

# The Future of Ratepayer-Funded Energy Efficiency in the U.S.

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# Presentation Outline

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- **Overview of recent national and state trends affecting ratepayer-funded energy efficiency (EE) programs**
- **Berkeley Lab's projection of spending and savings from U.S. electric ratepayer-funded EE programs through 2025 (preliminary results)**
- **Regional projections and policy drivers**
- **Key challenges to dramatically scaling-up ratepayer-funded EE program activity and issues on the horizon**

# Total EE Spending is at an All-Time High but is Concentrated in a Small Number of States

Rank	State	2010 Electric EE Budgets	
		\$M	% U.S. Total
1	CA	1158	26%
2	NY	584	13%
3	MA	281	6%
4	NJ	216	5%
5	OH	187	4%
6	WA	153	3%
7	FL	123	3%
8	CT	122	3%
9	TX	115	3%
10	PA	113	3%
Top 10		3051	70%
All Other States		1325	30%
U.S. Total		4376	

- **2010 U.S. electric EE budget = \$4.4B** (1.2% of 2010 revenue, double the EE share of revenues in 2008)
- **70% of total funding is concentrated in 10 states** (down from 80% in 2008)
- CA represents roughly one-quarter of U.S. total

Source: CEE, State of the Efficiency Program Industry 2010 (electric EE only; load management not included)

# Berkeley Lab Projections of Ratepayer-Funded EE Program Spending & Savings

**LBNL developed Low, Medium, and High projections of electric energy efficiency program spending and savings through 2025**

- State-level projections are based on current policies in place and the broader policy environment within each state
  - Generic assumptions are used for a small number of “uncommitted” states that currently lack defined EE policies
- Low, medium, and high scenarios for each state reflect uncertainties in how effectively and aggressively current EE policies are implemented
  - Scenarios do not necessarily reflect the full range of uncertainties (e.g., broader macroeconomic conditions or wholesale shifts in a given state’s EE policy orientation)

***Results presented here are preliminary; gas EE in progress!***



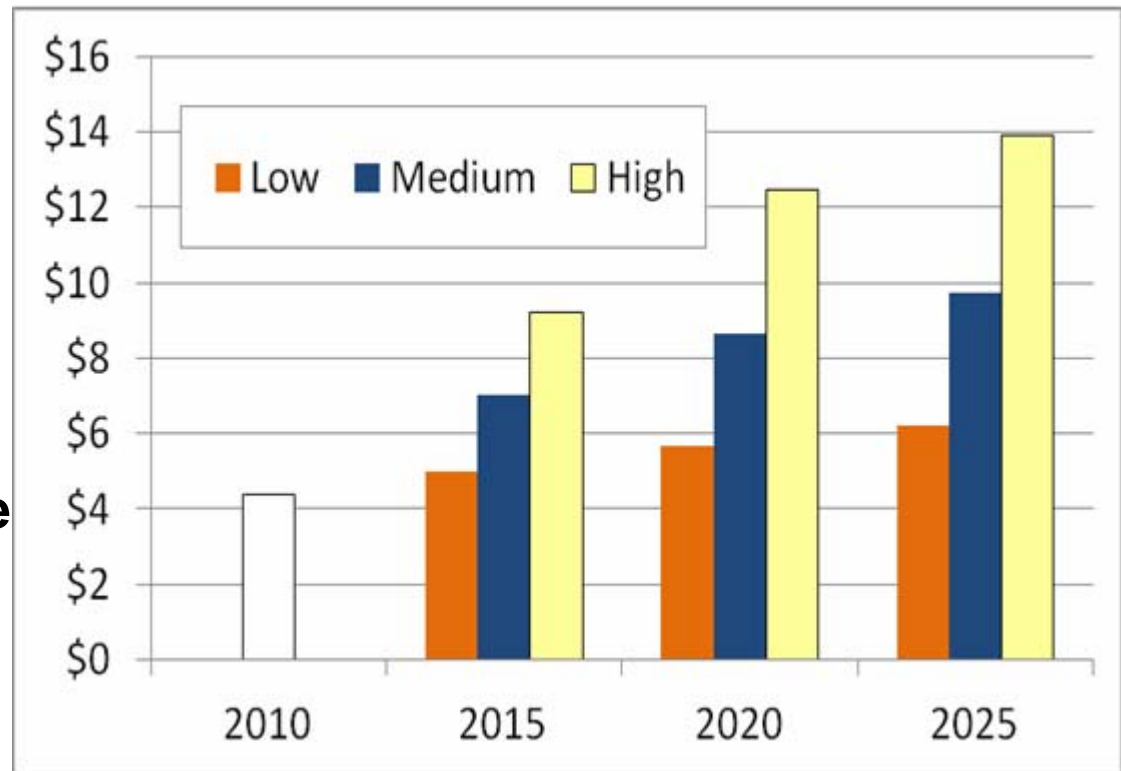
# The Policy Landscape for Ratepayer-Funded EE Points Towards Continued Growth

