



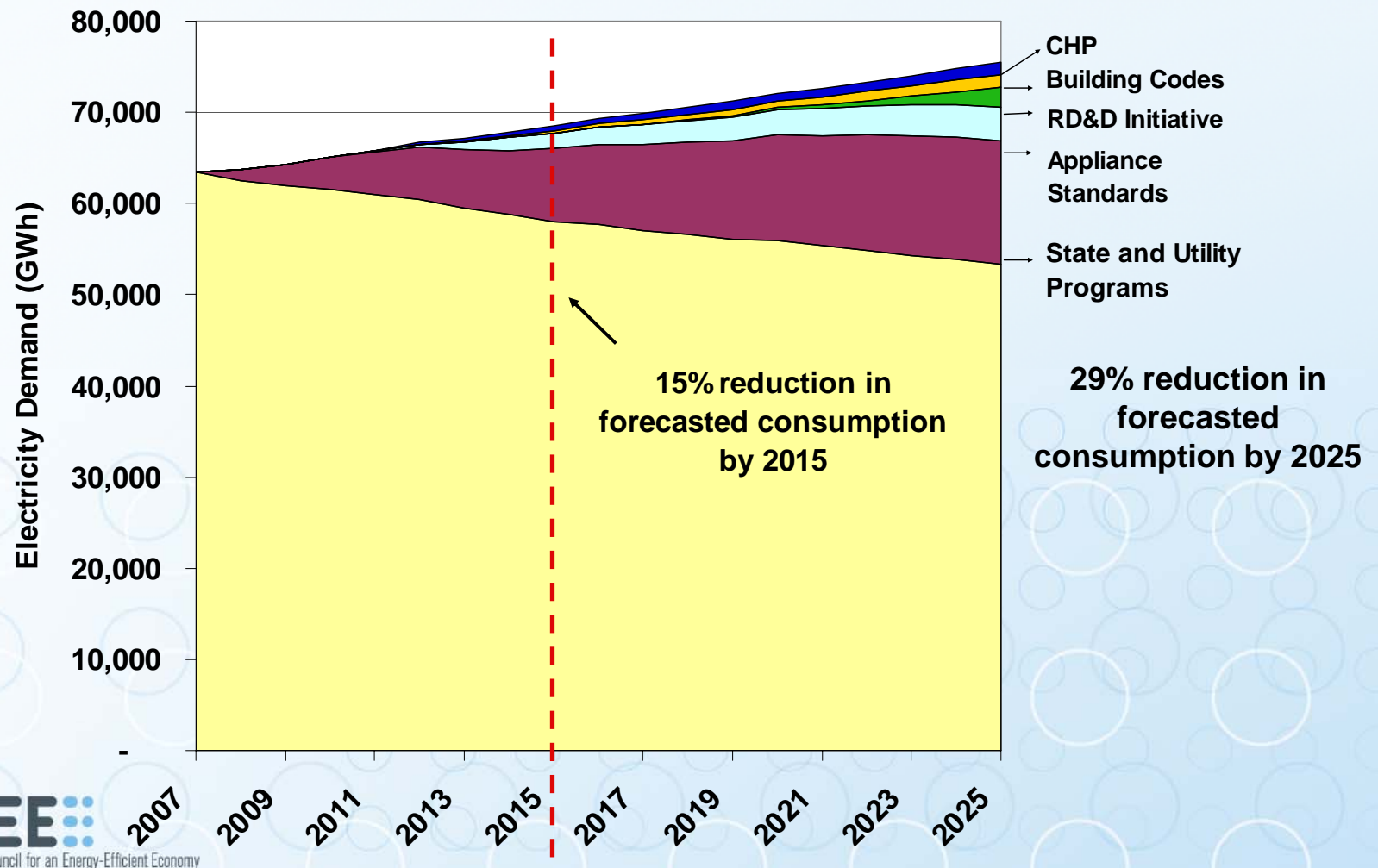
Energy Efficiency Resource Standards

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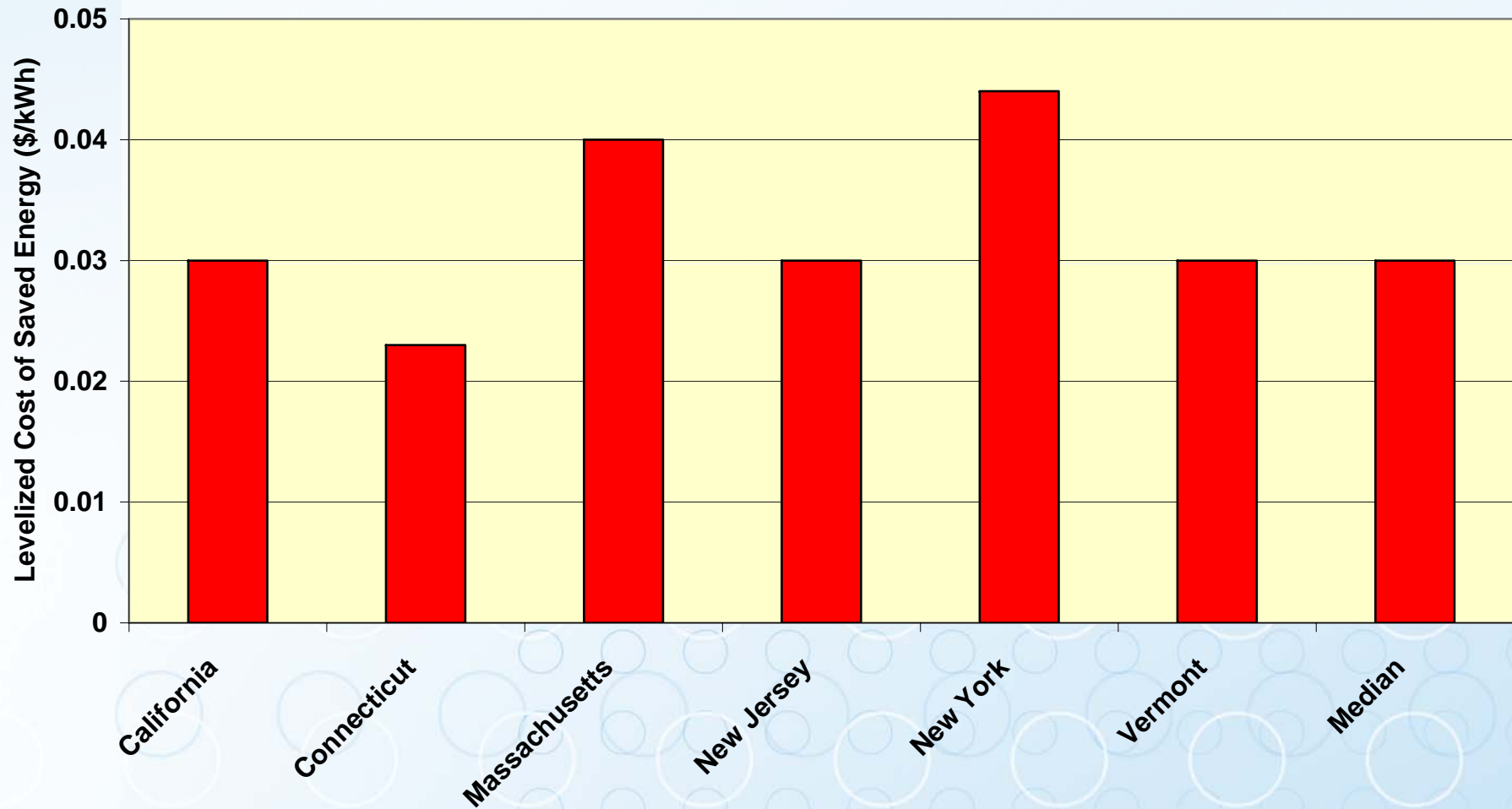
Feb. 2009

