



# **Energy Efficiency Resource Standards: Definitions and State Progress**

IEA Presentation, April 19, 2012

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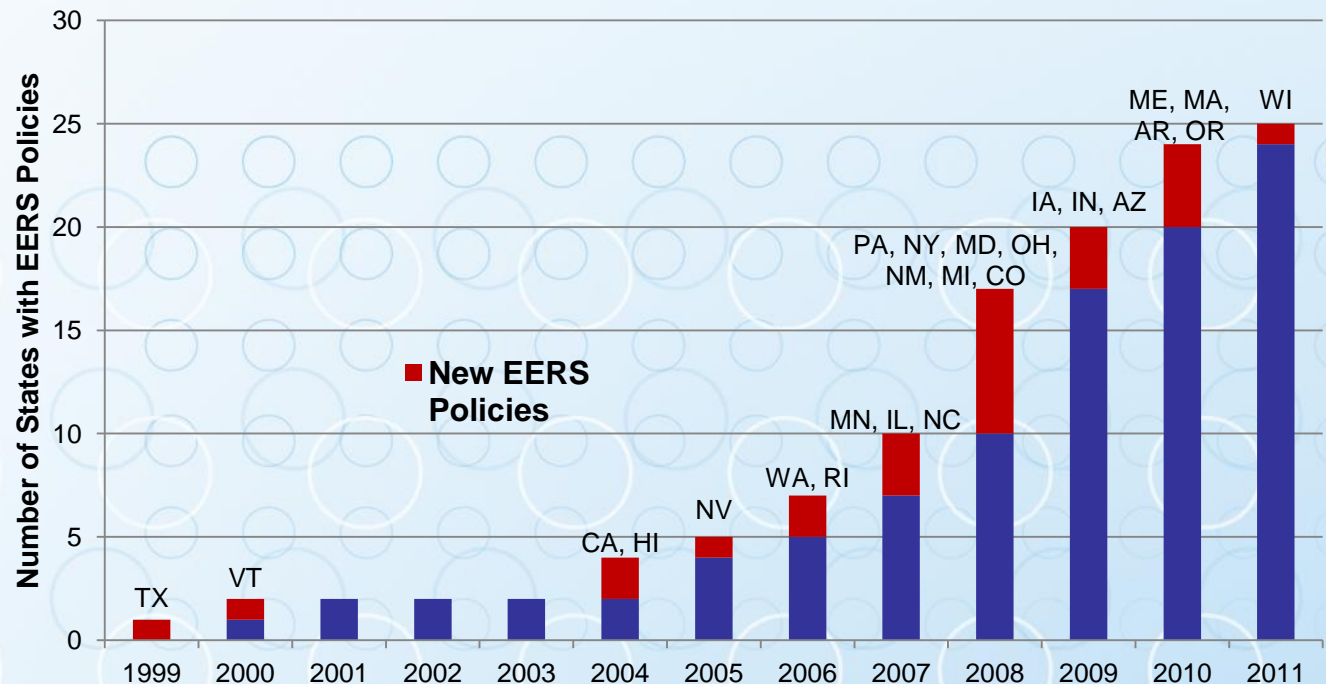
# About ACEEE

- **Nonprofit 501(c)(3) dedicated to advancing energy efficiency through research and dissemination.**
- Established in 1970 – 40-person staff based mostly in Washington D.C.
- Focus on end-use efficiency in industrial, buildings, utilities, and transportation sectors;
- State, national, & local policy development, economic analysis, & behavioral programming;
- Funding sources:
  - Foundations (34%)
  - Federal & State Grants (7%)
  - Specific Contract work (21%)
  - Conferences and Publications (34%)
  - Contributions and Other (4%)

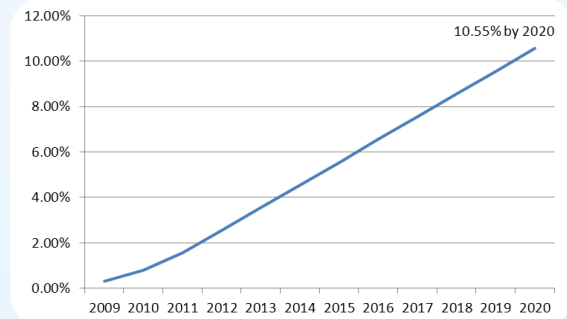
# What is an Energy Efficiency Resource Standard?

- An EERS (aka EEPS, EES, CES) sets multi-year (3+) electric or natural gas efficiency targets (e.g. 2% incremental savings per year or 20% cumulative savings by 2020), measured against a baseline of retail sales.
- EERS policies accelerate and expand the scale of energy savings achieved through utility and related energy efficiency programs.

