

# Greening the Built Environment ... **with Building Codes**

National Association of Counties  
Annual Conference

July 13, 2008

# BCAP — Building Codes Assistance Project

- Non-profit advocacy group based in D.C. since 1994
- A joint project of the Alliance to Save Energy, the National Resource Defense Council, and the American Council for an Energy Efficient Economy
- Provide resources, education & advocacy assistance for the adoption, implementation, & advancement of effective energy codes



# Topics to Cover:

- Role of energy codes in “greening” the built environment
  - ENERGY savings
  - Economic savings
  - Setting the baseline
- Taking action
  - Local code adoptions and upgrades
  - Barriers vs Best practices

# Impact of Buildings

- Building energy consumption is about **40%** of total energy use in the US  
**70%** of total U.S. electricity consumption
- Buildings are the nation's **largest source of global warming pollution** cause **40%** of CO<sub>2</sub> emissions



The average home emits twice as much ghg as the average car

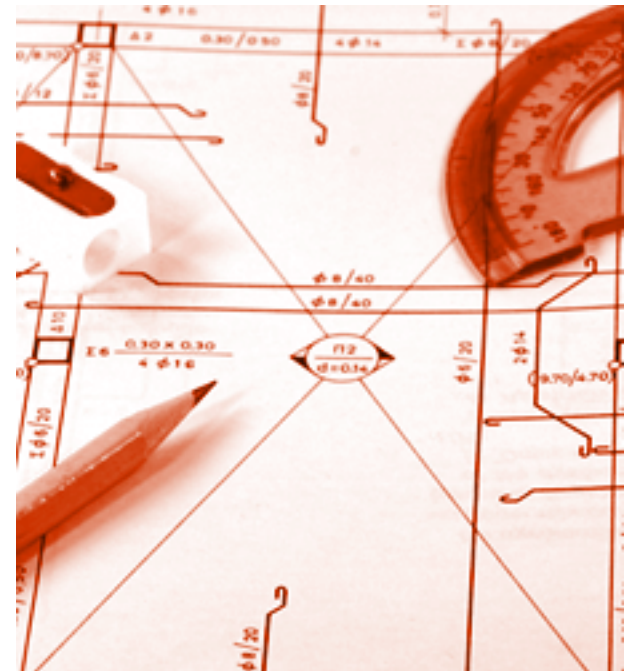
In 2004, 2+ million housing units permitted in US (NAHB)



# New Buildings...

*One of the most important opportunities for reducing energy use & costs*

A new building can be energy-efficient from the start, or a lost opportunity that remains for the next 30-50 years or more



# Codes are critical to achieving savings in buildings

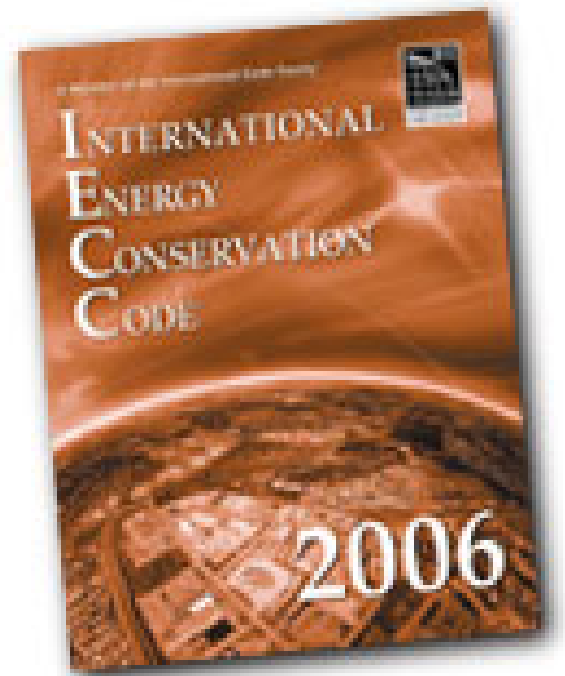
- **Efficient buildings**

- Reduce stress on power grid and natural gas supplies
- Improve air quality and public health
- Reduce global warming
- Save consumers money