Share of Maryland Electricity Sales That Can Be Met by Efficiency Policies

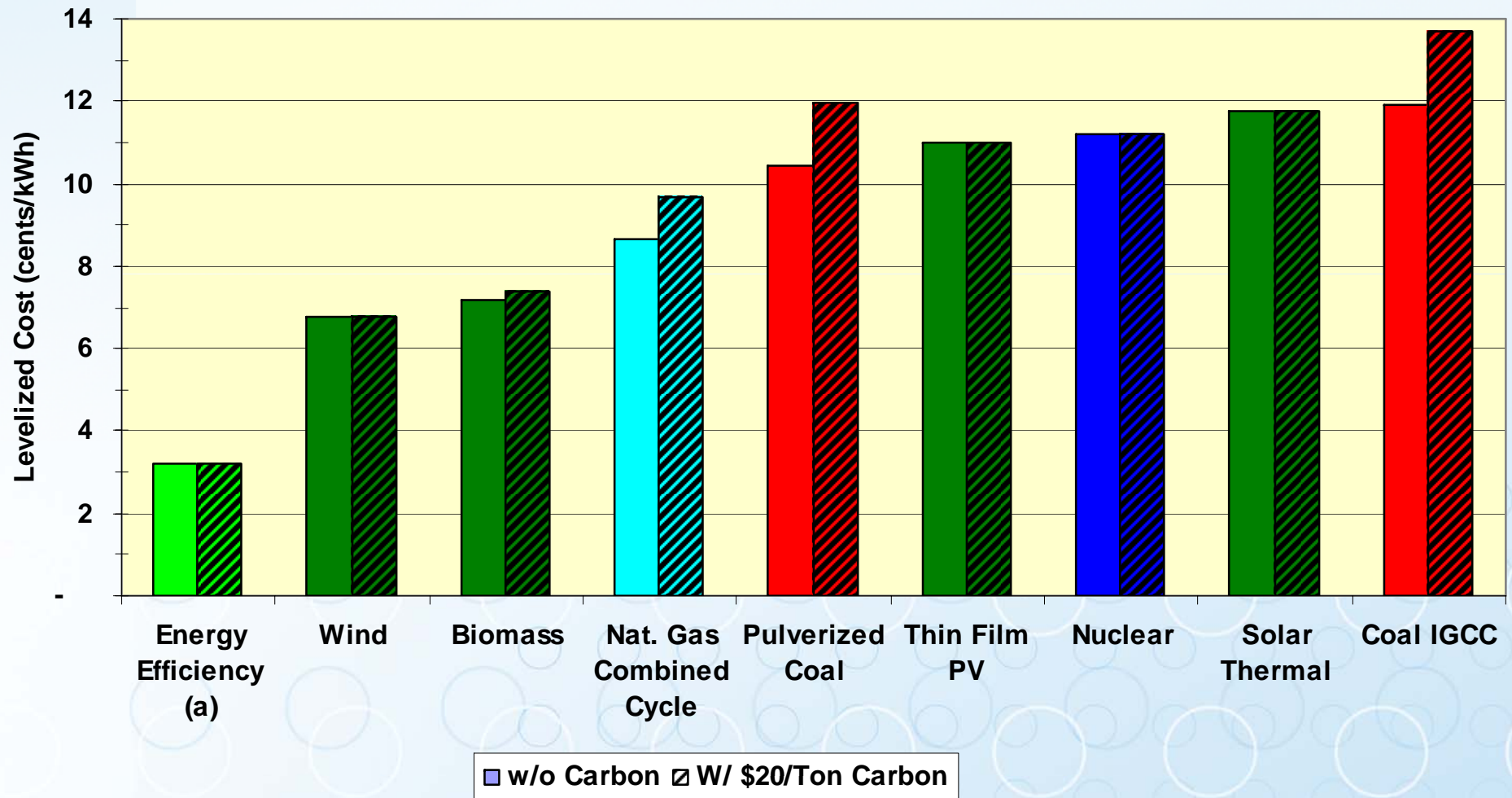


