

INSTITUTE FOR  
**Electric Efficiency**

Codes and Standards:  
Opportunities, Benefits, and Issues for Energy Efficiency  
Program Administrators

Adam Cooper/Lisa Wood  
ACEEE Symposium on Market Transformation  
Washington, DC

April 12, 2011

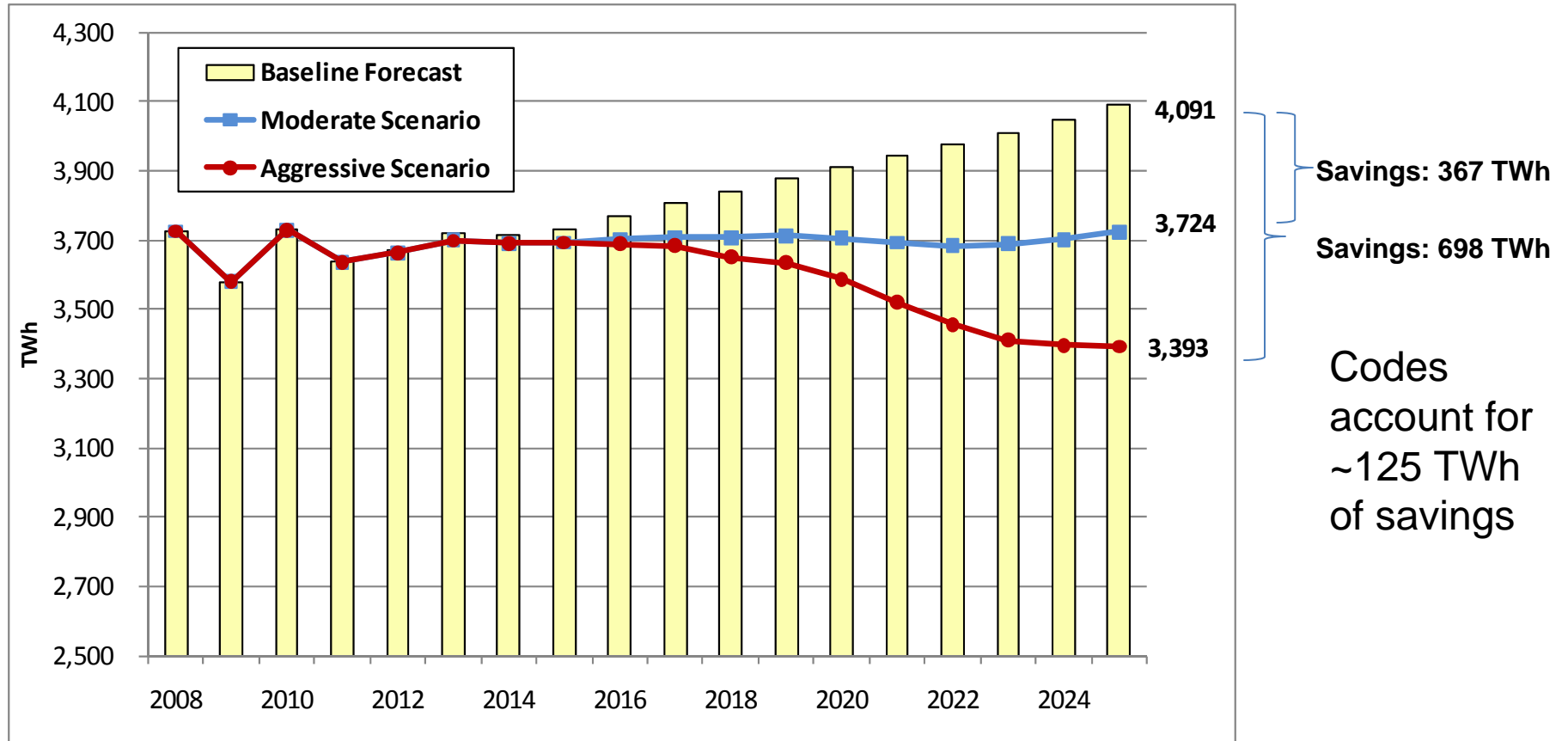
# Codes and Standards, in brief...

