

EESI Briefing: Energy Codes

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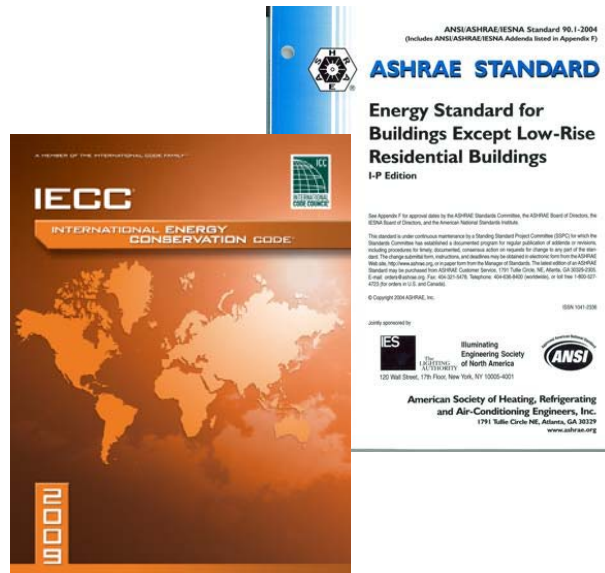


BCAP – Building Codes Assistance Project

Organized in 1994 to assist states in adopting and implementing building energy codes

- Joint initiative of
 - Alliance to Save Energy
 - Natural Resources Defense Council
 - American Council for an Energy Efficient Economy
- Deliver:
 - Coordination and direct assistance on behalf of U.S. Department of Energy
 - Policy and technical support
 - Tools and resources

What are energy codes?



Energy codes are the minimum standards for energy efficiency in new and renovated residential and commercial buildings.

- Baseline energy performance of all buildings
- Part of overall building codes adopted by state and local governments
- Energy codes establish the foundation for energy and green building programs: ENERGY STAR, LEED, ASHRAE Standard 189, Building America, Energy Incentive, and Net-zero energy buildings.

International Energy Conservation Code (IECC)



- Updated every 3 years; incorporates current technologies, costs, and practices
- Part of the International Family of Codes
- 2012 IECC is the most current

Examples of Energy Code Criteria



Wood-burning fireplaces must have gasketed doors



A home with a forced-air furnace heating system must have a programmable thermostat

Energy Efficiency Certificate			
Parent No:			
Address:			
Insulation Ratings		R-Value	
Roof/Ceiling	With attic	0-	
	Without attic	0-	
Walls	Frame	0-	
	Mass	0-	
	Basement	0-	
	Crawl space	0-	
Floors	Over unconditioned space	0-	
	Slab-edge (depth)	0- 1 2 3	
Ducts	Outside conditioned space	0-	
Permeation Ratings		NFRC U-Factor	NFRC SHGC
Opaque doors	0-		
Windows	0-		
Skylights	0-		
Equipment Performance		Efficiency	
Heating system:	HEAT PUMP		
Cooling system:	CONDENSER		
Water Heater/Boiler:	ENERGY STAR		
Builder/Designer:			
Certified by:	Date:		
Adapted Code Edition:			
THIS CERTIFICATE SHALL BE PERMANENTLY POSTED ON OR IN THE ELECTRICAL DISTRIBUTION PANEL AS REQUIRED BY ENERGY/RESIDENTIAL CODES			

An energy efficiency certificate ensuring energy efficiency measures have been made is usually found near the electrical distribution box.

Adoption and Enforcement Process

- Adoption processes differ from state to state, but in most cases codes are adopted through a legislative process, a regulatory process, or a combination of both.

- Most often, enforcement is carried out at by the building departments of a local governments.

- Enforcement SHOULD include: plan review, permitting, testing and inspection. But often does not



Cost/Benefit of Energy Codes



BCAP has estimated that the added cost of moving from current practice to the 2009 IECC for new homes would result in a nationwide weighted average of \$840.77 per new home—which is less than 1% of a new home’s cost.

The annual energy savings per home would be \$243.37 on average, meaning the payback of a home built efficiently would occur in 3.45 years.