Efficiency Resources Cost Effective

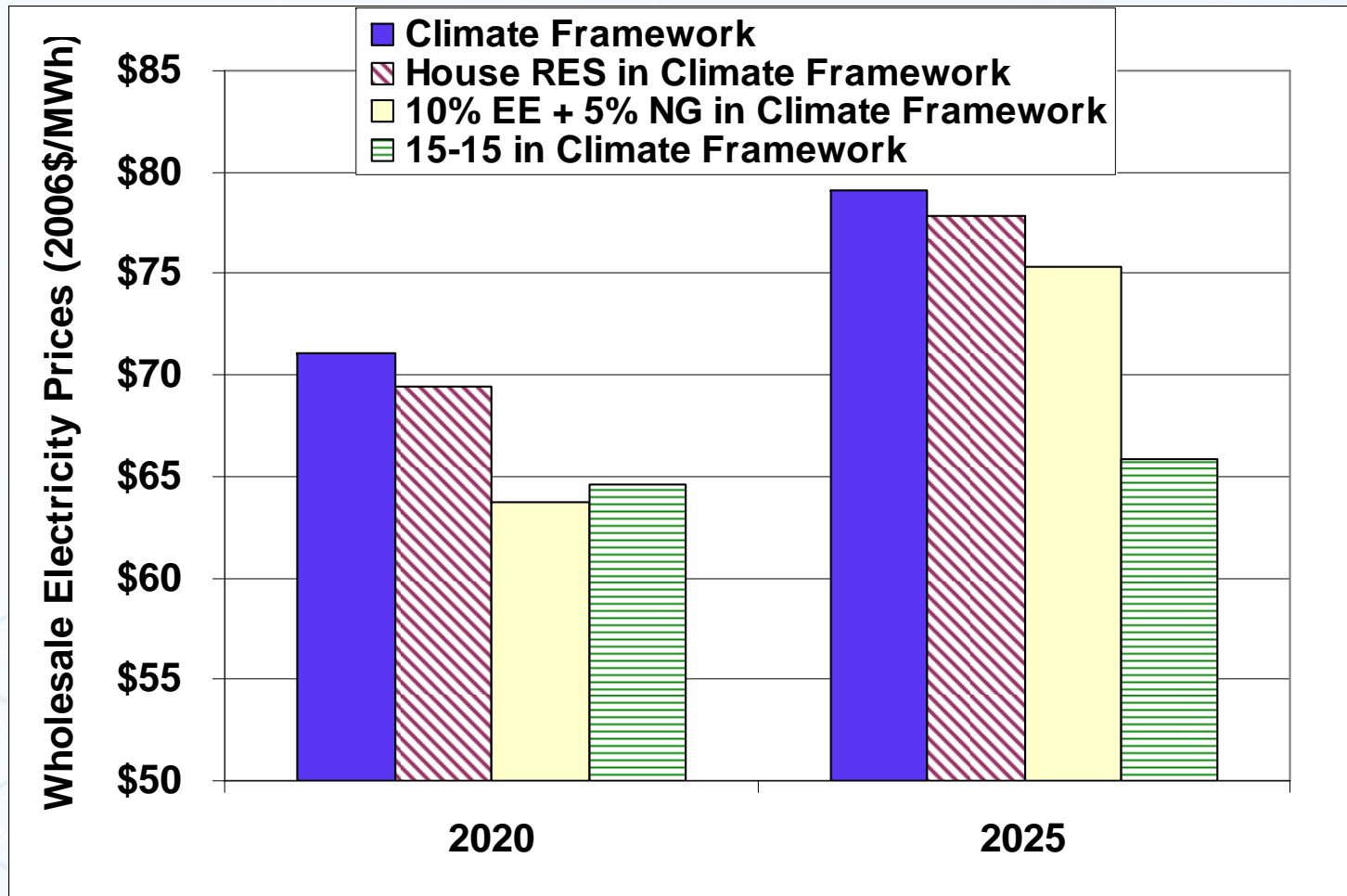
Evaluated results of All-Sector State-Level Energy Efficiency Programs



