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## California Building Policy

### Towards a Climate-Friendly Built Environment

Co-Authored Presentation

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California Environmental Protection Agency

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### Towards a Climate-Friendly Built Environment

- Climate Change Challenge
- Current Programs and Policies
- Strategies for GHG Emission Reductions
- Vision for a Low Carbon Future

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# Climate Change Challenge

## California's GHG Reduction Targets (June 2005)



- 2010: Reduce to 2000 levels, (60 MMT, 11% below BAU)
- 2020: Reduce to 1990 levels, (173 MMT, 28% below BAU)
- 2050: Reduce 80% below 1990 levels.

We're not doing this alone!

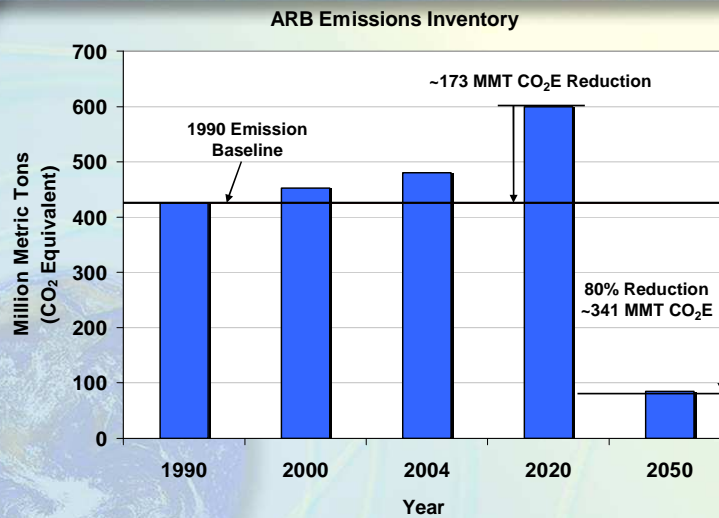


Climate Action Team coordinates State's overall climate policy

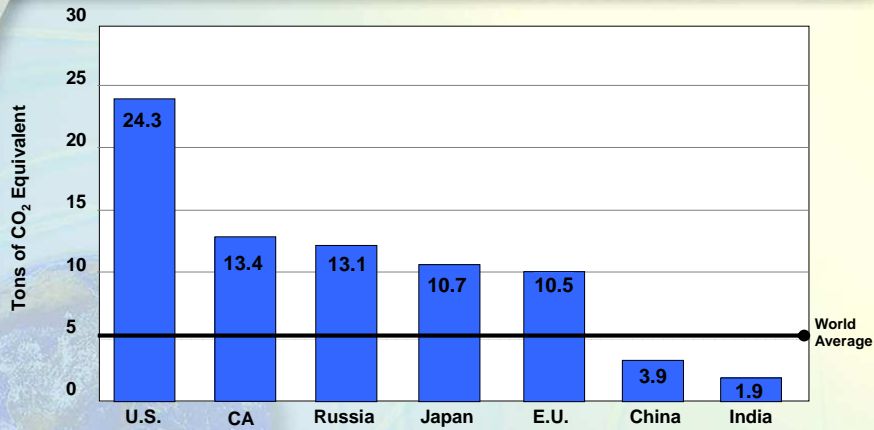
## California Global Warming Solutions Act of 2006 (Assembly Bill 32)