# The National Model Energy Code – IECC

A Required Minimum Level of  
Energy Efficiency In New  
Residential and Commercial  
Construction



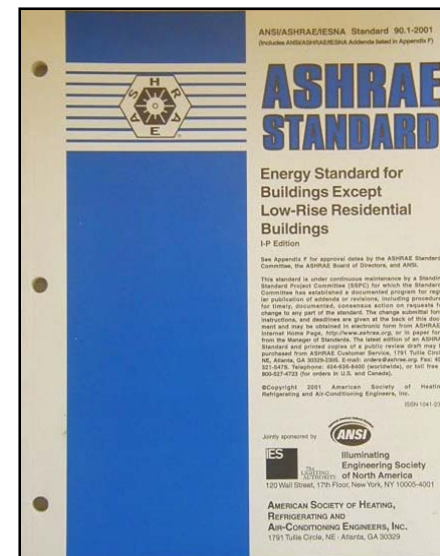
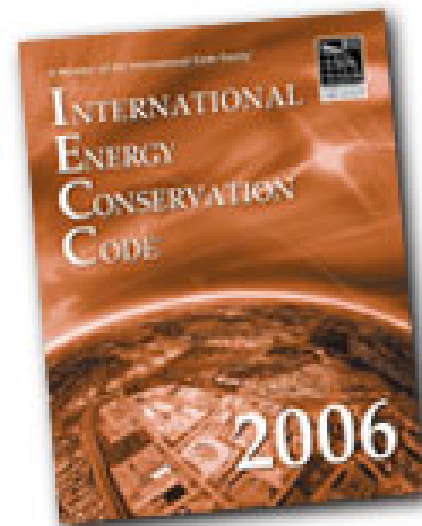
# Commercial Building Compliance

## IECC

Chapter 5 Can Be  
Used to Demonstrate  
Compliance

## ASHRAE

Chapter 5 of the  
IECC References  
ASHRAE 90.1-2004  
as an option to  
Demonstrate  
Compliance