Cost of New Electricity Resources



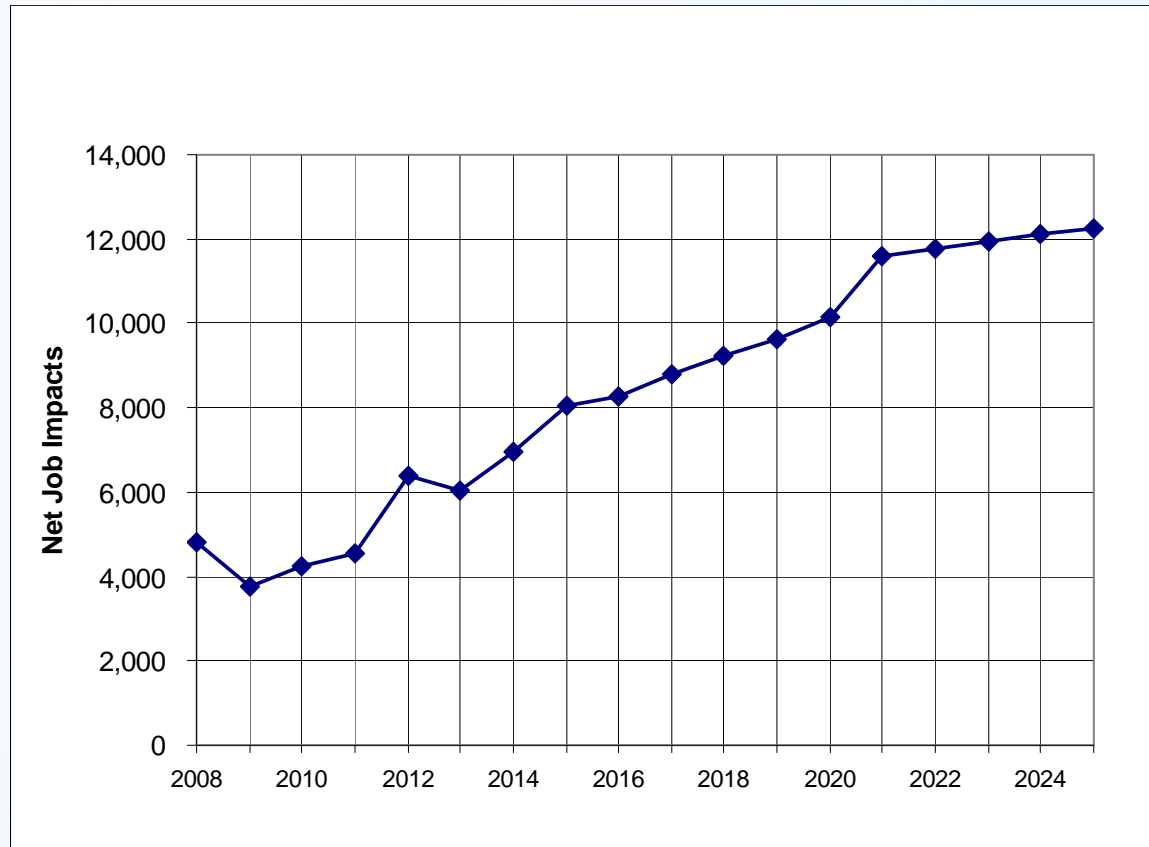
National Wholesale Electricity Price With an EERS (Climate Framework Scenario)



Note: Cost of efficiency programs will raise prices at retail level modestly.