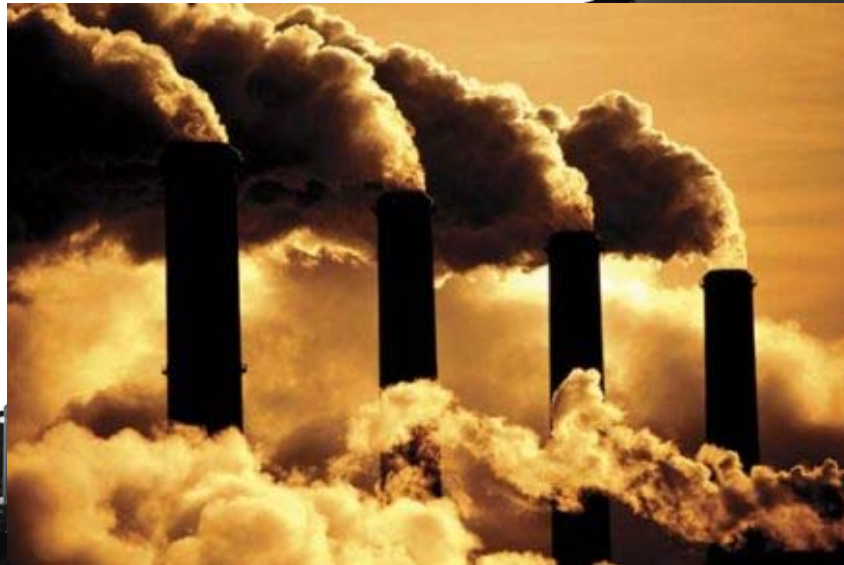
Weighted average incremental cost	Median energy savings per household	Simple payback (in years)	Mortgage payback (Months)