Twenty-five states currently have an EERS in place – three states have EERS policies pending (DE), expired (CT), or un-funded (FL)



# EERS in Practice



Michigan Retail Electricity Sales in 2009 = 106,899 GWh

- EERS target = 0.50% of sales in 2010 = 534.5 GWh

Michigan Energy Efficiency Savings from Utility Programs in 2010 = 793.5 GWh (0.74% of 2009 sales)

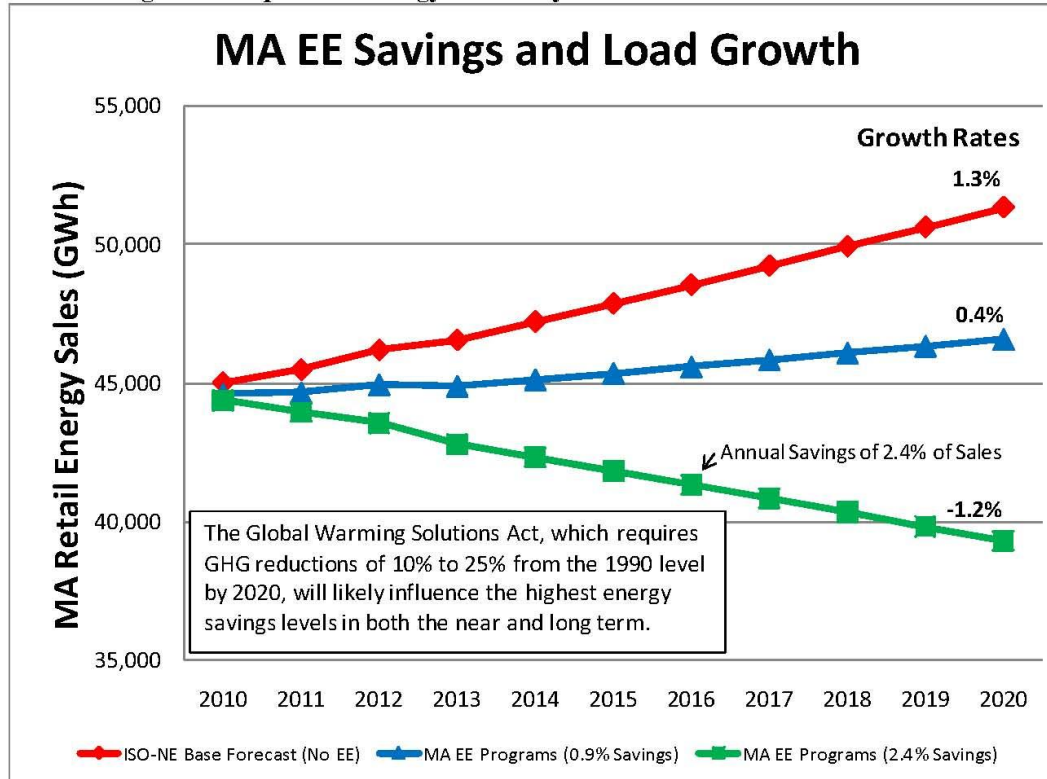
- Programs save energy for commercial, industrial, and residential customers

Michigan EERS Target in 2011 = 0.50%, or 742 GWh savings from new EE measures in 2011

- Cumulative Targets for 2009, 2010, 2011 = 1602 GWh, or 1.5% of 2009 sales

# Bending the Curve

Figure 1: Impacts of Energy Efficiency on Retail Sales and Load Growth



Prepared by the EEAC Consultants based on the ISO-NE forecast, historical data on MA programs, the 2010-2012 plans, and 2.4% annual savings for 2012-2020.

Source: Horowitz et al. 2010. *Programs and Strategies to Achieve All Available Cost-Effective Energy Efficiency: Early Report on Bending the Curve in Massachusetts*. ACEEE Summer Study in Buildings Proceedings.

# Key Distinctions of EERS Policies

## Statewide EERS

- Legislated approach
  - Prescribed levels of savings (NY, MD, PA, MI, OH, IL)
  - All cost-effective EE loading order (MA, RI)
- Codified by utility commissions
  - Sets specific targets – All utilities must meet same savings requirements (as % of sales)