- **Traditionally leading states are maintaining and, in some cases, accelerating their efforts**
  - Statutory requirements to acquire all cost-effective EE (CA, CT, MA, RI, WA)
  - Adopted significant EERS policies (CA, MN, NY)
  - Aggressive EE program portfolios driven by IRP processes (Pacific NW)
- **Funding levels and program infrastructure are ramping up in a large number of other states**
  - New EERS policies and shorter-term target setting (AR, CO, IL, MD, MI, NC, OH, PA, HI)
  - Relatively aggressive or increasing EE program portfolios in IRPs and DSM plans (Southwest)
- **In South, key utilities and TVA are moving forward on EE, though long-term commitments are uncertain (TVA, FL, SC, GA, KY)**

# LBNL Projects Substantial Increases in Ratepayer-Funding in Medium & High Scenarios

- **Electric EE funding in 2020 projected to be \$8.8B (Medium),**  
(Low = \$5.7, High = \$12.7B)
- **Represents a doubling (Medium) over current spending in 10 years** (a tripling in the High Case)
- **Spending rises from 1.2% of electric revenues in 2010 to 2.0% in 2020 in the Medium Case,**  
(Low = 1.3%, High = 2.9%)

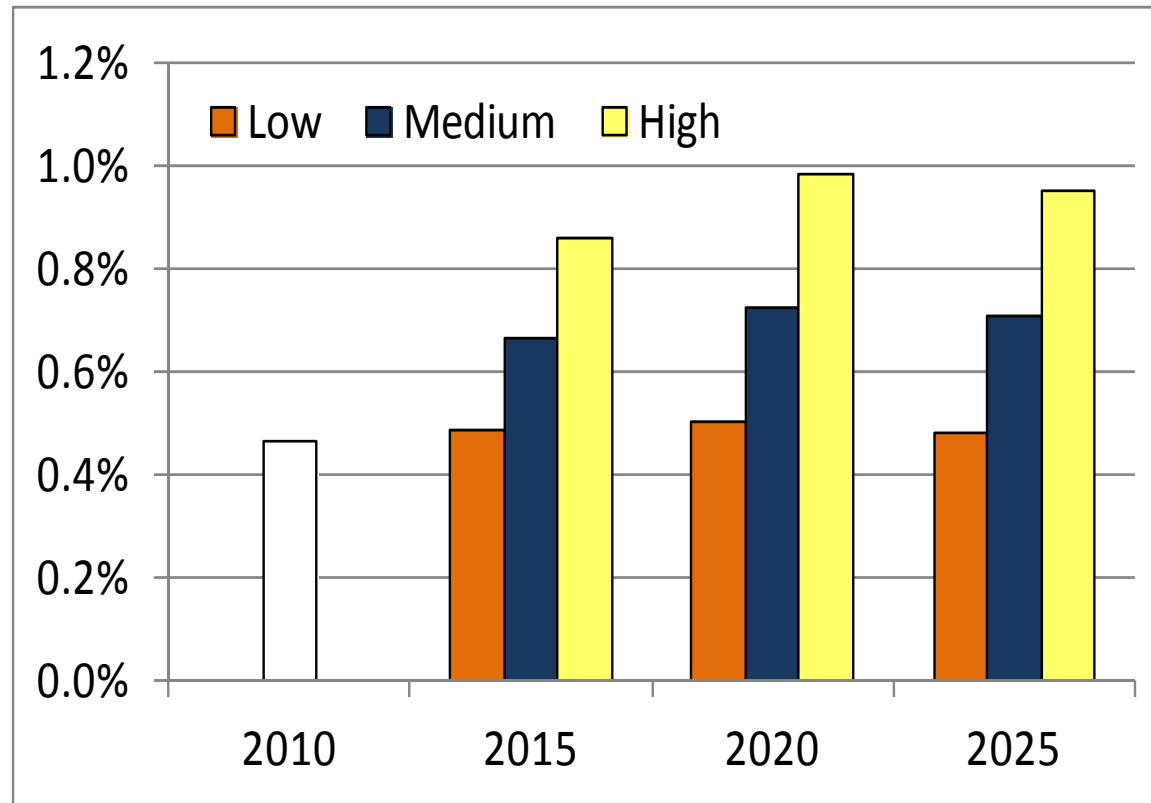
**Projected Ratepayer-Funding for Electric EE Programs in the U.S.**  
(\$billion, nominal)