\$840.77	\$243	3.4	~12

Why are Energy Codes Important?

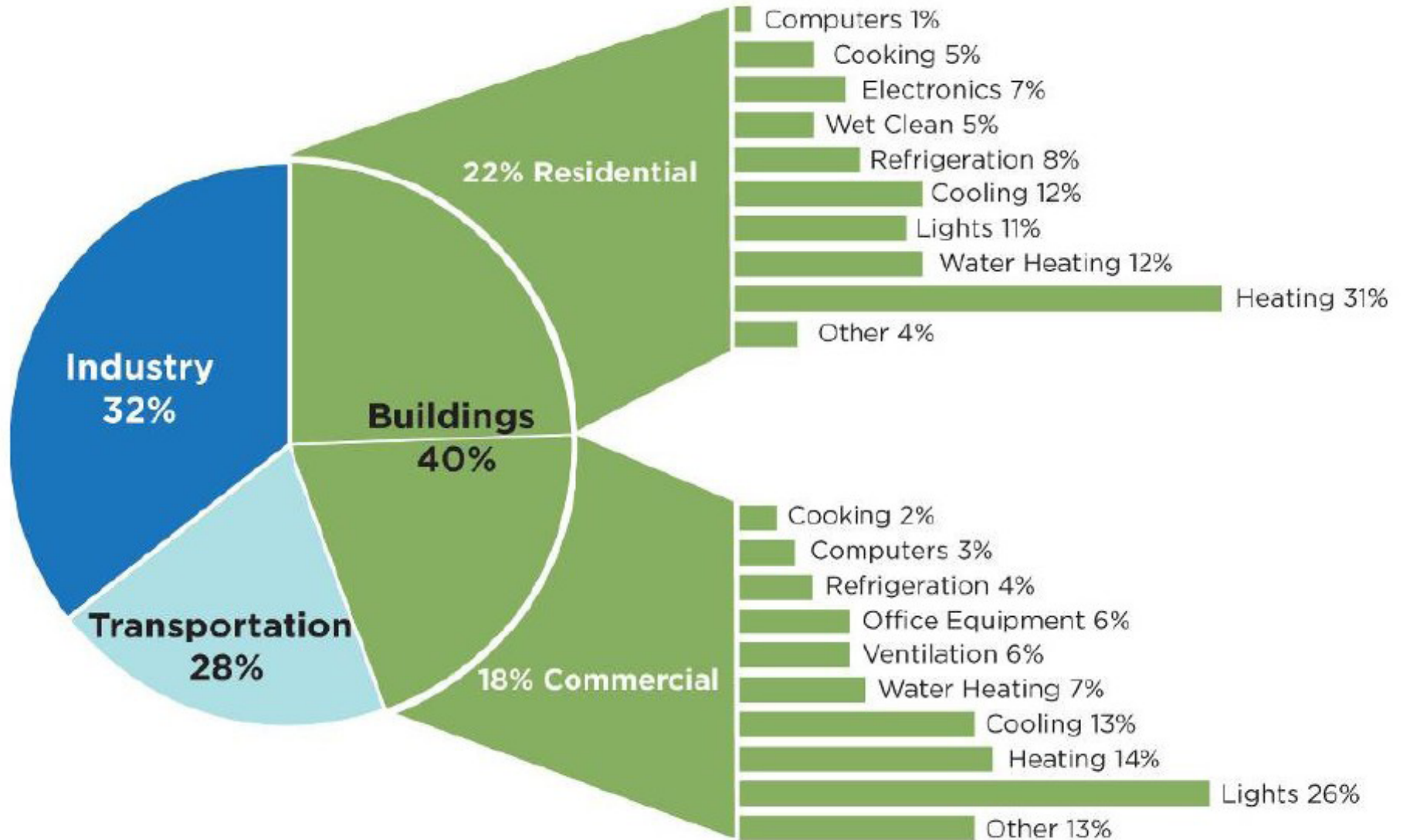
Big Picture Approach: Climate and Energy Efficiency Goals