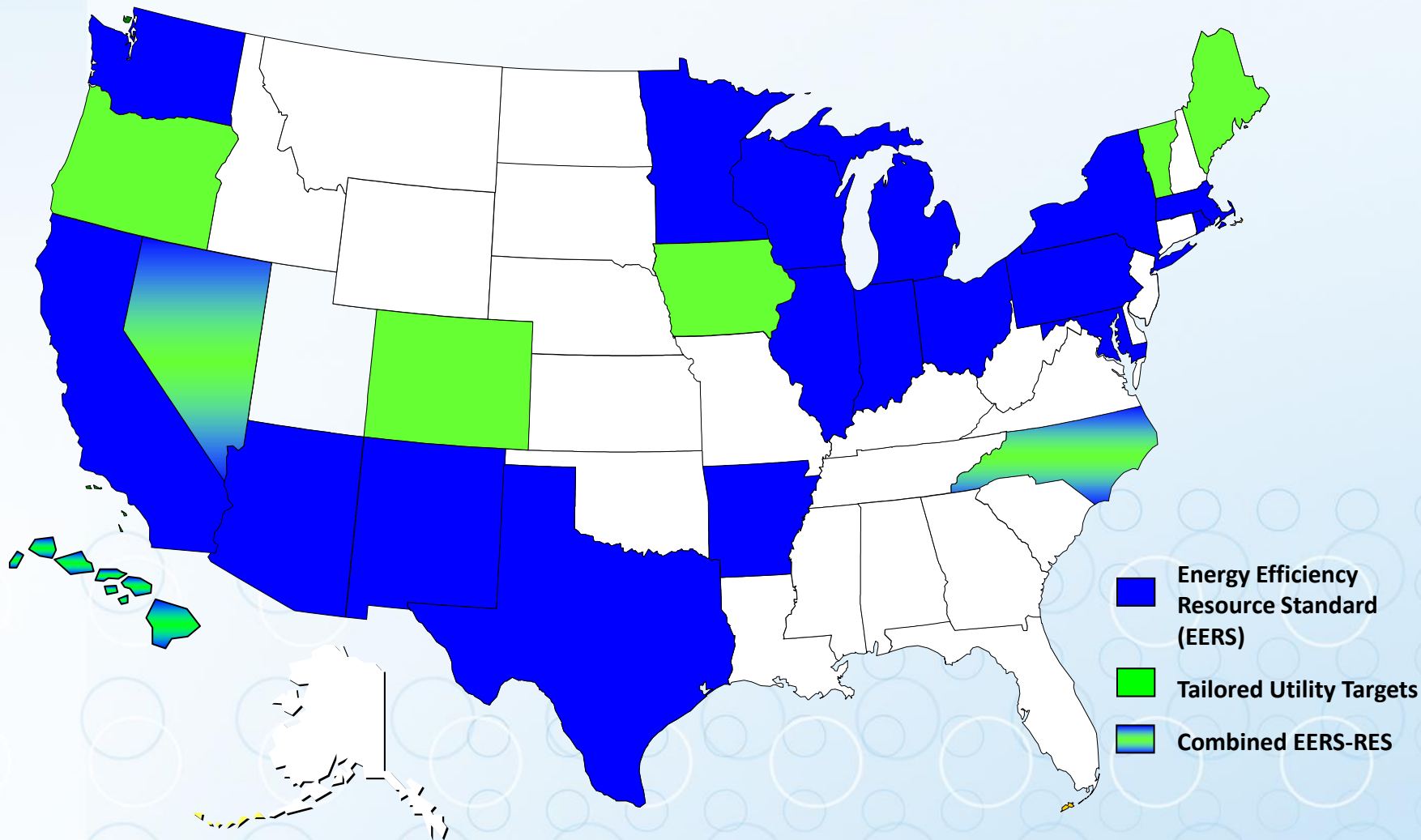
## Tailored Utility Targets

- Law or regulation calls for the establishment of multi-year (3 year+) specific energy savings targets.
- Utilities (IA, CO) or third party administrators (OR, ME, VT) set their own targets
- Targets are approved by commissions

