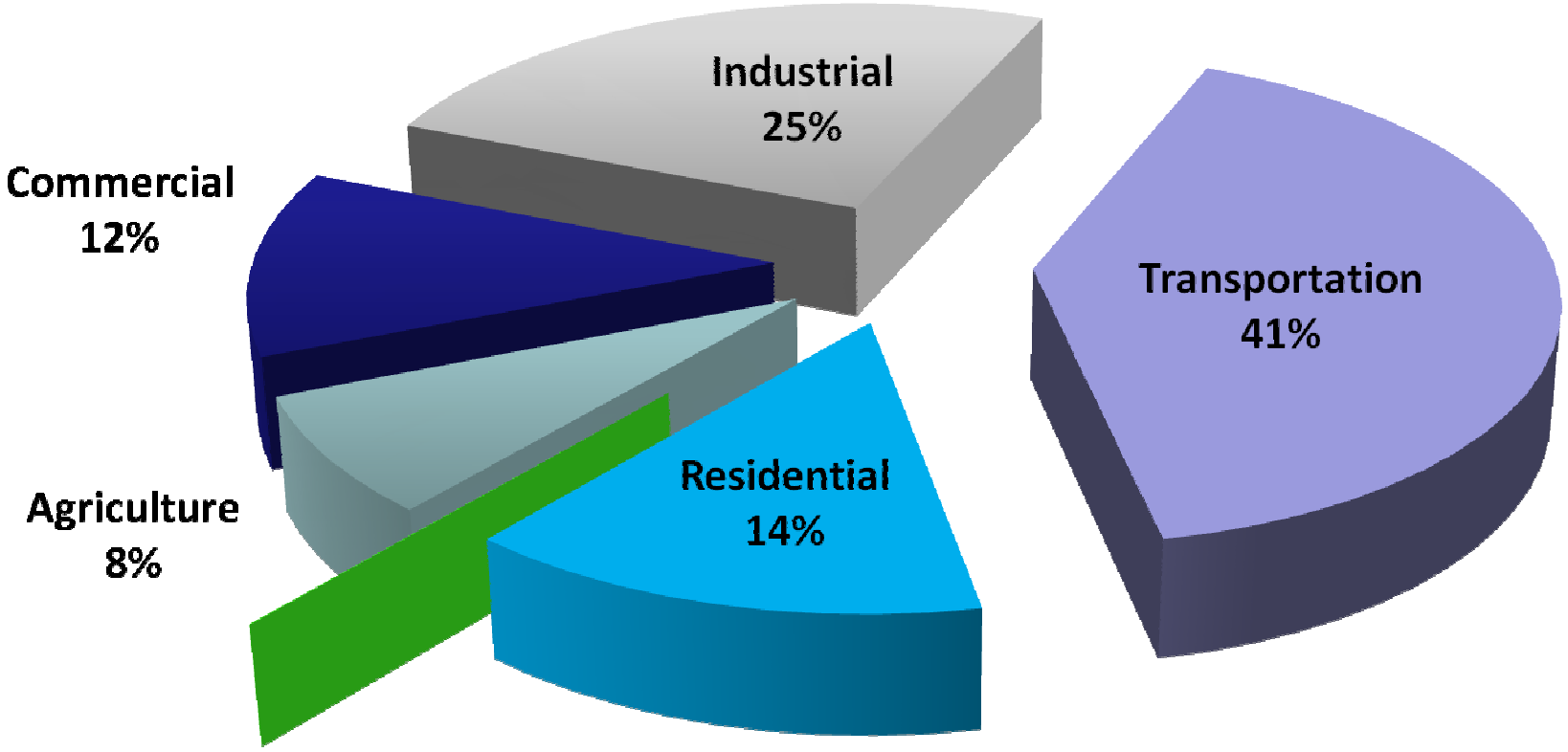
*preliminary 2008 data

CARB Greenhouse Gas Inventory