Efficiency Programs Generate Jobs

(Maryland 29% savings by 2025 scenario)



Source: ACEEE Feb. 2008 Maryland report

Energy Efficiency Resource Standards

Analogous to a Renewable Portfolio Standard
Electric and/or gas savings targets for utilities

- Includes end-use efficiency and sometimes combined heat & power (CHP) and codes/standards
- Targets generally start low and increase over time

Savings must be documented in accordance with evaluation rules established by regulators

Can authorize bilateral contracts to exchange savings credits and provide a role for 3rd parties

Why an EERS?

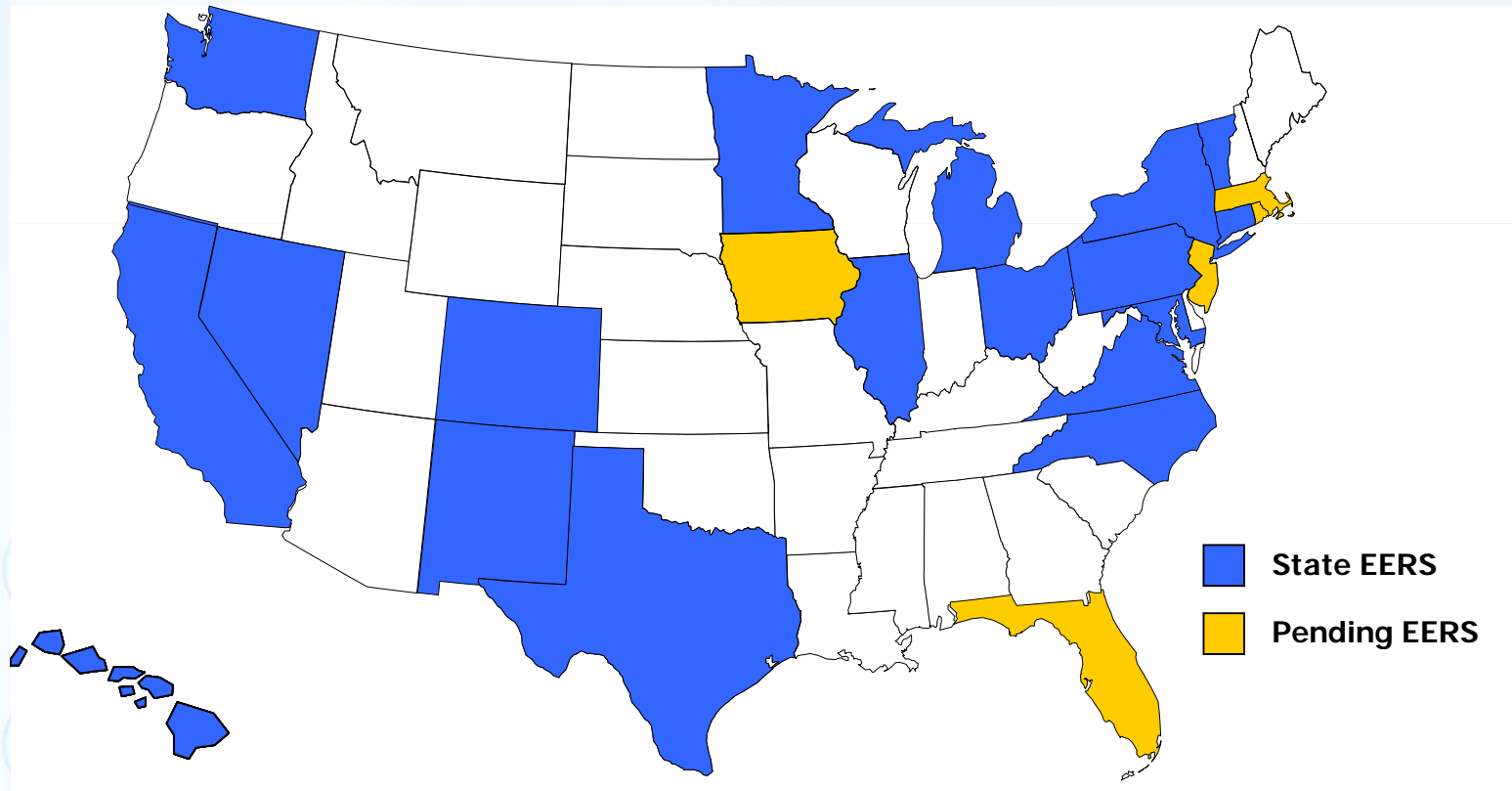
Achieve substantial energy and emissions savings