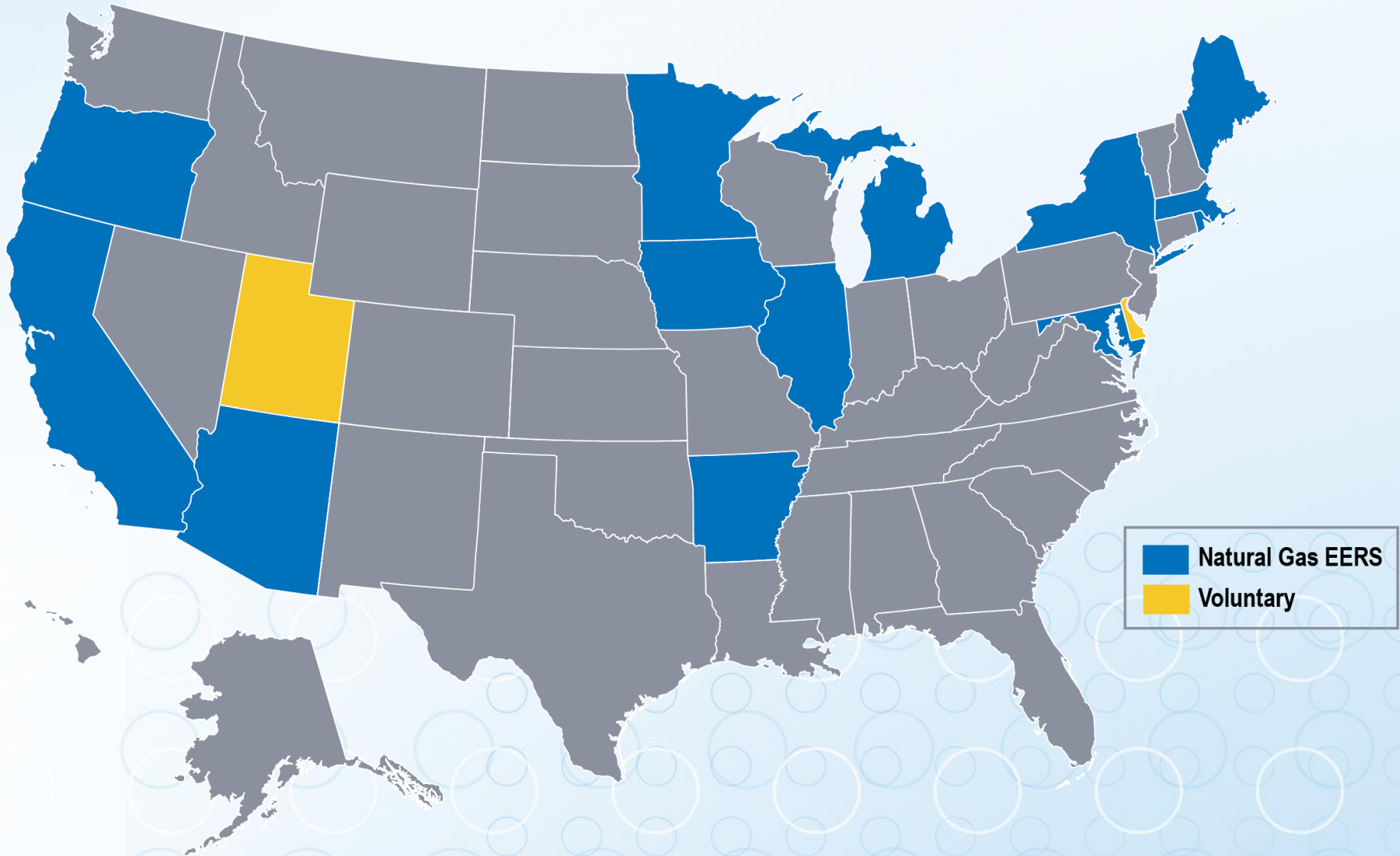
## Combined EERS – RPS

- Energy efficiency accepted as an eligible resource in state renewable energy standards (RPS)
- Energy efficiency is measured on a cumulative, rather than annual, incremental basis

# Electric EERS Policy Approaches by State



# Natural Gas EERS Policies





# Upside/Downside to EERS Policy Distinctions

## Statewide EERS

- Broader coverage
- Generally have longer-term targets
- Ignores variation in utility's experience with EE program implementation
- Legislators not experts in EE potential or goal setting

