



Bringing Energy Efficiency to Southerners

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Research Director
EESI Panel “Energy Efficiency in the South”
April 14, 2010

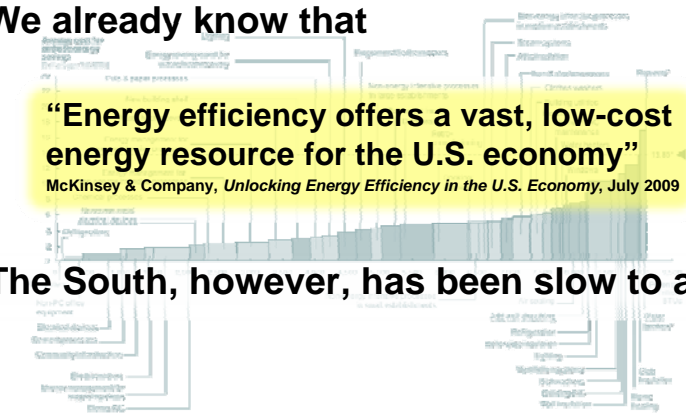
Why is this new study important?

- We already know that

“Energy efficiency offers a vast, low-cost energy resource for the U.S. economy”

McKinsey & Company, *Unlocking Energy Efficiency in the U.S. Economy*, July 2009

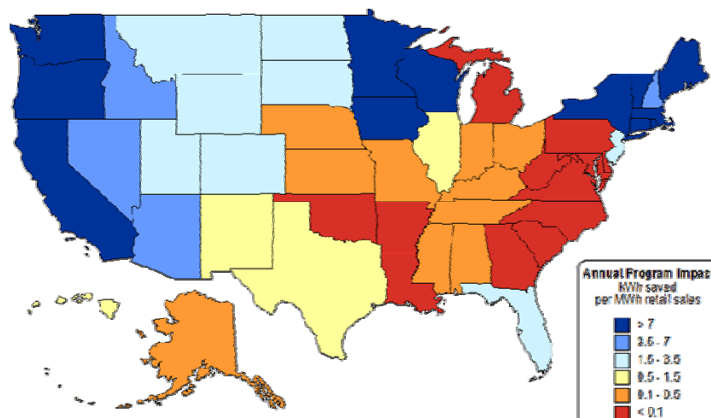
- The South, however, has been slow to act.



“Efficiency in the South” means ...

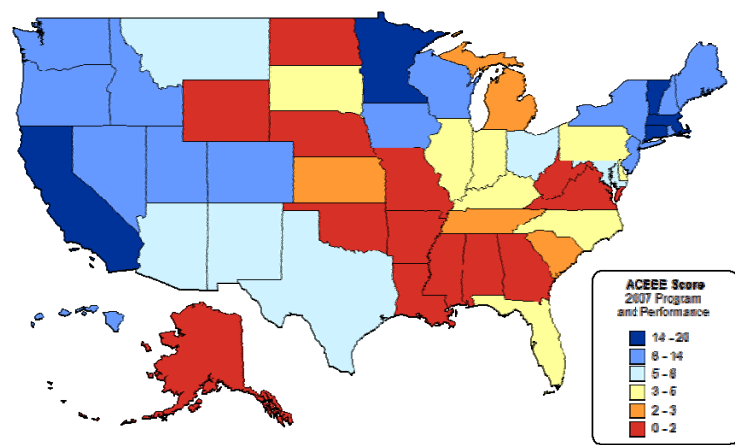
- **No growth in energy use for 20 years**
 - waste would drive 16% growth
- **Retire many (10 GW) old power plants, and avoid many (49 GW) more**
- **Save customers \$41 billion per year by 2020, or \$26 per month for each household**
- **Create 380,000 new jobs and \$1.2 billion in additional economic growth**
- **Save 8.6 billion gallons of freshwater**

South Lags the Nation: Energy Efficiency Program Impacts, by State (2007)

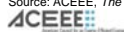


Sources: EIA Form 861; ACEEE, *Meeting Aggressive New State Goals for Utility-Sector Energy Efficiency*.