# Electricity Savings Projected to Grow in Tandem with Spending

- **Estimated 2010 U.S. annual electricity savings = 0.5% of retail sales**
  - Some leading states achieved >1.0% savings
- **Annual electricity savings projected to rise to 0.7% (Medium) by 2020 (High Case = 1.0%)**
- **Cumulative savings from 2011-2020 equal 6.5% of EIA's reference case retail sales forecast for 2020 in the Medium Case (High Case = 8.3%)**

**Projected Incremental Annual Electric EE Savings from Ratepayer-Funded Programs**  
(Per cent of retail sales)

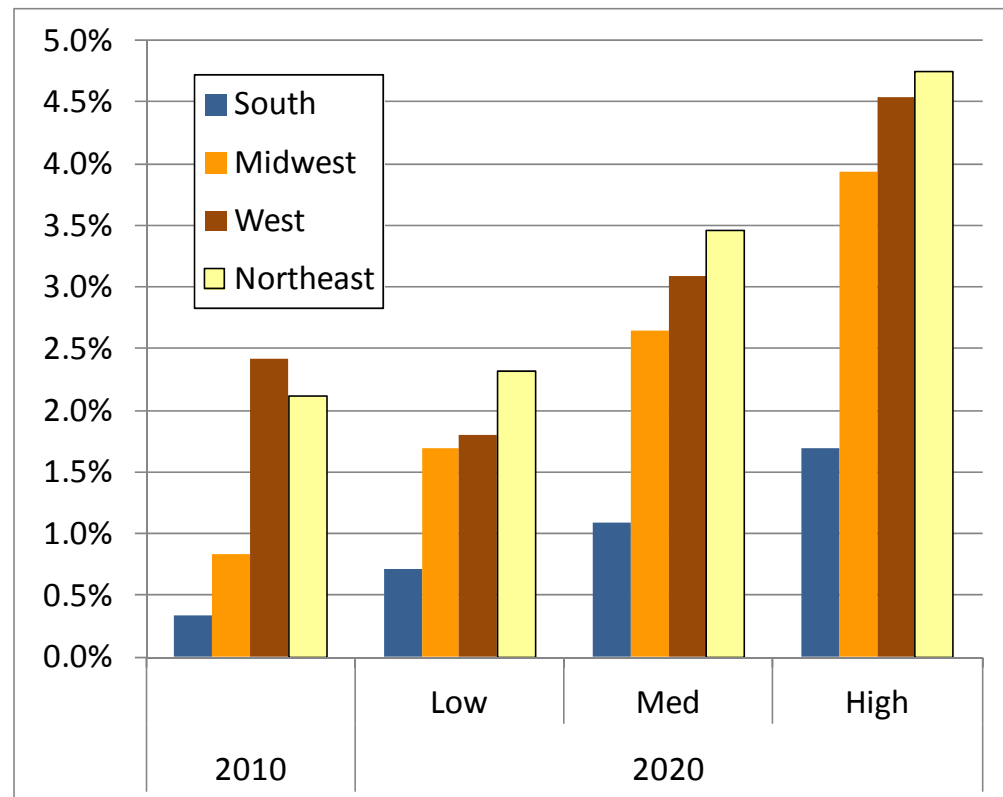


# Funding Levels Are Projected to Rise in All Regions under Most Scenarios

- EE spending as percent of revenues remains highest in Northeast and West (3.5% and 3.1% in 2020 Medium Case)
- EE funding in the South and Midwest is expected to triple by 2020 under the Medium Case