Performance based – emphasizes savings, not spending

Can be easier to legislate savings targets than spending amounts

Can start programs quickly, without many years of study (but targets should be based on cost-effective opportunities)

States with Energy Efficiency Resource Standards (EERS)



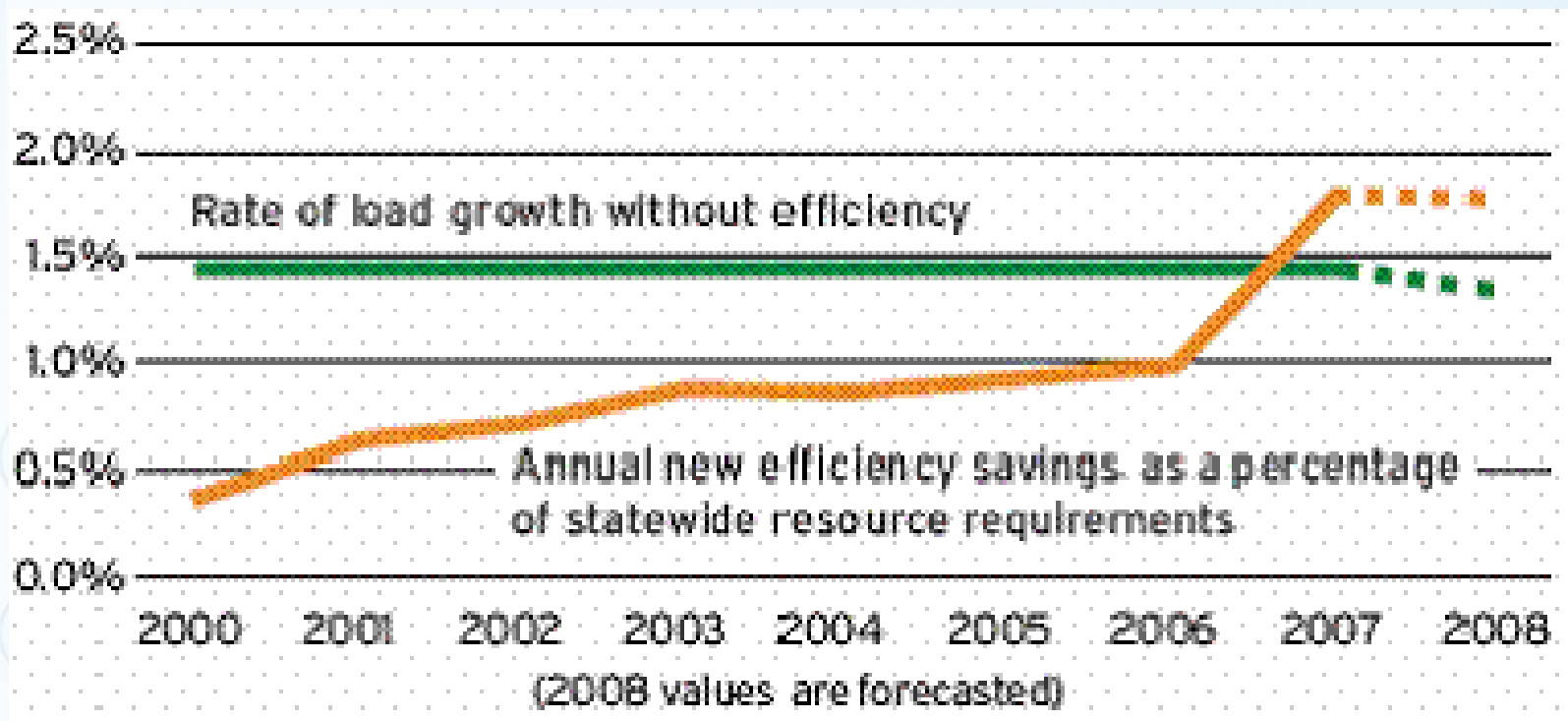
These plus BAU EE will save ~6% nationally by 2020