South Lags the Nation: ACEEE Score for Utility and Public Benefits Programs and Policies, 2007

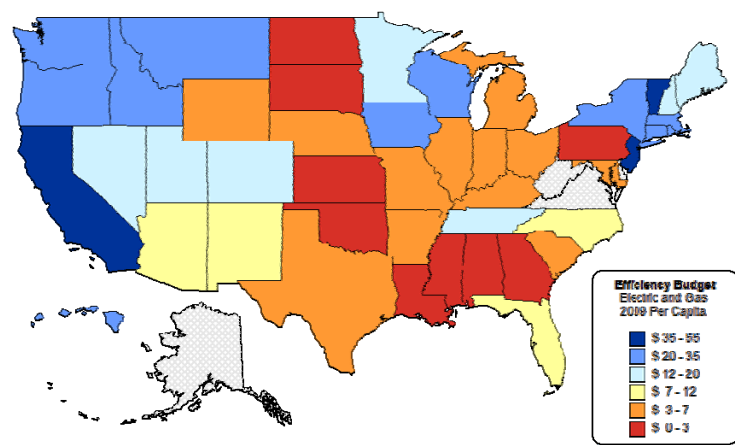


Source: ACEEE, *The 2009 State Energy Efficiency Scorecard*.



5 cleanenergy.org

South Lags the Nation: Reported Budgets for Energy Efficiency Programs, 2009



Source: CEE, *The State of the Efficiency Program Industry: Budgets, Expenditures and Impacts, 2009*.



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Why Does the South Lag Other Regions in Energy Efficiency?

- **Myths:**

- Low electric rates make efficiency infeasible
- Low-income people are an obstacle*

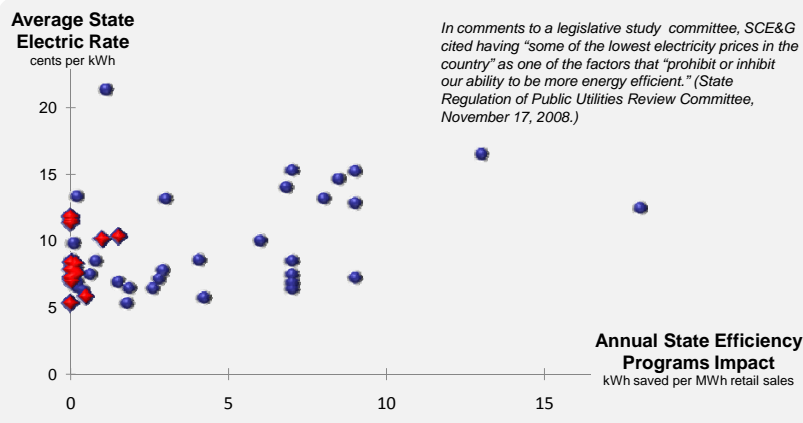
* "These low-income households are truly unable to participate in any energy efficiency and conservation efforts." – *Testimony of South Carolina Public Service Commissioner David A. Wright before the Senate Energy and Natural Resources Committee on a national Renewable Portfolio Standard*, February 10, 2009.



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Rates are Not the Barrier

Energy Efficiency Impacts Are Large in Some States Where Rates Are Comparable to the South



◆ Southern States

Source: ACEEE, EIA Form 861. (2007 data)

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Cost is Not The Barrier

- **By 2020, rates go down:**
 - 8% residential
 - 6% commercial
 - 8% industrial
- **By 2020, bills go down 14% ... saving \$41 billion**
- **By 2030, saves about \$90 billion in unnecessary power plant construction**

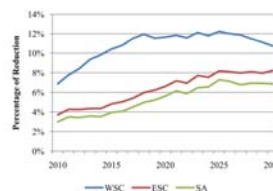


Figure 5.19 Percentage Change in Energy Bill Savings



Source: Brown et al., "Energy Efficiency in the South," Southeast Energy Efficiency Alliance (April 2010).

Cost is Not the Barrier

- **Florida energy savings potential = 9.8% of sales**
- **About 80% of these savings are so cost-effective that they have a customer payback of less than two years at forecast Florida electric rates**

Source: Florida Public Service Commission, Staff Recommendation, FEECA Proceedings, October 15, 2009.