40-70-40

- 40% of U.S. energy is consumed by the building sector
- 70% of U.S. electricity demand from buildings
- 40% of CO₂ emissions attributable to buildings, representing the nation's largest source of emissions and greatly contributing to pollution and global warming.



How Energy is Used in Homes



Benefits of Energy Codes



1. Reduces stress on power grid and natural gas supplies
 2. Reduces emissions: improved air quality and public health
 3. Reduces monthly energy bills/ consumers save money
 4. Stimulates the economy and create green jobs
 5. Reduces national demand, easing contentious issues
- Improves long-term sustainability (buildings last a long time)

Federal Obligations & Goals

Energy Policy Act of 1992

- States must adopt equivalent of ASHRAE Standard 90.1
- States must adopt International Energy Conservation Code (IECC) – or submit justification for not

American Recovery & Reinvestment Act

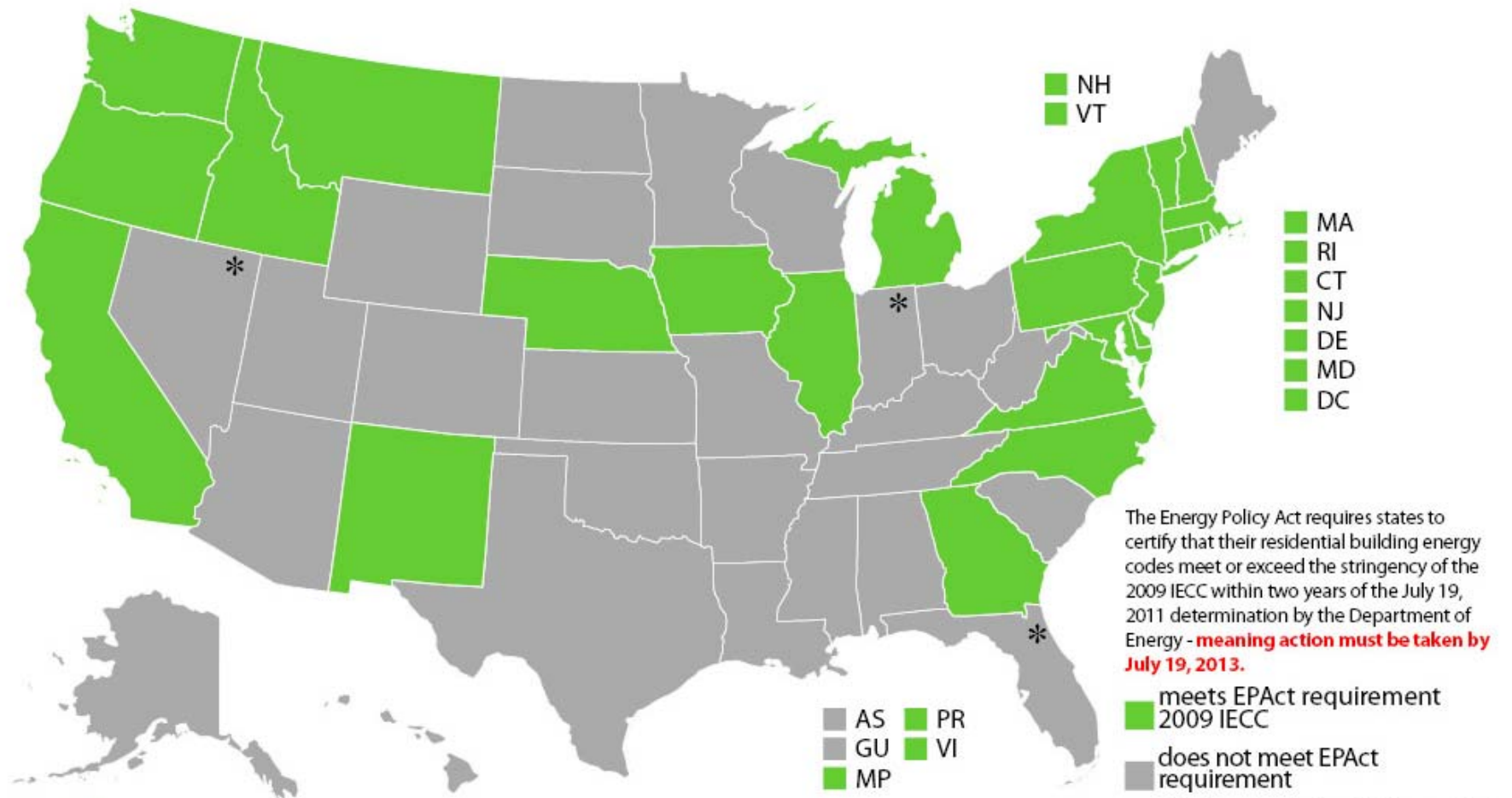
Appropriated \$3.1 billion to DOE's State Energy Program (SEP) that assisted states with building energy efficiency efforts.

- 2009 IECC and 90.1-2007
- 90% Compliance 2017



Energy Policy Act (EPAcT) Compliance Status

FOR RESIDENTIAL BUILDINGS AS OF MARCH 1, 2012



The Energy Policy Act requires states to certify that their residential building energy codes meet or exceed the stringency of the 2009 IECC within two years of the July 19, 2011 determination by the Department of Energy - **meaning action must be taken by July 19, 2013.**