- Codes and Standards (C&S) establish minimum efficiency levels for covered buildings and products, respectively
  - C&S can deliver cost-effective energy savings
  - Fair compensation for utility efforts is needed to get utilities engaged
  - ARRA required states to commit to energy code adoption
    - 90% compliance by 2017 (ASHRAE 90.1-2007, IECC 2009)
    - All states made commitment
-

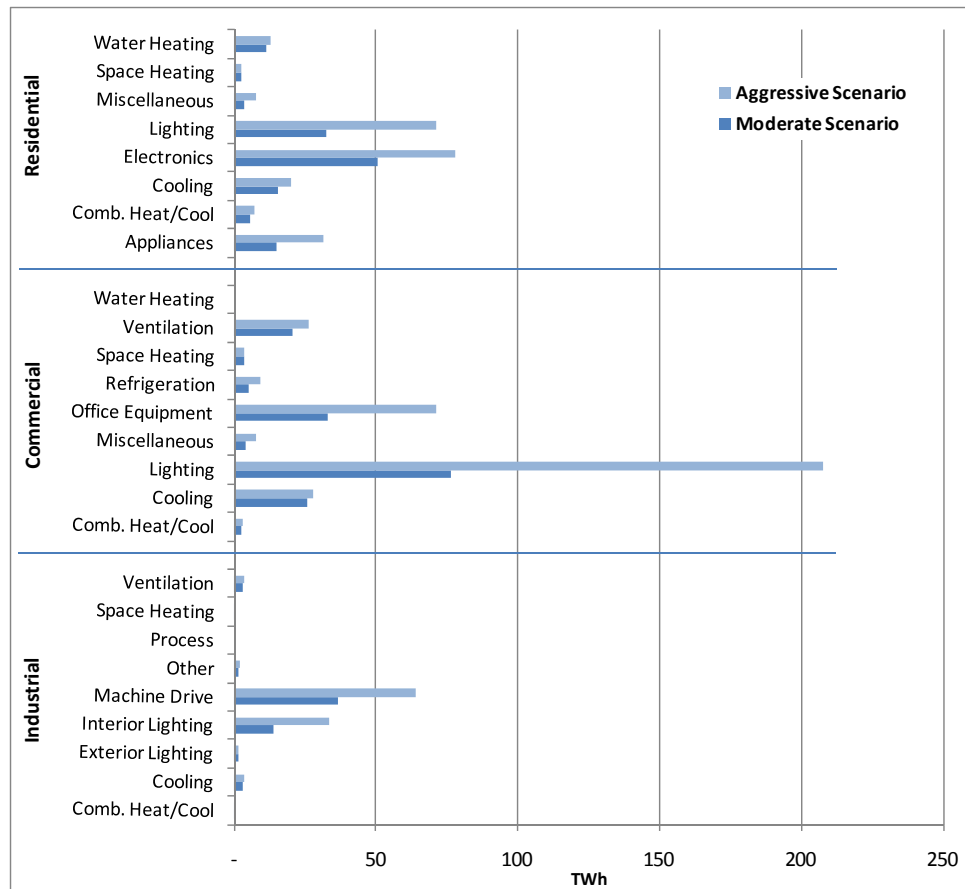
# What does a C&S program do?

- Prepare market actors involved in the design and development of energy efficient buildings and appliances
- Enable market transformation
- Deliver energy efficiency at low cost
- Decrease potential savings of traditional DSM/EE programs