- Funding trajectory in West is highly uncertain; depends on role of ratepayer EE in CA
- Also uncertainty in the Northeast (a little bump or a big one?); longevity and success of “all cost-effective EE” depends on continued political support

## Ratepayer-funded Electric EE Programs

(Projected Spending as Percent of Revenues)

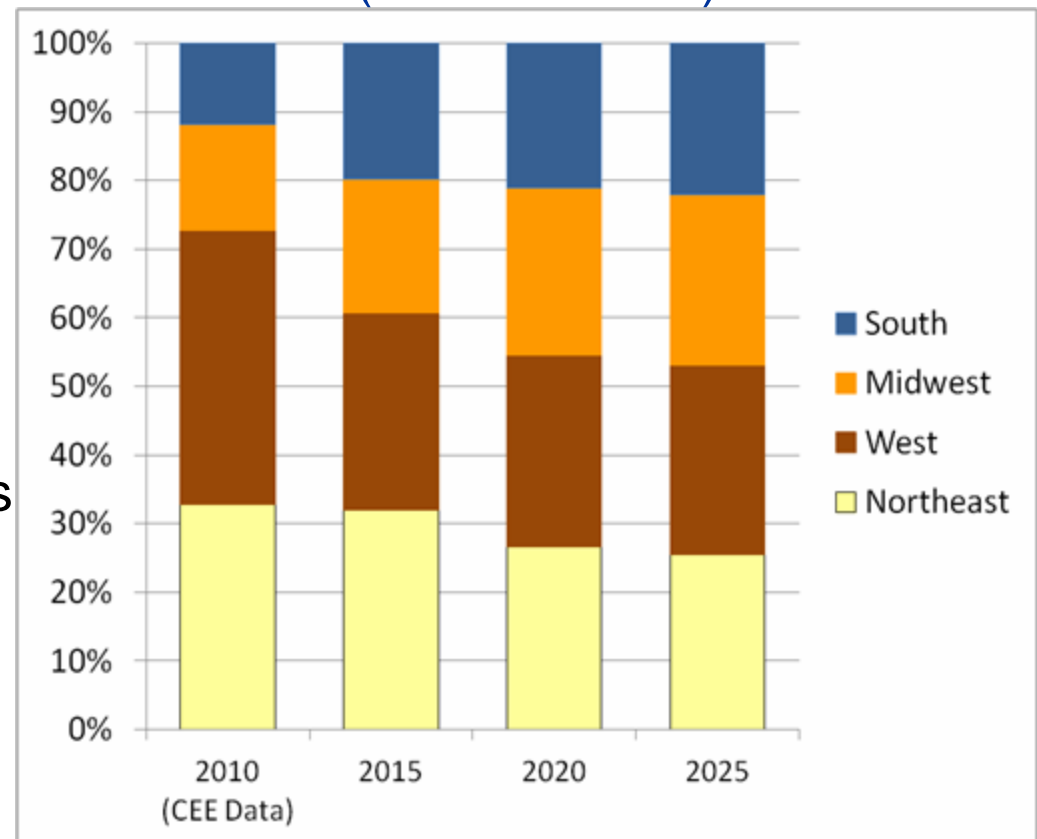




# EE Funding is Projected to Become Substantially More Evenly Distributed Across Regions

- Northeast and West historically have dominated the ratepayer EE funding landscape
- Other states with historically large budgets are closing in on CA (e.g., MA, NY)
- Populous Midwestern states with historically low EE funding but aggressive new EEPS are emerging as major new markets (IL, IN, MI, OH)
- Increased spending by several larger southern states (FL, NC, MD, TX)