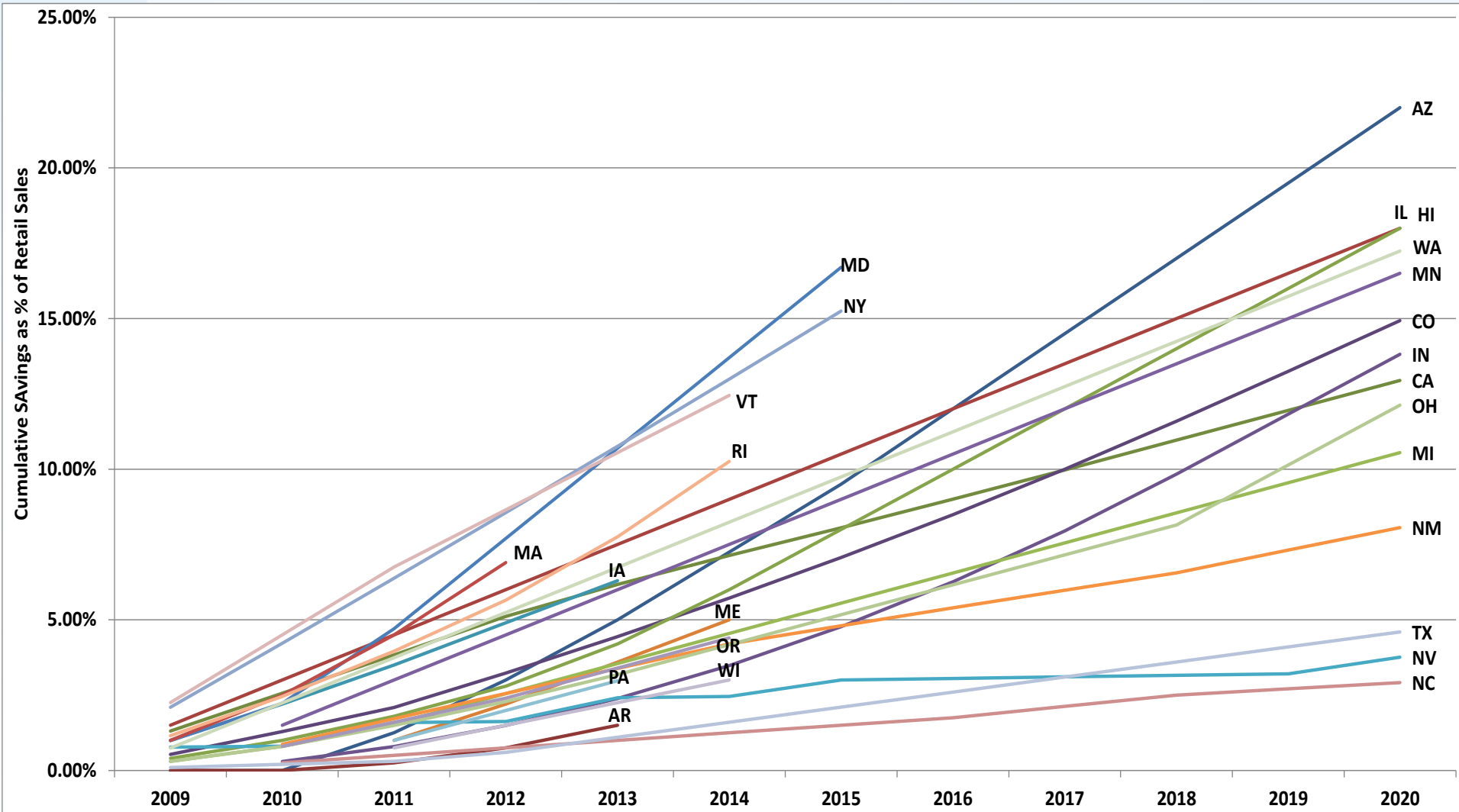
## Tailored Utility Targets

- Provides utilities or third-party admins with some flexibility in target-setting process
- Targets can be adjusted more easily
- Less coverage
- Lacks visibility

## Combined EERS – RPS

- Acknowledges EE as a utility resource
- Can be a stepping stone to full EERS
- EE is commonly limited to a fraction of overall standard, leading to low targets

# State EERS Targets



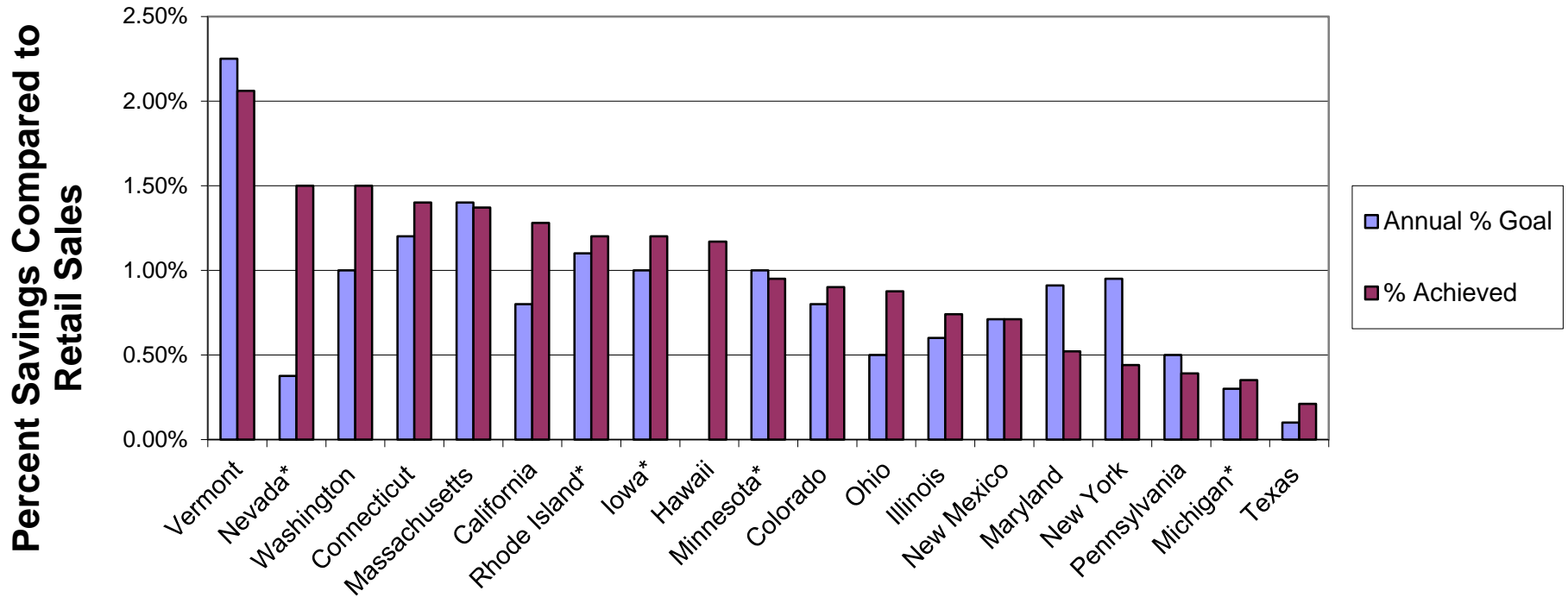
Eleven geographically dispersed states have committed to long-term targets to achieve over 10% cumulative annual savings by 2020

# Cumulative Electricity Savings of State EERS Policies Extrapolated to 2020

State	Cumulative 2020 Target	State	Cumulative 2020 Target
Maryland*	26.70%	Maine*	13.40%
New York*	26.50%	California	12.94%
Massachusetts*	26.10%	Ohio	12.13%
Rhode Island*	25.26%	Michigan	10.55%
Vermont*	23.85%	Oregon*	10.40%
Arizona	22.00%	Pennsylvania*	9.98%
Illinois	18.00%	New Mexico	8.06%
Hawaii*	18.00%	Wisconsin*	7.50%
Washington	17.24%	Arkansas*	6.75%
Minnesota	16.50%	Texas	4.60%
Iowa*	16.10%	Nevada	3.76%
Colorado	14.93%	North Carolina	2.92%
Indiana	13.81%		