## Magnitude of the Challenge



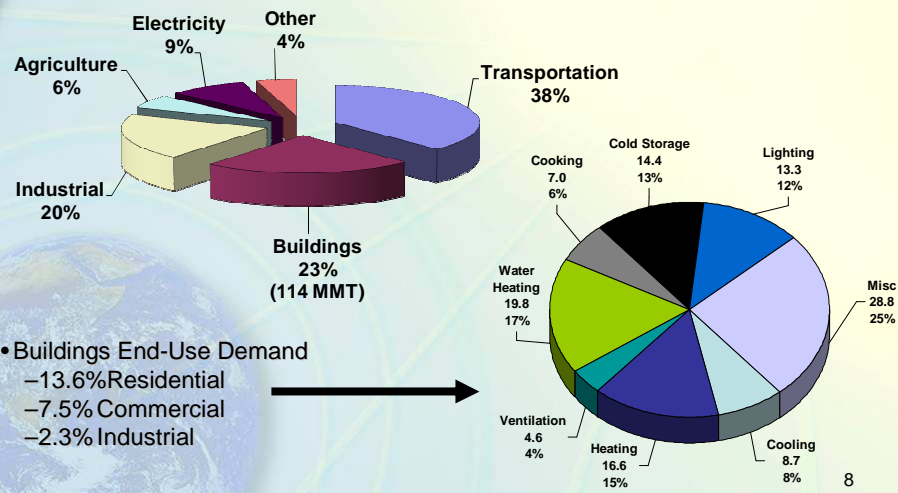
## GHG Emissions Per Person 2001-2002\*



\* Climate Analysis indicators Tool (CAIT US Version 1.0, CAIT version 4.0), World Resources Institute (2007), data includes CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub> with out-of-state electricity generation for California

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## California 2004 GHG Emissions (484 MMT CO<sub>2</sub>E)



Source: California Air Resources Board

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## Current Programs and Policies

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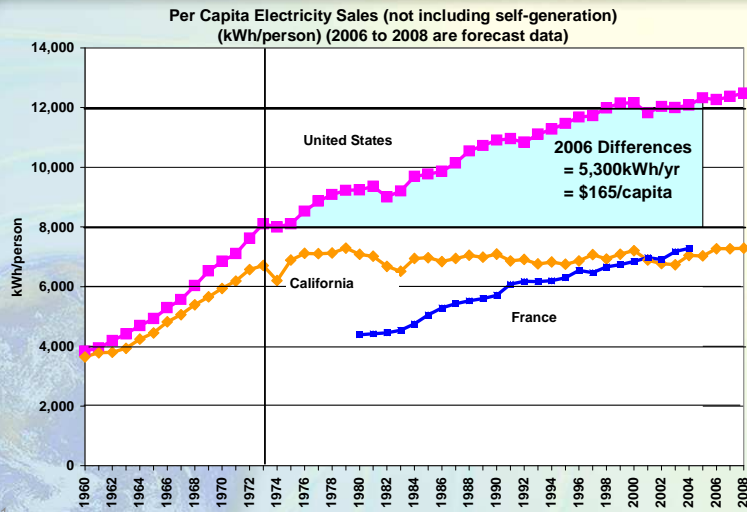
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## Energy Efficiency Policies

- Building Codes and Standards
  - Appliance Standards
  - Building Design & Construction
- Research and Development
  - Public Interest Energy Research
  - \$80 million/year
- Utility Programs
  - Design and Technical Assistance
  - Rebates
  - Education

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## California Per Capita Electricity Sales

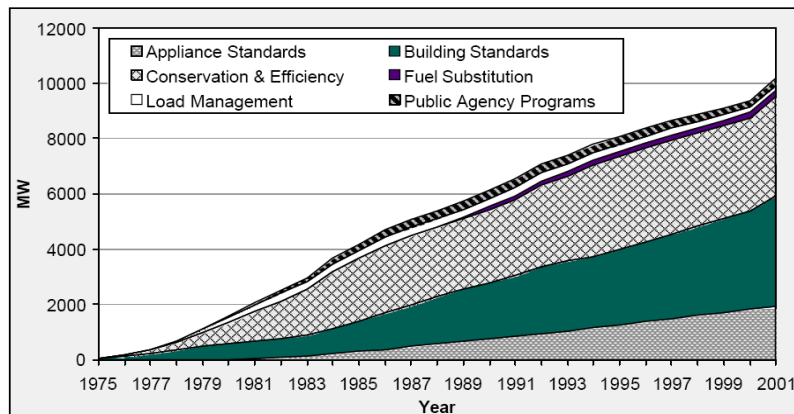


Source: California Energy Commission

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## Savings from Energy Efficiency Programs and Standards