# Codes and standards are difference makers--major savings potential

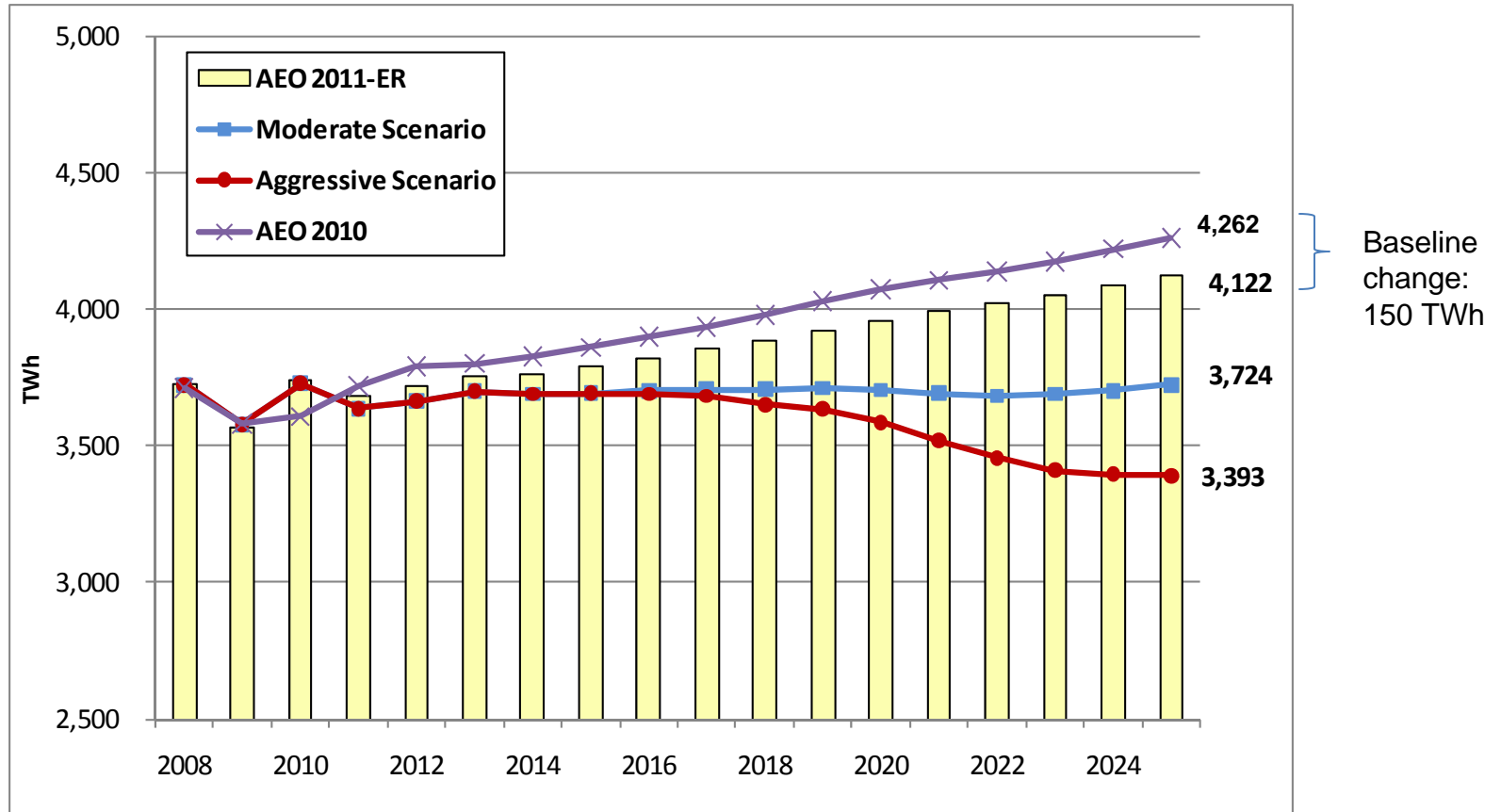


# 2025 Savings by end use, by sector



Savings potential are dominated by commercial lighting, residential electronics, and industrial machine drives