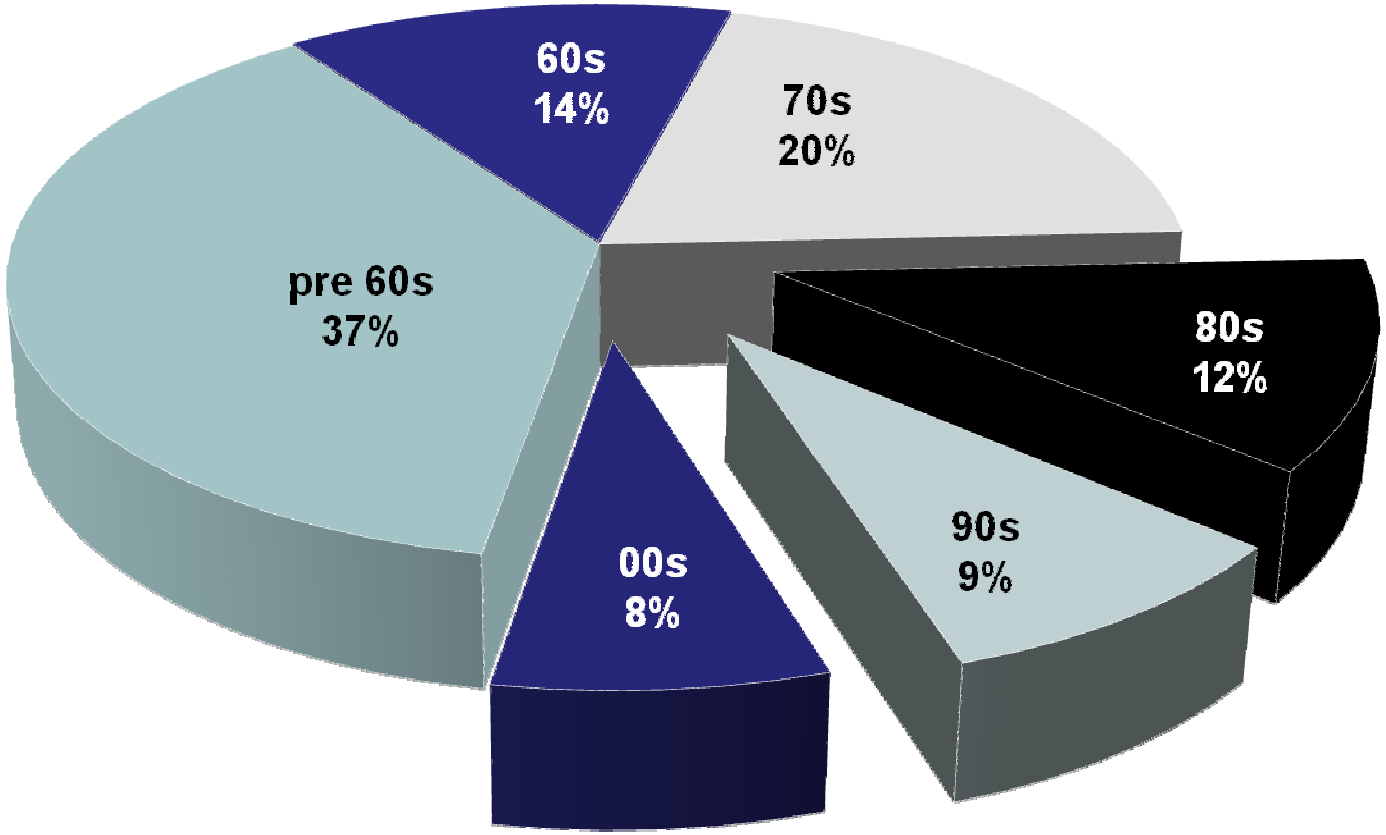
*GHG emission from electrical generation included in each market segment