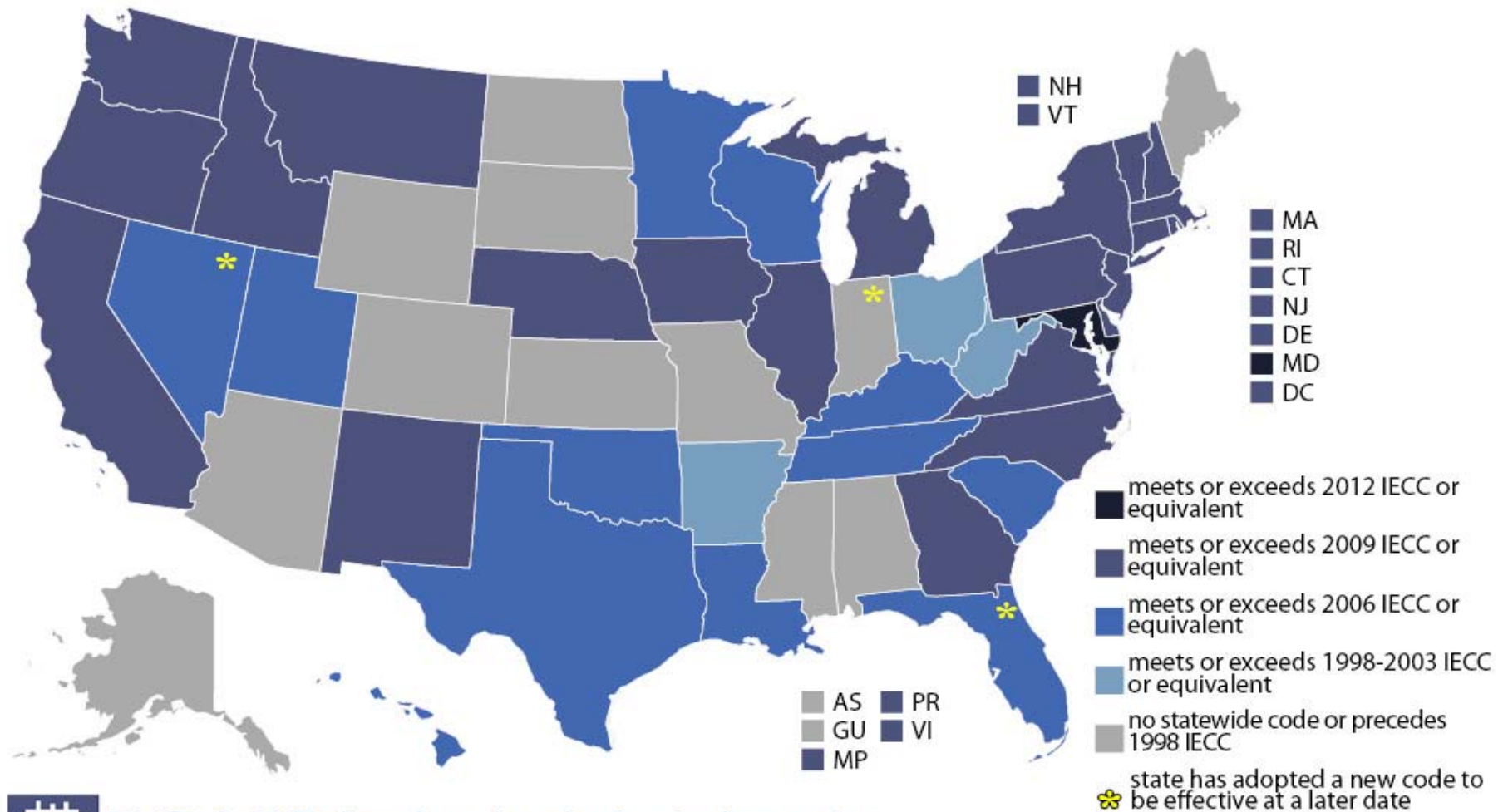
- meets EPAcT requirement 2009 IECC
- does not meet EPAcT requirement

* state has adopted an EPAcT-compliant code effective at a later date

NOTE:
These maps reflect only mandatory statewide codes currently in effect.

Residential State Energy Code Status

AS OF MARCH 1, 2012



BCAP-CU Survey Findings: Consumers Want Better Energy Codes

- The public feels that they have a right to a home that meets minimum energy efficiency standards. (82%)
- The public believes that energy codes help ensure that homeowner and taxpayer dollars are used wisely and efficiently by requiring that new homes will be “built right the first time.” (74%)
- The public agrees that energy codes add to the purchase price of a new home, but effectively lower monthly operating costs. (69%)

Support Code Efforts By...

- Provide resources to state and localities to address challenges, such as training and education, enforcement needs, code books.
- Integrate savings from Energy Codes when crafting legislation for RPS, EERS, or EEPS.
- Vote for legislation that provides for and sustains energy codes such as the SAVE Act.

Thank You!

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