# Baseline shift reflect federal and state C&S activity + economy, etc.

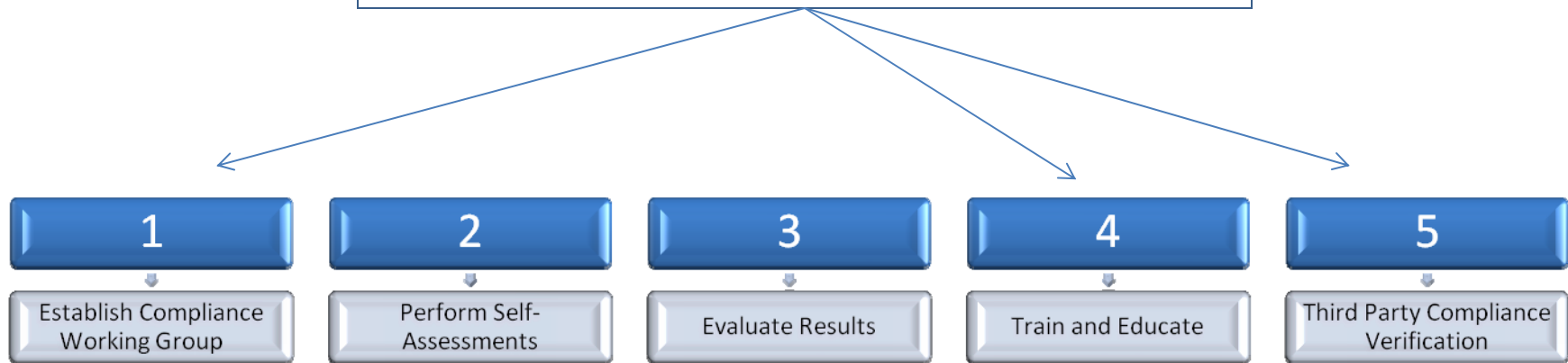


# Potential C&S activities for a PA

- Active engagement during code development and local adoption
- Prepare technical analysis of net benefits related to proposed codes and standards
- Develop test methods for new standards
- Train and educate officials and industry
- Compliance enhancement (compliance working groups, fund third party evaluators)
- Participate in EM&V protocol development
- Develop appliance/equipment standards when not covered by US DOE