Cost is Not the Barrier

Duke Energy Carolinas Save-a-Watt Program Bill Analysis

Example Bill Impact for Participating Customers

	Avg Monthly Usage (kWh)	Reduction in Usage (kWh/mo)	Adjusted Usage (kWh)	Approx. Monthly Savings	Approx. Annual Savings
Home Energy House Call with Kit	1,000	81	919	\$6.71	\$80.51
6 CFLs	1,000	32	968	\$2.66	\$31.87
Smart Saver Central A/C	1,000	70	930	\$5.82	\$69.89
				\$15.19	\$182.27
				\$1.74	\$20.83
				\$13.45	\$161.44

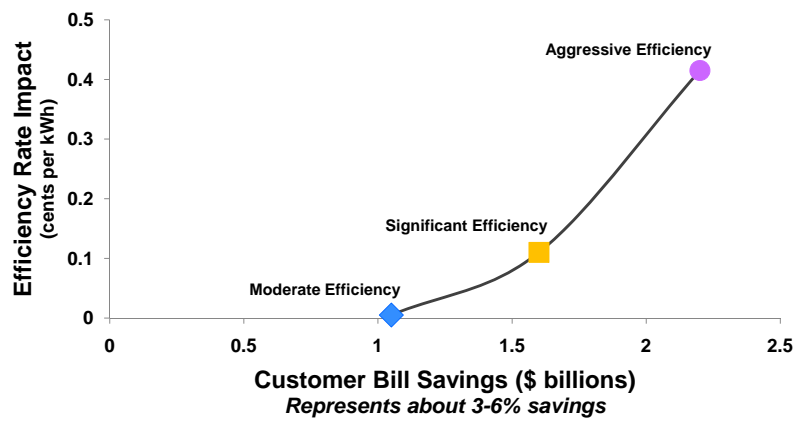
Gross Customer Benefit
Approximate Rider Expense
Net Benefit to Customer After Rider

NOTES: Assumes residential tail block rate = \$0.083/kWh
 Assumes energy efficiency rider = \$0.001736/kWh
 Assumes typical residential customer uses (on average) 1,000 kWh per month

Raiford Smith, Duke Energy Carolinas, Docket 2009-226-E, December 2, 2009

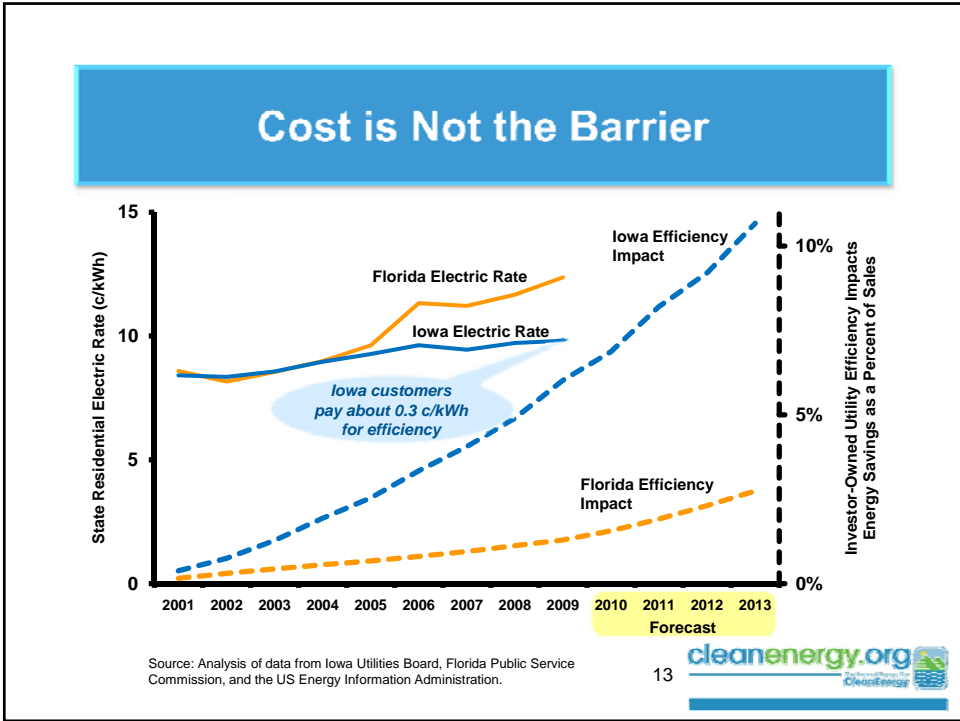


Cost is Not the Barrier: Analysis of a Southwest Utility



Source: Cappers et al., "Financial Analysis of Incentive Mechanisms to Promote Energy Efficiency: Case Study of a Prototypical Southwest Utility," LBNL-1598E (March 2009).





If it's so cheap, why . . . ?