Texas

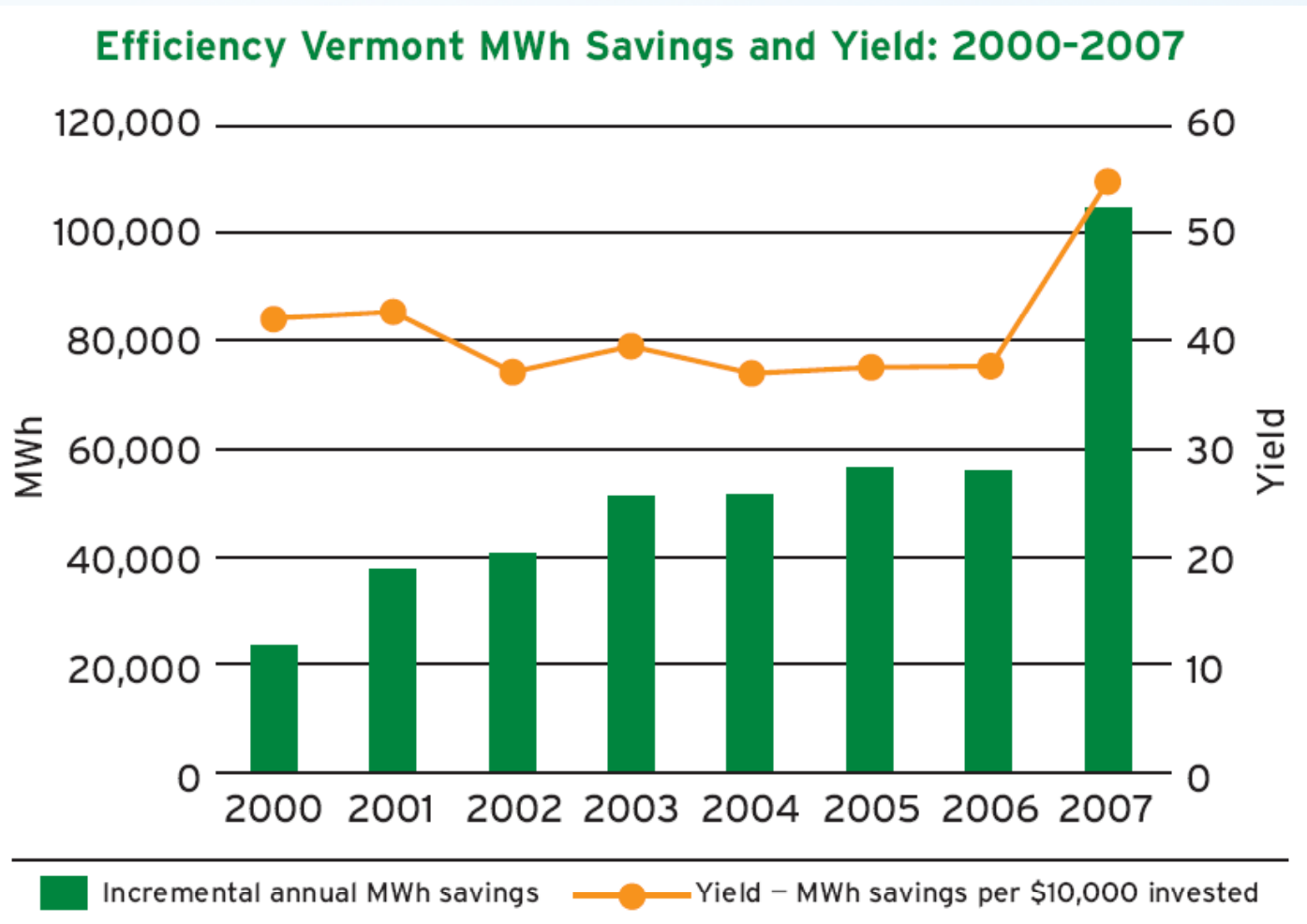
- First state to establish an EERS
- Initially 10% of load growth but increased by legislature to 20% of load growth
- Utilities have not had difficulty meeting and exceeding targets
- In 2009, bill likely to come up to increase to 30% or even 50% of load growth or the equivalent as % of sales

Vermont

- Targets set in contract with Efficiency Vermont
- Have exceeded each year



Vermont



What Markets Do We Work In?

Efficiency Vermont

$$\begin{aligned} > N \in L_F N_L \in - \textcircled{M} \\ \dagger 1 N^{0.5/8} L_F \end{aligned}$$

$$\begin{aligned} > 7/8 7/8 \in 1/8 \in 5/8 - N_L \\ \blacksquare C_R 13/8 V_T 1/8 N_L L_F \end{aligned}$$

$$\begin{aligned} > N \in L_F N_L \in - \textcircled{M} \\ - V_T L_F \in - 5/8 L_F L_F \\ 5/8 L_F \end{aligned}$$

$$\begin{aligned} > F_F V_T \in H_T N^{0.5/8} - N_L \\ \square 5/8 H_T 0/00 1/3 1/8 5/8 \end{aligned}$$