# DOE BECP recommended steps to building energy code compliance

## Several Opportunities for Utility Involvement







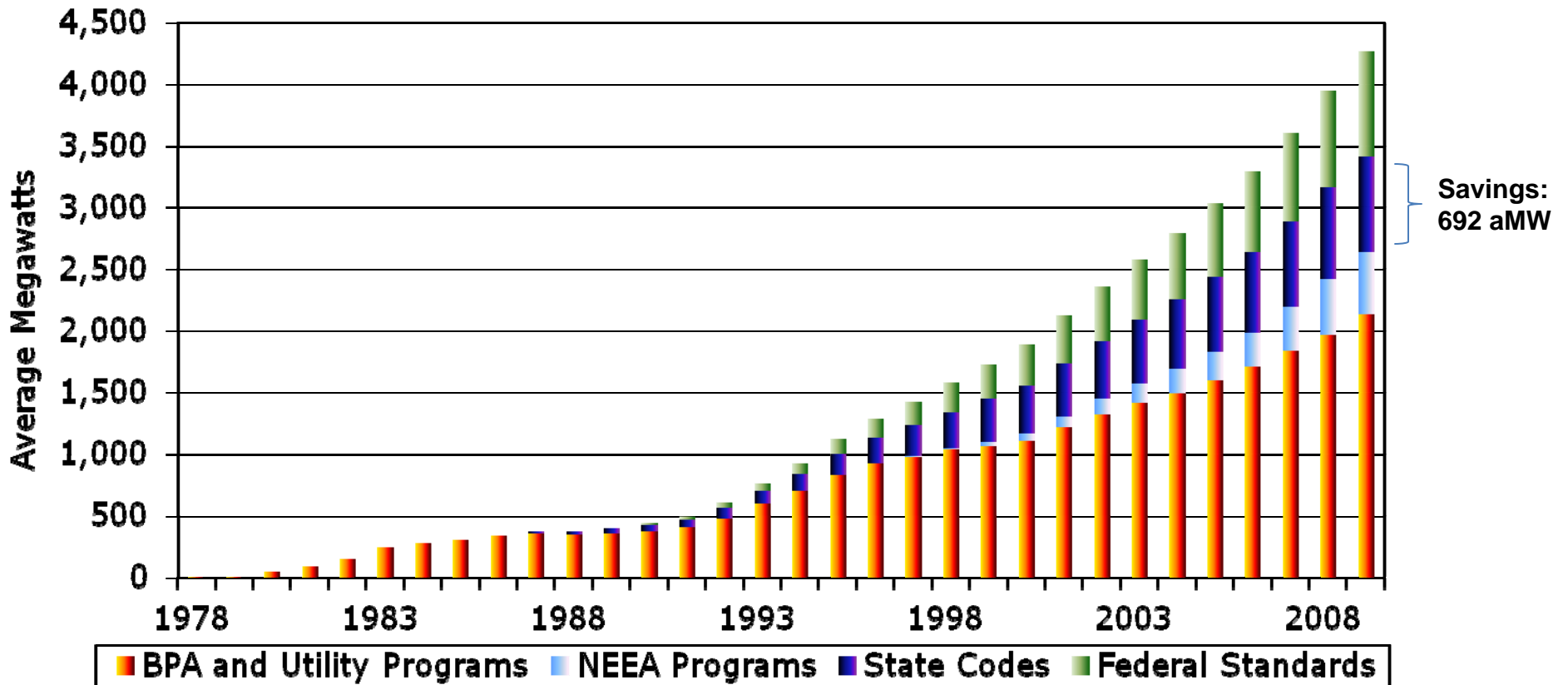
# Success in California

- C&S programs deliver big savings

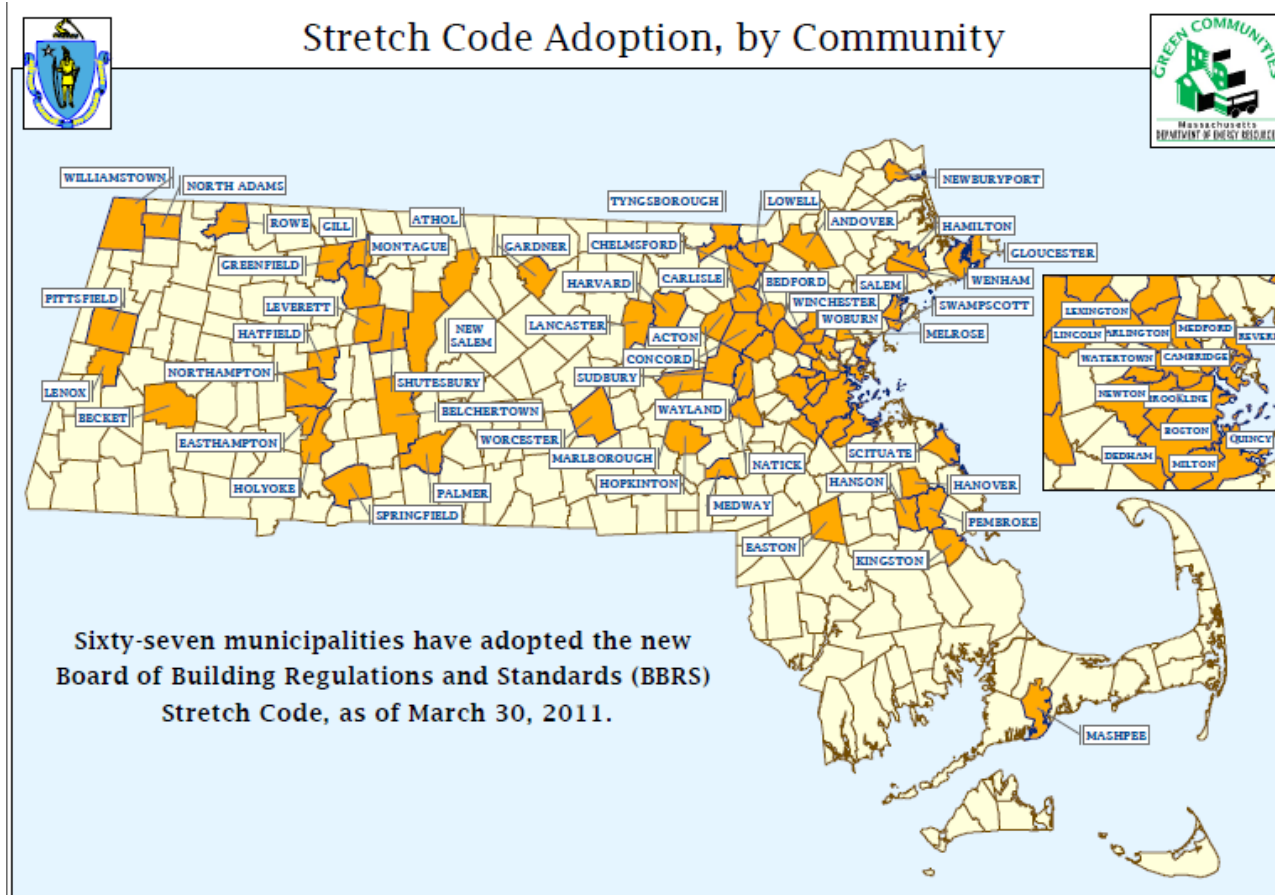
California EE Program Years 2006-2009	Total	C&S Share of Savings
Savings Goals (cumulative, GWh)	8,944	7.7%
EE Portfolio Savings, Evaluated (cumulative, GWh)	7,387	9.3%
C&S Savings, Evaluated (cumulative, GWh)	687	100%