\*Savings beginning in 2009 extrapolated out to 2020 based on final year of annual savings required

# Savings vs. Targets in 2010



\*Reference year for savings is 2009

# Observations

- EERS Drives savings for states of all types
- The benefits of EERS outweigh costs
- Clear and fair regulation is necessary
- All parties must be committed to meeting targets
- Ramping-up savings requires programmatic excellence

# EERS Drives savings for states with and without history of EE programs

## States Experienced with Energy Efficiency

- Washington jumps from 0.6% to ~1.2% savings
- Iowa from 0.8% to ~1.5%
- EERS policies justify higher spending levels on cost-effective EE; “raise the floor” and drive program implementation from utilities historically reluctant to EE offerings

## States Without Existing Energy Efficiency Programs

- Midwestern states such as Michigan, Illinois, Ohio all raising energy savings from negligible to significant levels

# The Benefits of EERS Outweigh Costs

- Programs must undergo cost-effectiveness tests before implementation.
- Rate impact concerns greatly influence discussions on EE programs – often resulting in the reduction of EE program budgets to mitigate rate impacts.
- There is a real need to more fully understand what the rate impacts are, and to manage bill impacts to achieve EE goals with lowest impact on customer
- For customers that participate in EE programs, the bills tend to be reduced, despite increased rates
- Key distinctions: Bills vs. Rates; Participants vs. Non-Participants
- In the case of Massachusetts: EE provides overall system benefits projected to result in net reduction in rates AND bills over long term for ALL customers

# Clear and Fair Regulation is Necessary

- Clarity on critical elements such as eligible technologies, EM&V requirements, and incentives or penalties for compliance and non-compliance
- How to measure savings attributable to EERS comes up as barrier in Ohio and Texas
- Goals must allow time for program approval period (NY)
- Gradual ramp-up period necessary for states new to EE (MD)