GHG Impact Of New Housing



Residential New Construction 0.12%

Residential GHG By Build Decade*

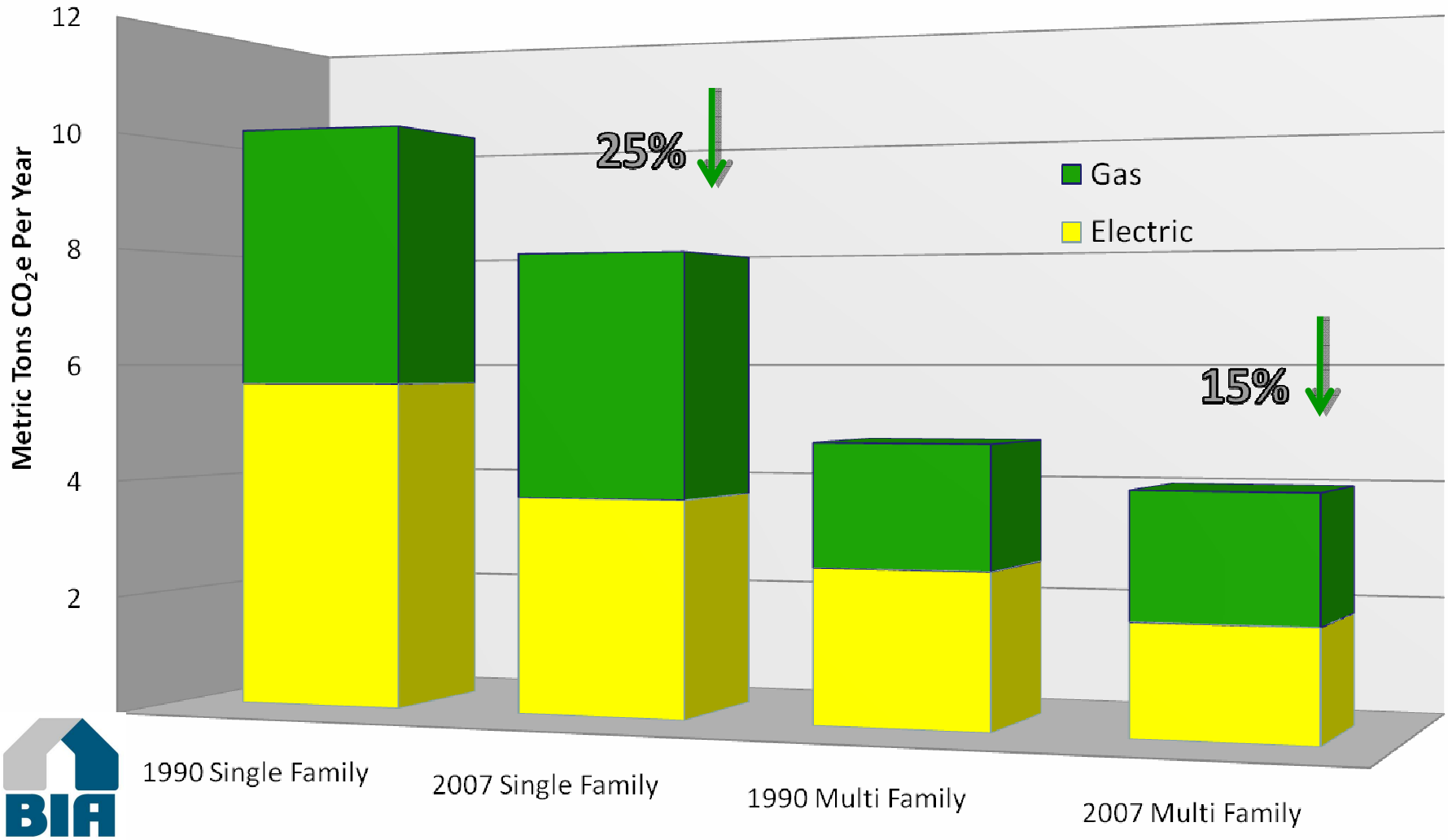


22 Million Metric Tons CO_2e per year

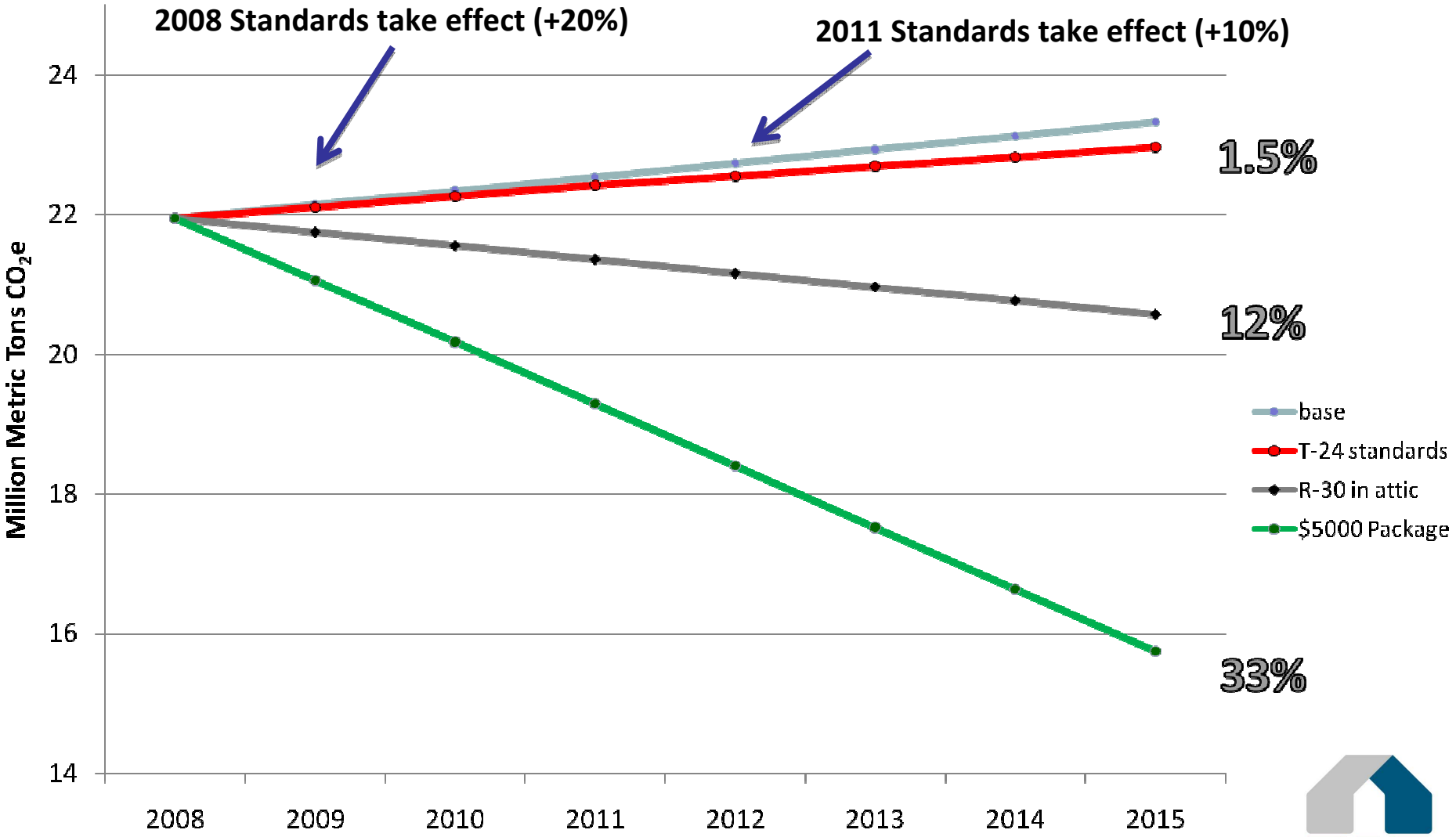
*Single Family Detached Units

Carbon Footprint

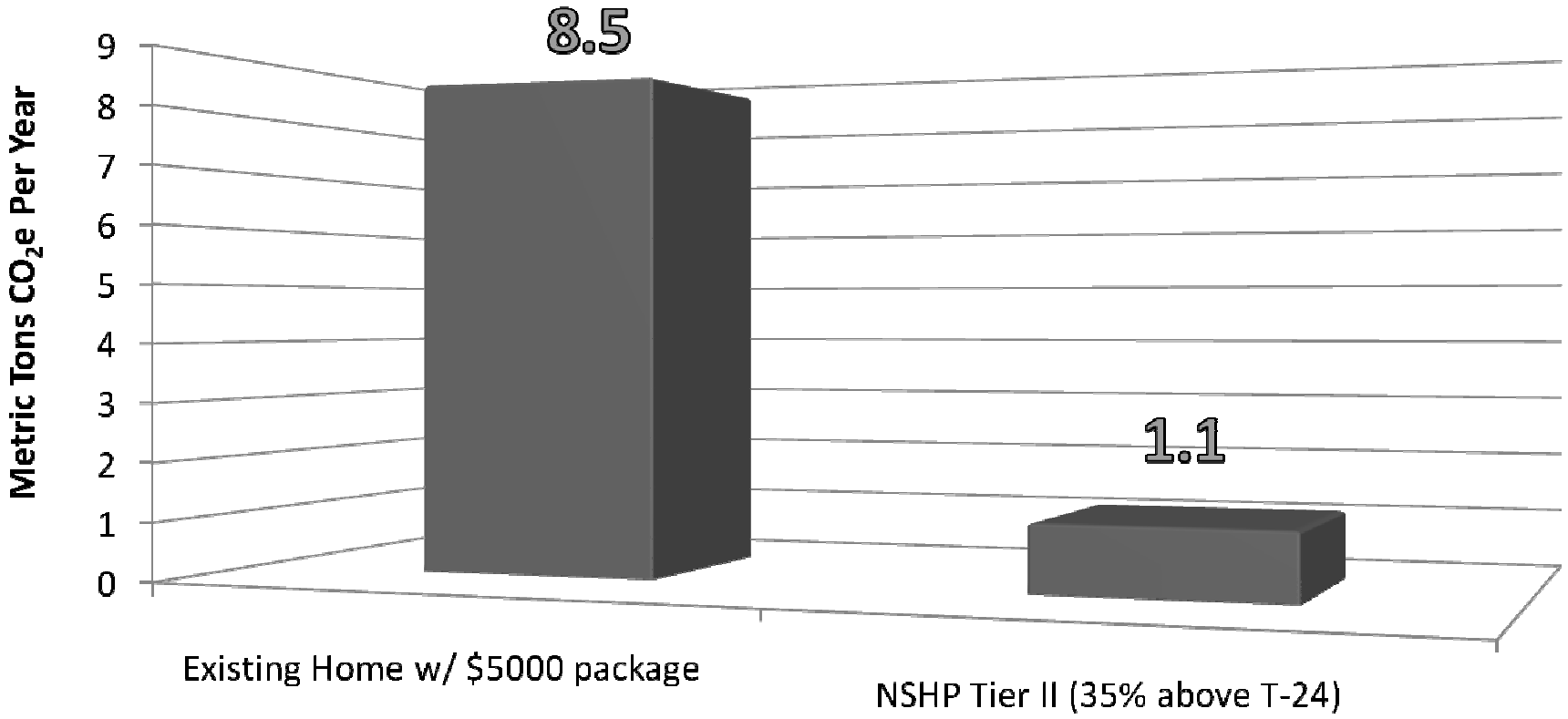
Sacramento Average—Climate Zone 12



Impact of Retrofit Energy Features on Single Family GHG



GHG Savings Potential



Upgrade Existing Home = $5,000
$588/ton

Marginal Cost of NSHP Tier II = $5,000
$5,500/ton

Upgrading existing residential is 5 to 10 times more cost effective than money spent improving the energy efficiency of new homes

BIA/SC Summary

- **Residential new construction decreased total energy use 24% below 1990 per Title 24**

- **Residential new construction 0.12% total GHG emissions**

  - Regulating RNC will not significantly impact GHG

- **Reducing GHG from residential sector requires increasing efficiency of existing stock**

  - More cost effective to reduce GHG from existing housing