- C&S programs are cost-effective
  - program cost is ~0.5% of total portfolio
- 2 of 3 IOUs plan to increase C&S program funding

# Pacific Northwest annual energy efficiency savings, cumulative



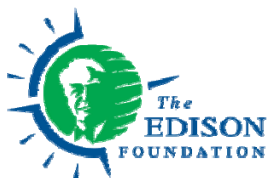
# Promising Massachusetts stretch code



67 communities have adopted stretch code

Stretch code is 20% more energy efficient than base code (IECC 2009, ASHRAE 90.1 2007)

Connecticut is pursuing stretch code via Raised Bill 6544 based on Energy Star



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Source: Massachusetts Executive Office of Energy and Environmental Affairs,  
[http://www.mass.gov/Eoeea/docs/doer/green\\_communities/grant\\_program/stretch\\_code12\\_owns.pdf](http://www.mass.gov/Eoeea/docs/doer/green_communities/grant_program/stretch_code12_owns.pdf)

# It ain't all sunshine and lollipops

- Attribution is important to utilities
  - Need a method to distinguish program effects from other influences
  - High quality EM&V work is neither easy nor inexpensive
  - Time lag between action and impacts; need policy stability to encourage investments
- Assessing compliance is difficult.
  - Definitions and metrics vary
  - Typically measured by local code officials