# All Parties Must be Committed to Meeting Targets

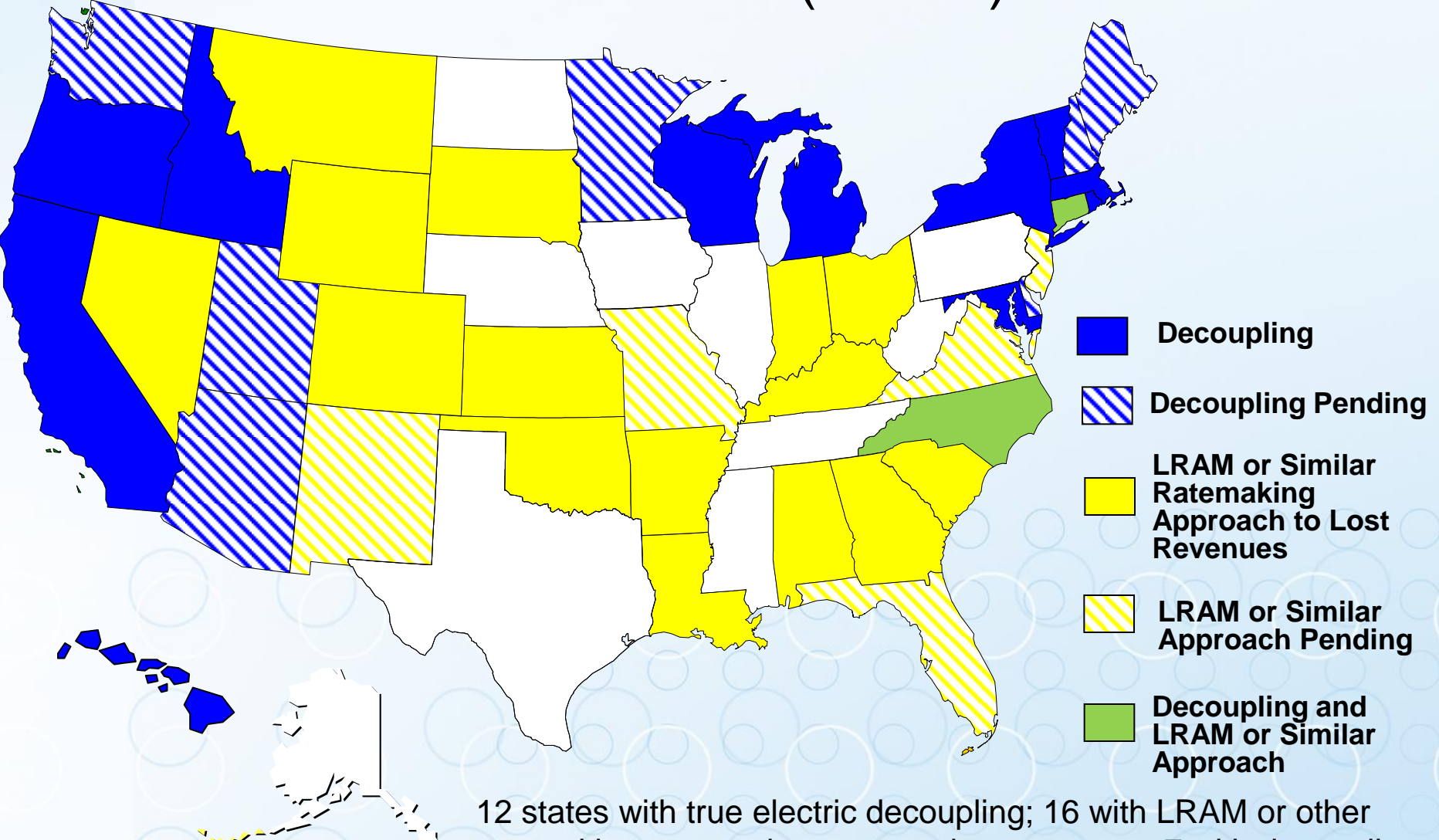
## Utility Commissions

- Enact policies to complement EERS and improve the utility business model for EE
- Use fair cost-effectiveness tests
- Avoid policies that create barriers to EERS success
  - Cost-caps
  - Exit-ramps
  - Opt-out provisions

## Utilities and Program Administrators

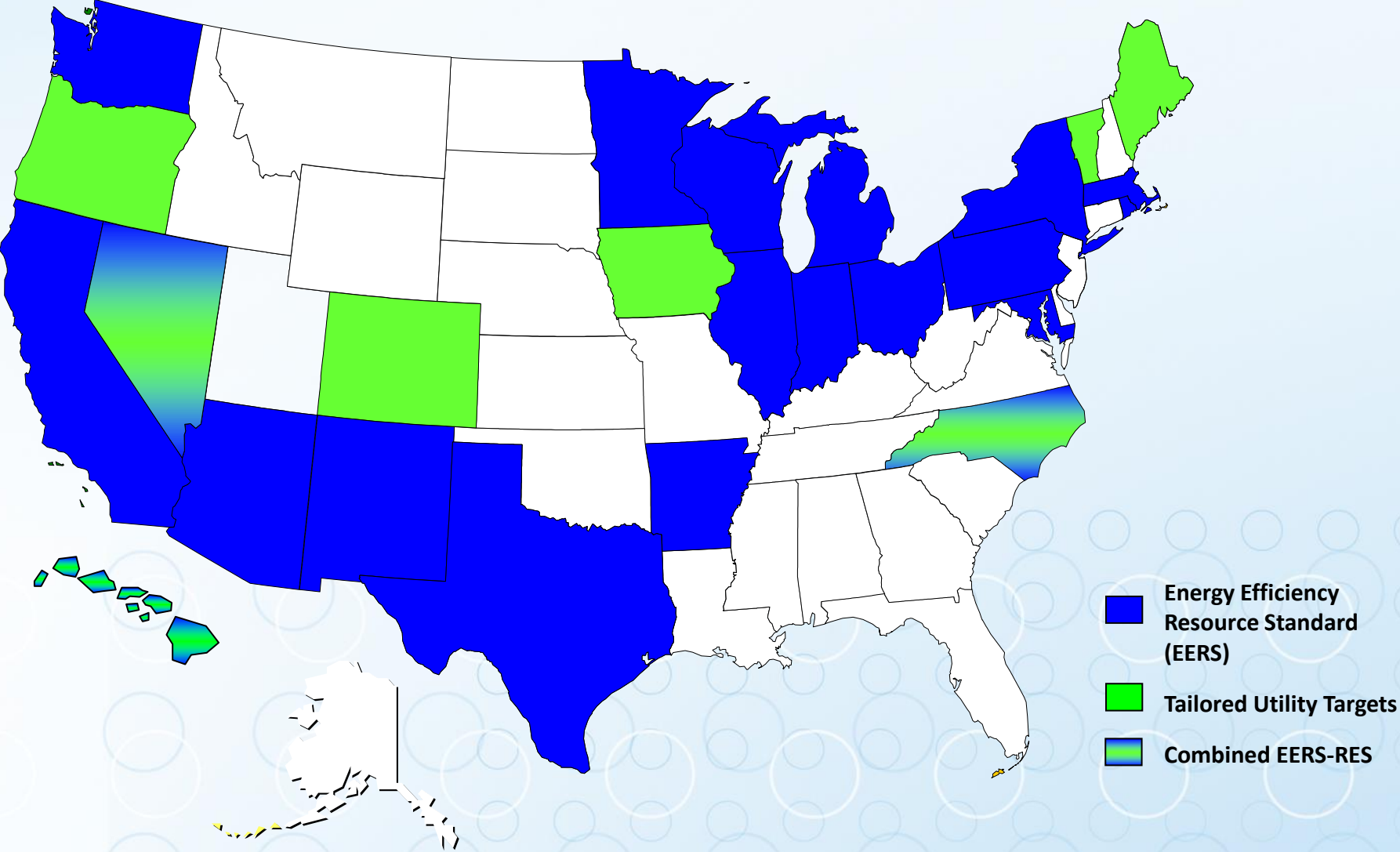
- Devote appropriate human and capital resources to EE programs
- Corporate-level support for EE