## Regional Breakdown in Electric EE Program Funding (Medium Case)

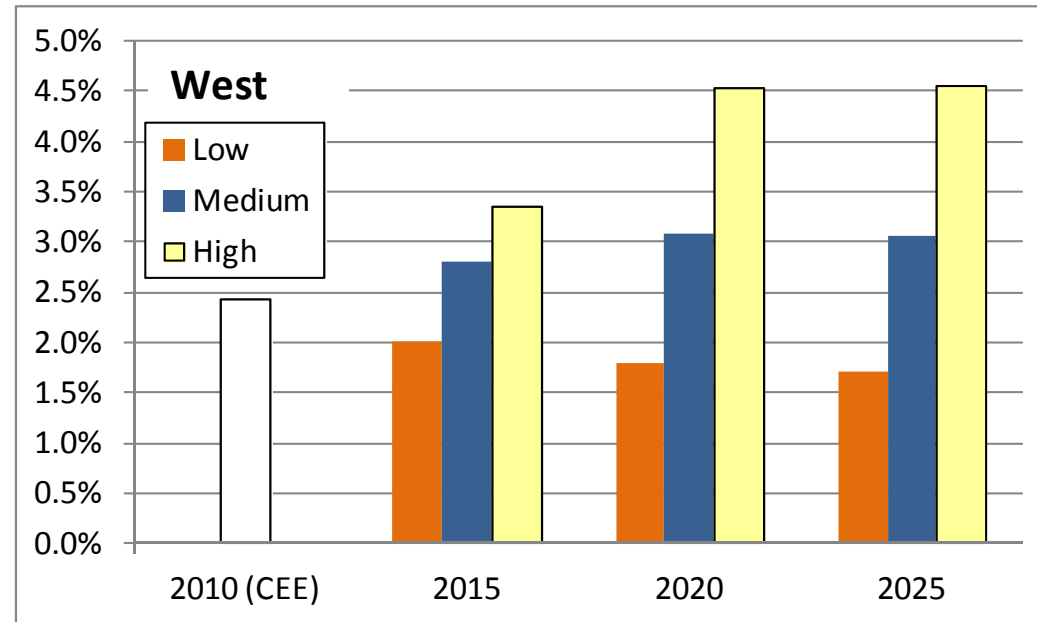


# Ratepayer Funding Projections: **West**

- **Relatively modest aggregate growth in Medium Case** (from 2.5% of revenues to ~3.0%)
- **In CA, all cost-effective EE required, but increasing emphasis on other EE strategies (e.g. codes, standards, more financing)**
- **Strong support for EE in the Pacific Northwest, but relatively low load growth and avoided costs limits upside**
- **Rapid expansion in EE portfolios by many utilities in the Southwest, driven partly by EERS requirements and utility business models**

## Ratepayer-funded Electric EE Programs

(Projected Spending as Percent of Revenues)