Table 2.1 - Members of the National Action Plan for Energy Efficiency	
State	Organization
Alabama	Alabama Energy Efficiency Council
Alaska	Alaska Energy Efficiency Council
Arizona	Arizona Energy Efficiency Council
Arkansas	Arkansas Energy Efficiency Council
California	California Energy Efficiency Council
Colorado	Colorado Energy Efficiency Council
Connecticut	Connecticut Energy Efficiency Council
Delaware	Delaware Energy Efficiency Council
Florida	Florida Energy Efficiency Council
Georgia	Georgia Energy Efficiency Council
Hawaii	Hawaii Energy Efficiency Council
Idaho	Idaho Energy Efficiency Council
Illinois	Illinois Energy Efficiency Council
Indiana	Indiana Energy Efficiency Council
Iowa	Iowa Energy Efficiency Council
Kansas	Kansas Energy Efficiency Council
Kentucky	Kentucky Energy Efficiency Council
Louisiana	Louisiana Energy Efficiency Council
Maine	Maine Energy Efficiency Council
Maryland	Maryland Energy Efficiency Council
Massachusetts	Massachusetts Energy Efficiency Council
Michigan	Michigan Energy Efficiency Council
Minnesota	Minnesota Energy Efficiency Council
Mississippi	Mississippi Energy Efficiency Council
Missouri	Missouri Energy Efficiency Council
Montana	Montana Energy Efficiency Council
Nebraska	Nebraska Energy Efficiency Council
Nevada	Nevada Energy Efficiency Council
New Hampshire	New Hampshire Energy Efficiency Council
New Jersey	New Jersey Energy Efficiency Council
New Mexico	New Mexico Energy Efficiency Council
New York	New York Energy Efficiency Council
North Carolina	North Carolina Energy Efficiency Council
North Dakota	North Dakota Energy Efficiency Council
Ohio	Ohio Energy Efficiency Council
Oklahoma	Oklahoma Energy Efficiency Council
Oregon	Oregon Energy Efficiency Council
Pennsylvania	Pennsylvania Energy Efficiency Council
Rhode Island	Rhode Island Energy Efficiency Council
South Carolina	South Carolina Energy Efficiency Council
South Dakota	South Dakota Energy Efficiency Council
Tennessee	Tennessee Energy Efficiency Council
Texas	Texas Energy Efficiency Council
Utah	Utah Energy Efficiency Council
Vermont	Vermont Energy Efficiency Council
Virginia	Virginia Energy Efficiency Council
Washington	Washington Energy Efficiency Council
West Virginia	West Virginia Energy Efficiency Council
Wisconsin	Wisconsin Energy Efficiency Council
Wyoming	Wyoming Energy Efficiency Council

- Lack of information, awareness
- Lack of capital
- Utility financial regulation – disincentive to utility support
- Utility planning policy – energy efficiency not equal to supply resources
- Efficiency programs not up to date
- Transaction costs
- “Split-incentive” or “Principal-Agent” problem

National Action Plan for Energy Efficiency (July 2006)

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Efficiency Barrier Example: “Principal-Agent” Problem

- **One party (the agent) makes decisions affecting end-use energy efficiency**
- **A different party (the principal) bears the consequences of those decisions**
 - Builders affect homebuyers
 - Owners affect tenants (commercial & residential)
 - One department makes decisions, another pays bills
- **“some 50% of total US residential energy usage is subject to the PA barrier”**

Prindle, Bill, *Quantifying the Effects of Market Failures in the End-Use of Energy*, ACEEE for International Energy Agency (February 2007).
Murtishaw, Scott and Jayant Sathaye, *Quantifying the Effect of the Principal-Agent Problem on US Residential Energy Use*, Lawrence Berkeley National Laboratory, Report LBNL-59773 (August 2006).

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Why Does the South Lag Other Regions in Energy Efficiency?

- **Myths:**
 - Low electric rates make efficiency infeasible
 - Low-income people are an obstacle*
- **Reality: The South lacks . . .**
 - legislative standards similar to those adopted in many states
 - utility regulatory commission support
 - high quality programs, with economies of scale to achieve low costs
 - interest of utility management
 - rate structures that promote efficiency
 - financial incentives for utility success (utilities face disincentives)

* “These low-income households are truly unable to participate in any energy efficiency and conservation efforts.” – *Testimony of South Carolina Public Service Commissioner David A. Wright before the Senate Energy and Natural Resources Committee on a national Renewable Portfolio Standard*, February 10, 2009.

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