# Electric Decoupling and Lost Revenue Adjustment Mechanisms (LRAM)

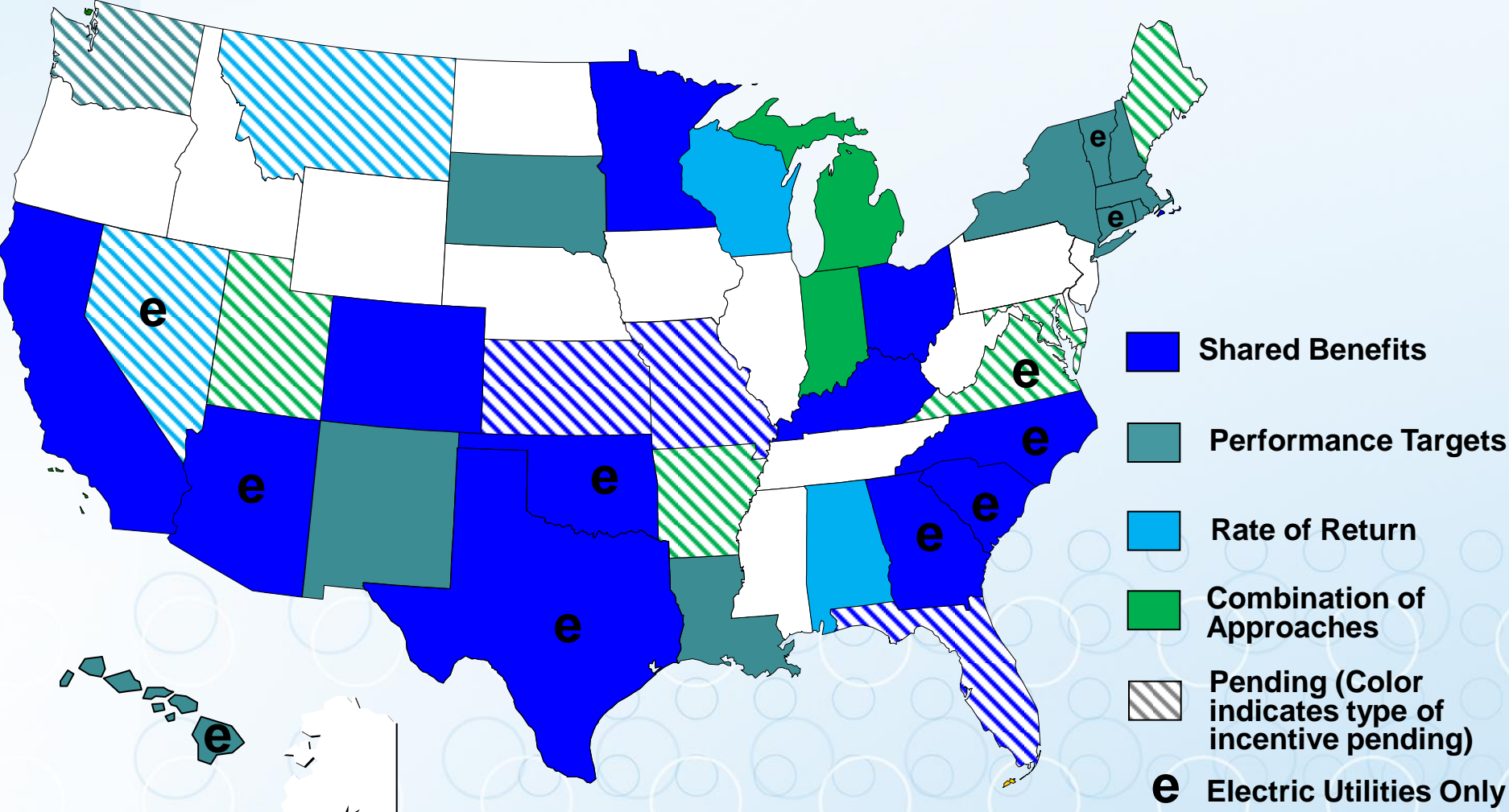


12 states with true electric decoupling; 16 with LRAM or other ratemaking approach to recover lost revenues; 7 with decoupling pending; 5 with LRAM or similar approach pending

# EERS Policy Approaches by State



# Shareholder Incentives for Electric and Natural Gas Utilities



25 states with shareholder incentives for electric efficiency programs; 16 states with incentives for natural gas programs; 11 states with incentives pending.

# Ramping-up Savings Requires Programmatic Excellence

- Complementary EERS Report discusses program strategies to ramp-up to higher savings
  - Increasing energy efficiency funding levels
  - Adopting complementary regulatory policies such as decoupling, performance incentives, and loading orders requiring the consideration of cost-effective energy efficiency in resource planning
  - Using non-utility program savings (i.e. building codes) to contribute to contribute towards meeting savings standards
  - Creating and sustaining collaborative and stakeholder processes
  - Capturing lighting savings early and adding new, higher- efficiency technologies to efficiency portfolios beyond CFL's
  - Adopting new program design approaches and strategies, including “Deeper, Then Broader”
  - Starting programs for new technologies and new customer market segments
  - Promoting participation through upstream rebates, more rebates and enhanced advertising

# Questions?

- EERS reports available at [www.aceee.org](http://www.aceee.org) for free download.

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