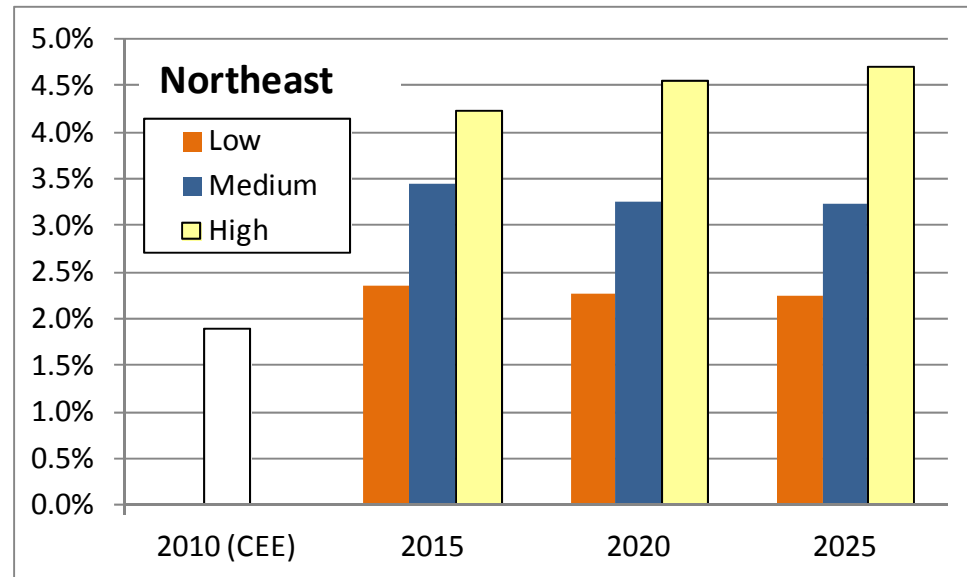


# Ratepayer Funding Projections: Northeast

- Several states pursuing all cost-effective EE, with huge ramp-up underway in MA
- Aggressive EEPS targets in NY may require significant funding increases through 2015
- Sensitivity to rate impacts could constrain savings goals
- Some states exploring revolving loan funds & other financing tools to leverage outside capital and decrease ratepayer expenses (NJ, CT)

## Ratepayer-funded Electric EE Programs

(Projected Spending as Percent of Revenues)

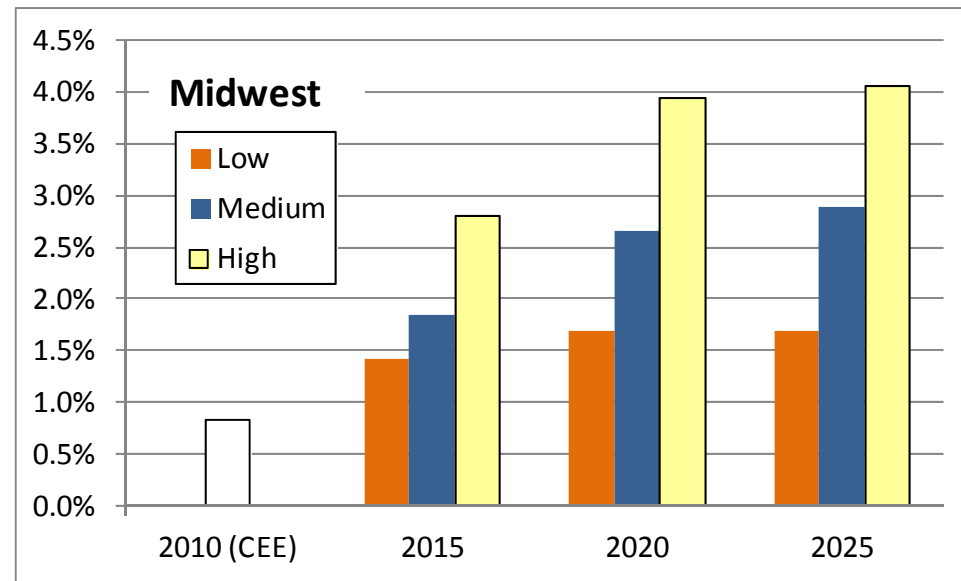


# Ratepayer Funding Projections: **Midwest**

- EERS targets increase substantially over the next decade in OH, IN, MI, IL
- By 2025, if states succeed in achieving targets, EE spending levels are comparable to West and Northeast
- Some states are overachieving in early years; relying heavily on CFLs → Will these performance levels be sustained?
- Some retrenchment (WI)

## Ratepayer-funded Electric EE Programs

(Projected Spending as Percent of Revenues)