# Establish a stable regulatory structure to support C&S efforts by utilities

## ■ Three Prevailing Models

### – Prove it and claim it (CA, MA, MN)

- Heavy emphasis on EM&V
- Renewed focus on compliance

Yikes! Legislature may repeal Next Generation Act

### – Support it and get partial credit (AZ)

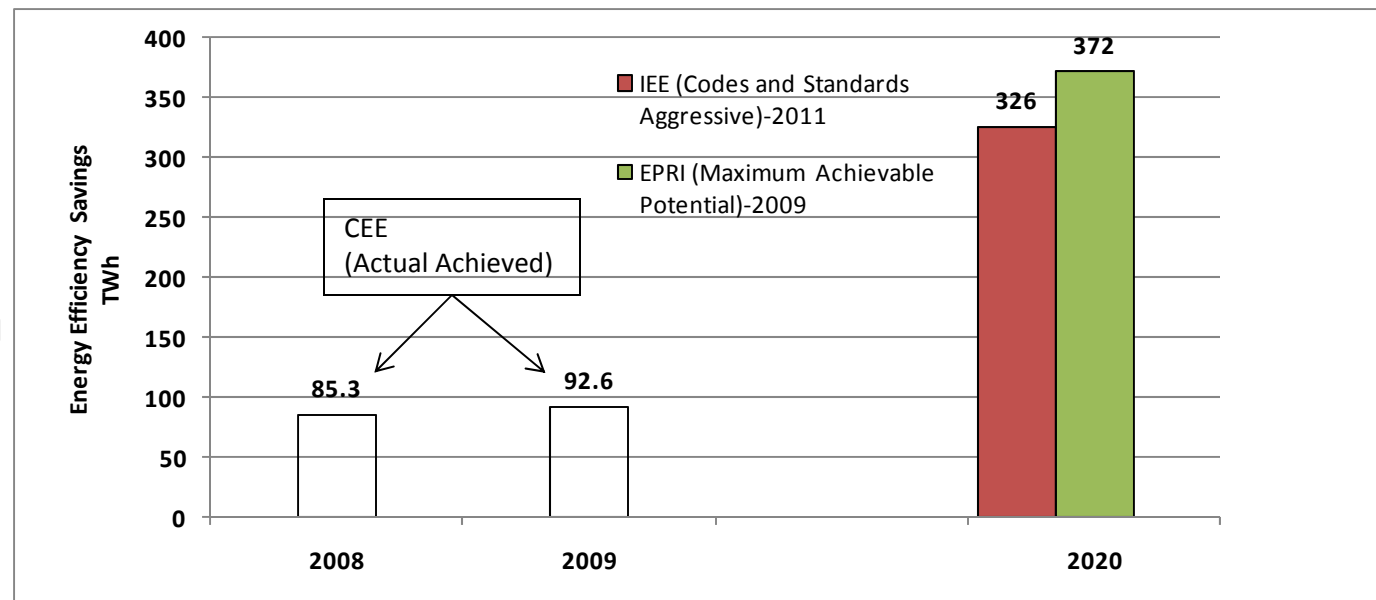
- Simplifies the attribution issue
- Utilities can count up to 1/3 of savings from building energy codes towards AZ EE goals
- Savings based on EM&V (most effort spent here)

# Establish a stable regulatory structure to support C&S efforts by utilities, cont...

- Include it in projections and work together to make it real (Pacific Northwest)
  - Northwest Power & Conservation Council develops Power Plan that includes expected C&S effects
  - NEEA conducts regional and national activities to promote C&S
  - Forecast is adjusted given changes to and effect of C&S
  - Utility goals are adjusted given forecast adjustments