$$\begin{aligned} - V_T L_F \in - 5/8 L_F L_F \\ \circ 5/8 W \end{aligned}$$

$$ff 1/3 C_R \textcircled{M} 5/8 N_L - V_T 2/3 \textcircled{Y}$$

$$\circ 5/8 W \dagger 1 N^{0.5/8} L_F$$

$$\bullet 1/3 C_R \textcircled{C} / u 5/8 N_L L_F 3/4$$

$$\bullet - 10/00 00 5/8 \textcircled{M} 5/8 L_F 1/3 - 3/8$$

$$ffi - \in \textcircled{+} 5/8 C_R L_F \in N_L \in 5/8 L_F$$

$$\bullet \bullet V_T - \in 1/8 \in H_T 1/3 00 ffi 1/3 L_F N_L 5/8$$

$$1/3 - 3/8 ffi 1/3 N_L 5/8 C_R$$

$$\bullet SM \textcircled{Y} 1/2 - 1/8 \textcircled{1} 10/00 L_F$$

$$\bullet \ddagger - 3/8 V_T L_F N_L C_R \in 1/3 00 \blacksquare C_R 11/8 5/8 L_F L_F$$

$$\bullet N_L 1/6 N_L 5/8 V_T \in 0/00 3/6 \in \textcircled{M} L_F$$

$$\bullet \circ 1/3 C_R N^{0.5} L_F$$

$$\bullet \dagger 1 L_F H_T \in N_L 1/3 00 L_F$$

$$\bullet - \textcircled{C} / u \in \textcircled{C} R 5/8 1/3 L_F$$

Nevada

Combined EERS and RPS, with EE capped at 25% of total

Utilities seeking to maximize EE since less expensive and easier to develop than renewables

(NC and HI also have combined EERS/RPS)

Annual Savings in Leading States

<u>State</u>	<u>Target</u>	<u>Notes</u>
California	6%	Actual savings in 2001 (2/3 behavioral)
Massachusetts	2%+	Plan to ramp up to 1.5% by 2010, 2-3%/yr over following decade
Illinois	2.0%	After 7 year ramp-up; subject to cost caps
Ohio	2.0%	After a 10 year ramp-up; PUCO can find not feas
California	~2%	Preliminary results for installations in 2007
Maryland	1.88%	15% by 2015; includes standards & codes
New York	1.88%	15% by 2015; includes standards & codes
Vermont	1.75%	Approved plan for 2007-2008, on track in 2007; higher levels being discussed
New Jersey	1.54%	Legislation authorizes target of 20% in 2020
Minnesota	1.5%	2007 legislation; includes standards & codes
Connecticut	~1.5%	Derived from utility plan for 2008-2018
California	1.0%	10 year target
CO, MI	~1%	Targets ramp up to this level after a few years

EERS Implementation

So far implemented in Hawaii, Nevada, Pennsylvania, California, Connecticut and Vermont

- In all cases have met or are on-track for meeting targets

Majority of states still developing regulations and have yet to implement targets

Markey HR 889 -- A Federal EERS

- 15% electric, 10% gas savings by 2020
- Includes CHP, recycled energy, codes and standards
- DOE to establish M&V protocols
- Allow bilateral contracts within state; within power pool with PUC permission
- 5 cents/kWh, 50 cents/therm buyout option
 - Funds can be used in state to operate EE programs
- States implement if “willing and able”
- States can set higher targets if they want

Other Federal Activities

- Schumer-Landrieu working on Senate bill
 - Builds on their 2007 amendment
- Senator Bingaman draft bill
 - 20% RES with efficiency up to 5% EE
- President Obama's campaign platform calls for 15% electric savings by 2020, including codes and standards

Impacts of a Federal EERS

(15% electric, 10% gas by 2020; savings over and above existing state EERS's; includes codes & standards)

- Peak demand savings of 90,000 MW (300 power plants, 300 MW each)
- CO2 emissions down 260 MMT in 2020 (equivalent to taking 43 million vehicles off the road for a year)
- 260,000 net jobs created
- Net savings of \$144 billion (B/C ~3:1)

EERS in New Jersey

- Climate legislation and Energy Master Plan both indicate 20% EERS by 2020
- BPU to have a proceeding this year

EERS Issues

Which providers covered? (gas? size cap?)

Which measures eligible? (CHP? T&D?)

Appropriate targets? Include codes & standards?

How many years should an EERS extend?

Utility and/or state implementation?

Trading? (in PA and CT)

Cost caps? (in IL and NC)

Industrial self-direct option? (as in OH & MI)

Relationship with RPS?

Monitoring and verification rules?

Relationship to other policies? (incentives, decoupling)

Conclusion

- EERS an increasingly popular policy
- Working well thus far, but most states just starting to implement
- Many useful lessons for NJ
- Also possibility of a federal EERS

For More Information

ACEEE EERS webpage:

www.aceee.org/energy/national/eers.htm

(Markey bill, fact sheet, PPT, state-specific analyses)

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