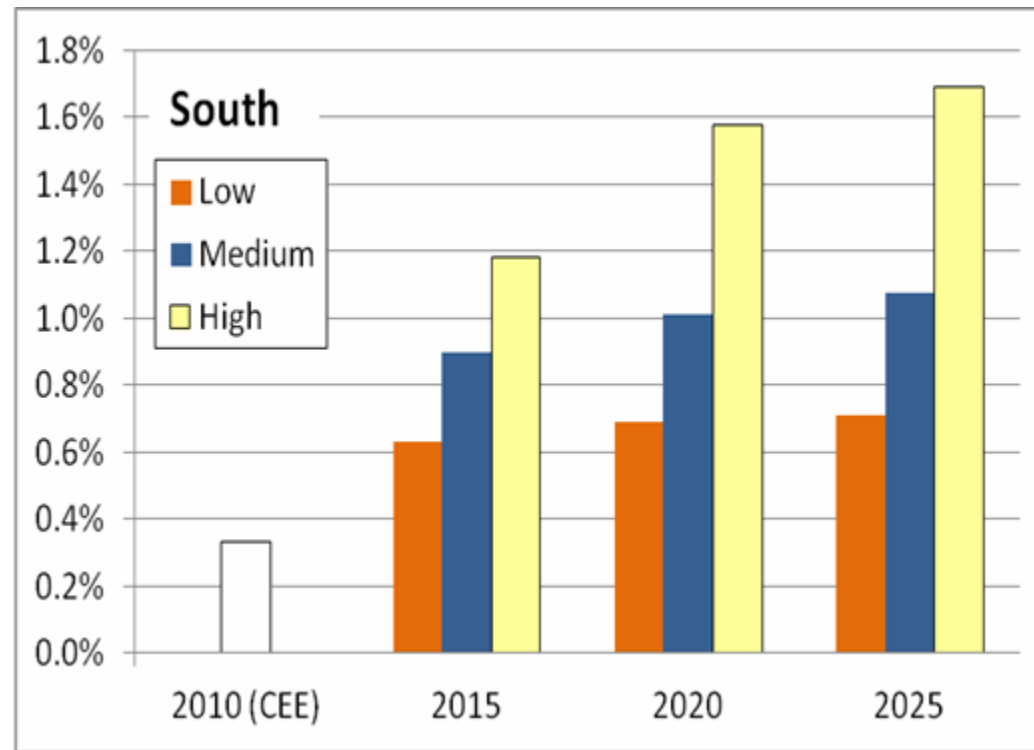


# Ratepayer Funding Projections: South

- TVA policy goal of being the South's leader in EE
- Coal retirements driven by low-cost shale gas and EPA/state emission regulations
  - South has largest share of projected coal retirements: 10-40 GW
- Spillover from one state to others via multi-state utilities (NC-SC)
- Start-up states (AR) serving as templates for currently uncommitted states
- RIM test and spending caps in some states (VA, FL, TX)

## Ratepayer-funded Electric EE Programs

(Projected Spending as Percent of Revenues)



# Which Scenario Will Transpire: EE Programmatic and Institutional Challenges

- The **institutional framework and capacity** for effective regulatory oversight of ratepayer-funded EE programs in start-up or uncommitted states
- Sustainable **EE business models** to motivate program administrators
- **Innovative program designs to reach deeper and broader savings** in order to achieve goals significantly beyond what is currently being achieved
- **Short-term rate impacts** associated with large-scale energy efficiency implementation
- The opportunity to **leverage financing and program infrastructure** built with Recovery Act funds



# Which Scenario Will Transpire: External Factors

- A persistent **economic downturn** may impact the ability of EE administrators to meet savings targets as well as the political feasibility of increasing ratepayer funding for EE programs
- The effect of new **state and/or Federal appliance and lighting efficiency standards** on the remaining market potential that can be captured by voluntary energy efficiency programs
- **Impact of low natural gas prices** may reduce avoided energy cost forecast and reduce the headroom for cost-effective EE
- Cost of proposed **new nuclear units** in the South may diminish interest in EE by regulators

# For More Information...

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## **Stay Tuned for the Report:**

*Projected U.S. and regional spending and savings for Electric and Gas EE*

**Expected publication in late 2011**

**<http://eetd.lbl.gov/ea/emp/ee-pubs.html>**

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# EE and the States: Current Relationship Status

- Golden anniversary – leading states, all cost effective savings
- Divorced or not-so-happily married – diversions of public benefits funds, flat or reduced EE budgets, re-thinking commitments (e.g. leave RGGI)
- Happily married – gaining experience & facing major commitment
- Newlywed – new EERS or regulatory target
- Living together/Engaged – moving beyond IRPs and shopping for multi-year DSM plans!
- Courting – Collaboratives, Quick-Start Programs. No Mandatory Targets Please!
- Devoutly single, sleeping around (with nuclear), recluse – Isn't ARRA enough?