MW Savings from Programs Begun Prior to 2001



Efficiency programs and standards have contributed equally to achieving significant peak demand savings over the past 26 years.  
Source: California Energy Commission

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## Current Renewable Energy Policies

- Renewable Portfolio Standard (RPS)
  - 20% Renewable Energy Supplied by Utilities
- California Solar Initiative (CSI)
  - “Zero Energy” New Homes
  - 3,000 MW of solar photovoltaic installations
- Solar Water Heating and Efficiency Act of 2007
  - 200,000 solar water heating systems

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## Green Building Initiative

- Reduce Electricity Usage by 20% by 2015
  - State Buildings
  - Commercial
  - Residential
- Retrofit, Build, Maintain, and Operate the most energy and resource efficient buildings
- Leadership in Energy and Environmental Design (LEED™) Certification for All New and Existing State Buildings
- Implement cost-effective efficiency measures and distributed generation technologies
- Encourage schools, cities, counties and others to do the same



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## Strategies for GHG Emission Reductions

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## An Aggressive Scenario to Reduce Energy Emissions

- Double Building Standards
- Triple Energy Efficiency Programs
- Increase Incentives for Solar Photovoltaics
- Two Million Solar Water Heating Systems
- 33% Renewable Energy Supplied by Utilities
- Encourage Combined Heat and Power (CHP)
- Zero Net Energy New Construction
  - Residential
  - Commercial
  - Schools

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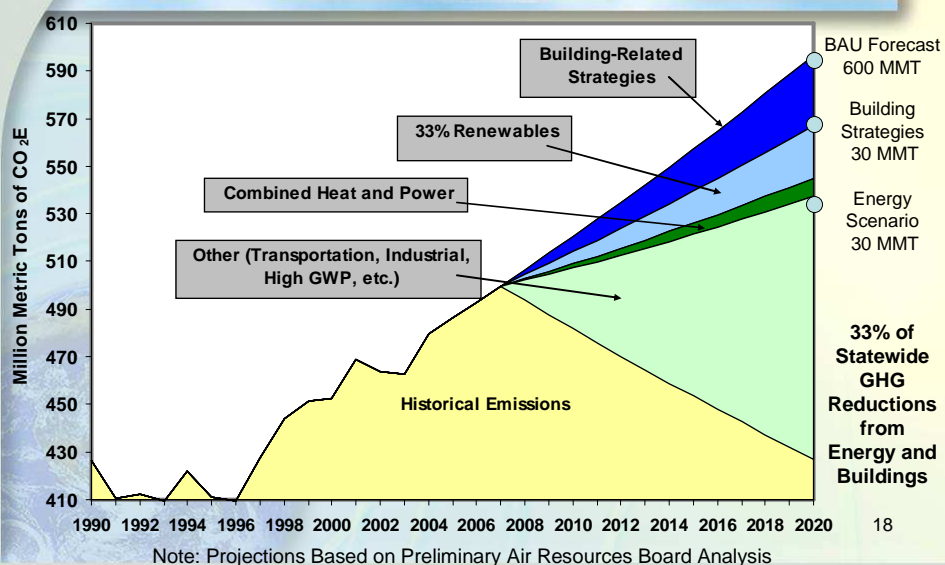


## Green Building Strategies to Achieve Additional GHG Savings

- California Green Building Code
- Targets to Exceed Code
  - LEED™
  - Collaborative for High Performance Schools (CHPS)
  - Green Point Rated/ LEED™ for Homes
- Existing Building Efficiency Upgrades
- 3<sup>rd</sup> Party Verification
- GHG Reporting

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## One Possible Aggressive Scenario to Achieve Maximum GHG Reductions



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## **Vision for a Low Carbon Built-Environment**

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## **Vision for a Low Carbon Built-Environment**

- Voluntary “Reach” Standard for Codes
- Emerging Technologies
- 100% Renewable Energy Supplied by Utilities
- Zero Net Energy Existing Buildings
- Green Buildings are Standard Practice
- Green Communities
- Behavior Change

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