# Codes and standards contribute to overall EE savings

93 TWh represented about 2% of total usage in 2009.



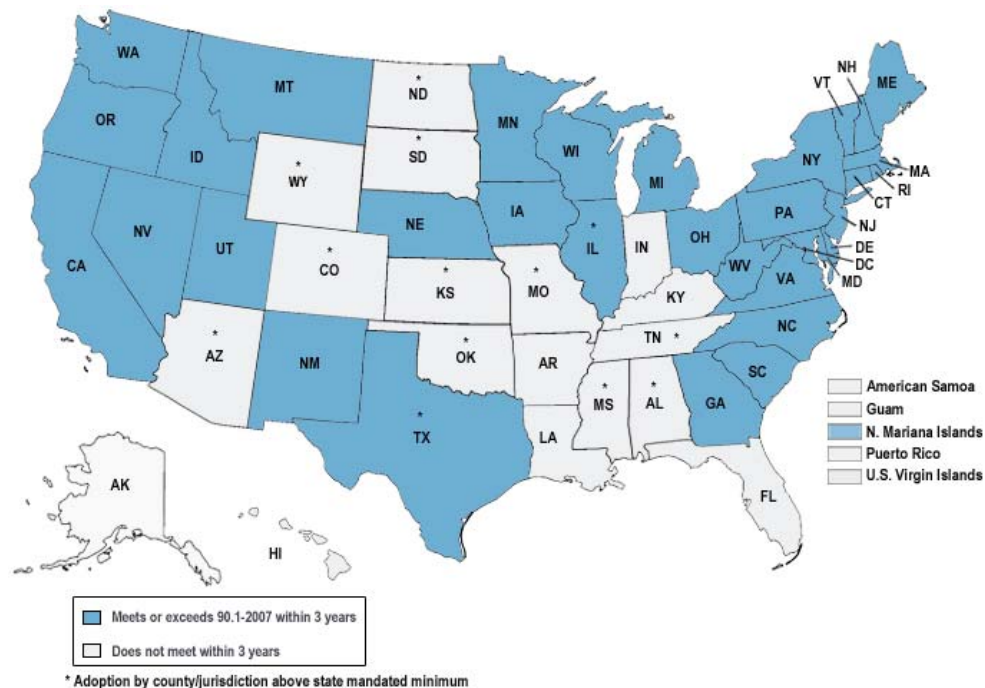


# Halfway there...but miles to go...utilities can help

## Adoption Activity: Commercial

States that are expected to have commercial energy codes meeting or exceeding 90.1-2007 or the 2009 IECC by June 2013

as of December 20, 2010

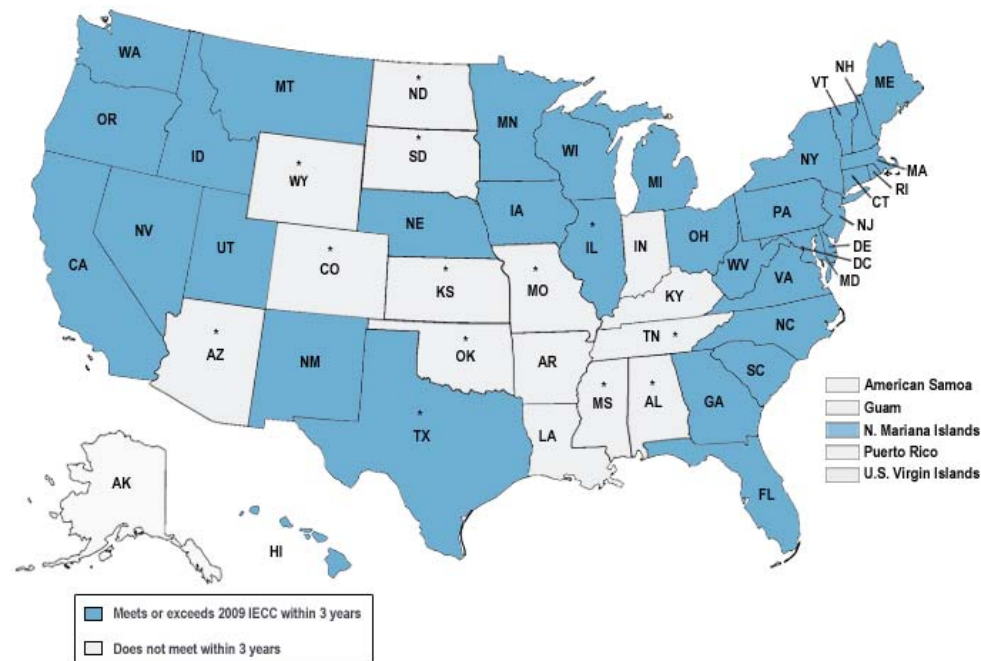


# Halfway there...but miles to go...utilities can help

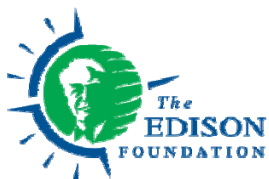
## Adoption Activity: Residential

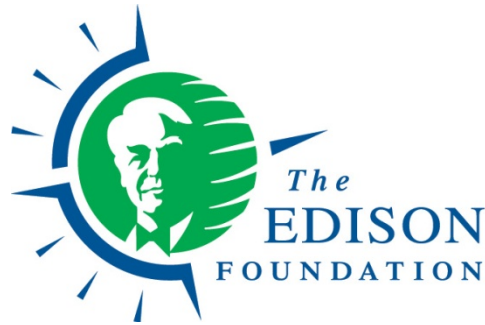
States that are expected to have residential energy codes meeting or exceeding the 2009 IECC by June 2013

as of December 20, 2010



Source: DOE BECP





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