# IECC part of the International Family of Codes

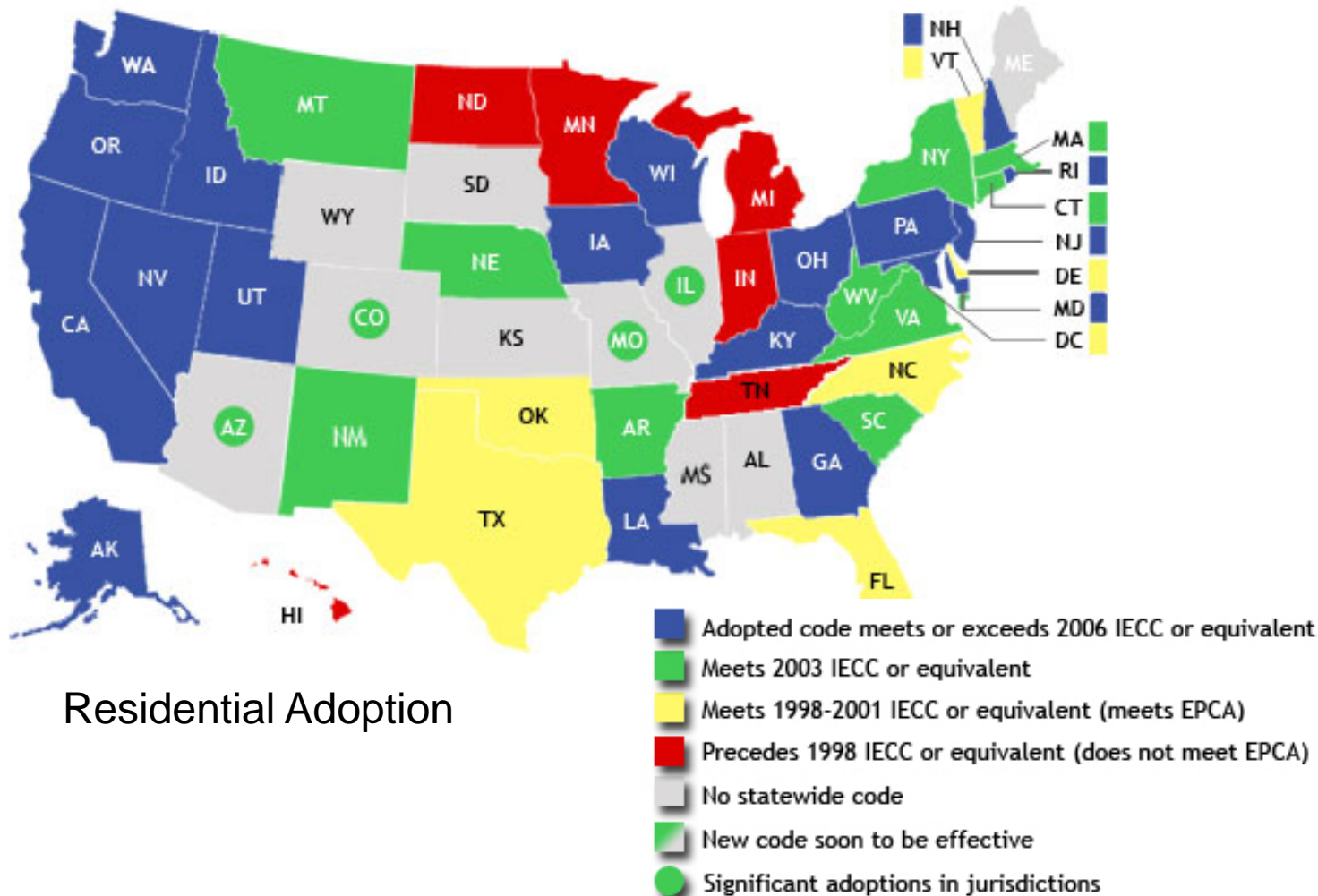


The International Energy Conservation Code (IECC) – updated every 3 years; part of a family of building codes which include plumbing, zoning, and electric codes.

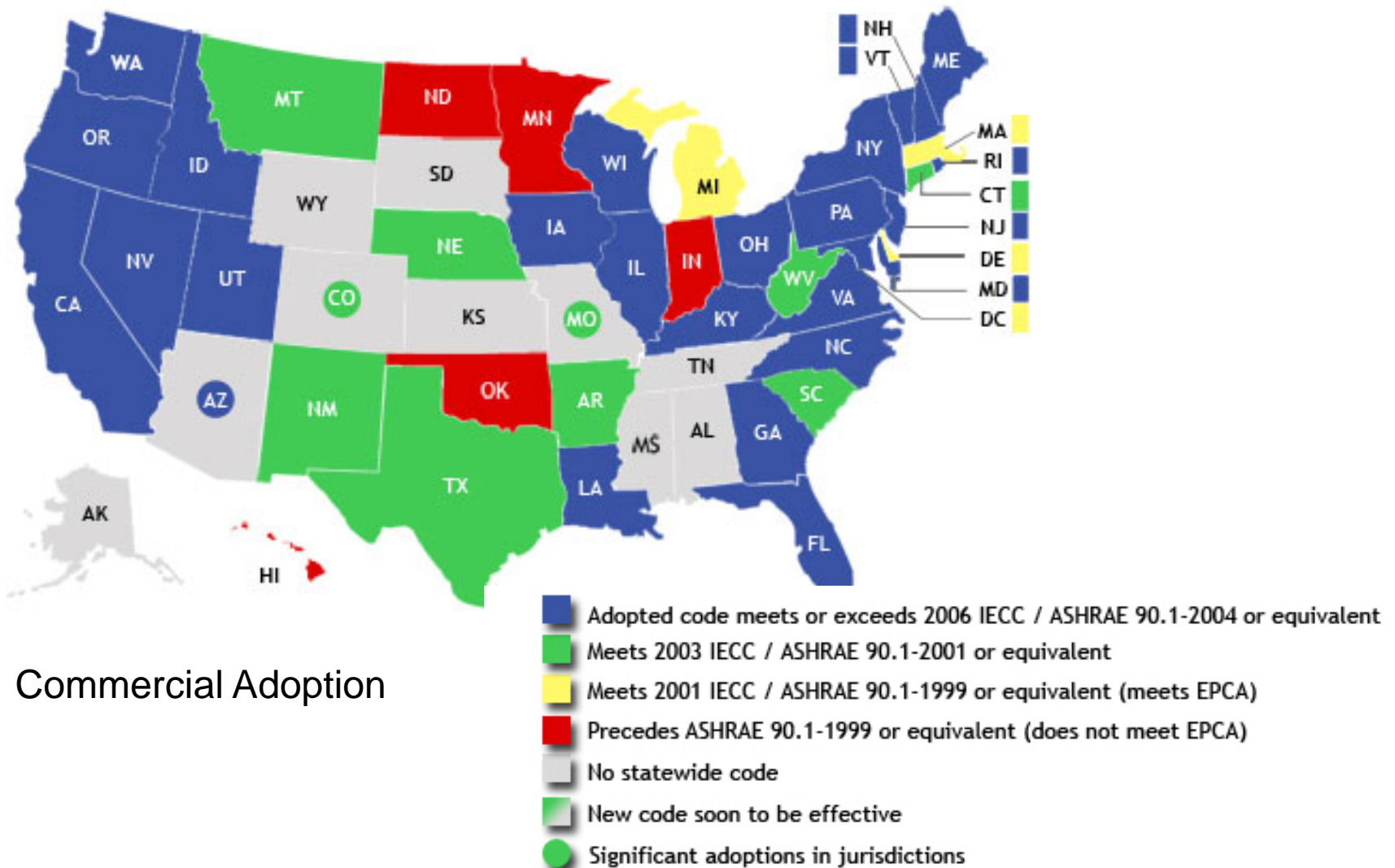
**Coordinated family of International Codes**

Updates decided by committee and voted on by ICC members

# State Decision-making: review & adoption of codes



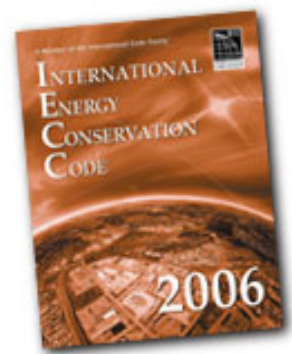
# State Decision-making: review & adoption of codes



# Role served by Energy Codes

1. Affect ALL new buildings
2. Establish a minimum energy efficiency level
3. Establish a foundation for *energy* and *green* programs:
  - Energy Star Homes(15-30% better),
  - LEED homes and commercial buildings (14% better),
  - ASHRAE Standard 189 (27%-30% better)
  - Building America/ federal tax incentive (30%-50%/50% better), and
  - net-zero energy buildings

**AIA** – “Vision 2010” *50% minimum reduction in consumption of fossil fuels used to construct and operate buildings by 2010*



# National Code Improvement

A 30% strengthening of the 2009 residential energy code would produce energy savings of around 4,604 trillion BTUs nationwide by 2020

- Equal to approximately 268 million metric tons of carbon dioxide
- Equal to the annual energy output of 99 baseload power plants
- Saving homeowners \$37,991 Million dollars (assuming no increase in energy prices)



# Municipal/County Level – Primary/Secondary Code Adoption

Possible

## Opportunity:

- Adoption
  - Enforcement
  - Local
- Require local adoption & enforcement
- Allow jurisdictions to set mandatory limits beyond the state energy code
- (could even incentivize stronger requirements)

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# Local Building Department Level – Enforcement

## Possible Barriers:

- Education for builders and design professionals
- Training on requirements and inspection for code officials
- Resources – technical, checklists, compliance software
- Staff
- \$\$
- No directive to save energy

# Recommendations:

## BASICS:

- ✓ Establish review cycle every 3 years to update codes – have savings goals
- ✓ Establish state-wide code
- ✓ Fund builder education
- ✓ Fund code official training



# Recommendations:

## Do More:

- ✓ Adopt 2006 IECC and look at state/local-level improvements
- ✓ Adopt ASHRAE 90.1-2007 and get ready for 90.1-2010
- ✓ Influence the IECC development process
  - ✓ Provide direction for counties, cities and code officials
  - ✓ Process is for ALL interested parties



# Thank you

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