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Energy Efficiency: The Southeast Considers Its Options

John D. Wilson, Southern Alliance for Clean Energy

**NAESCO Southeast Regional Workshop
September 2010**

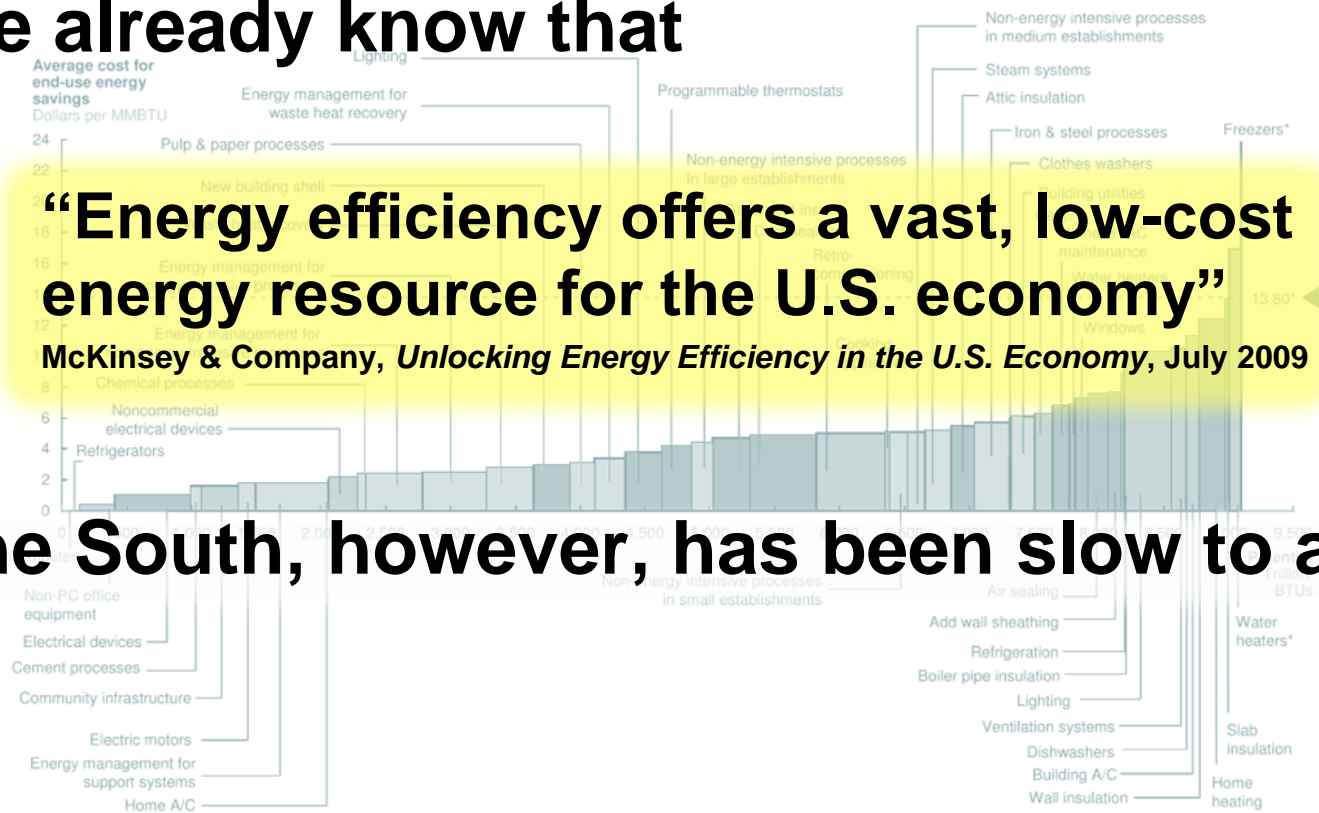
Why is energy efficiency an “issue” in the Southeast?

- 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.



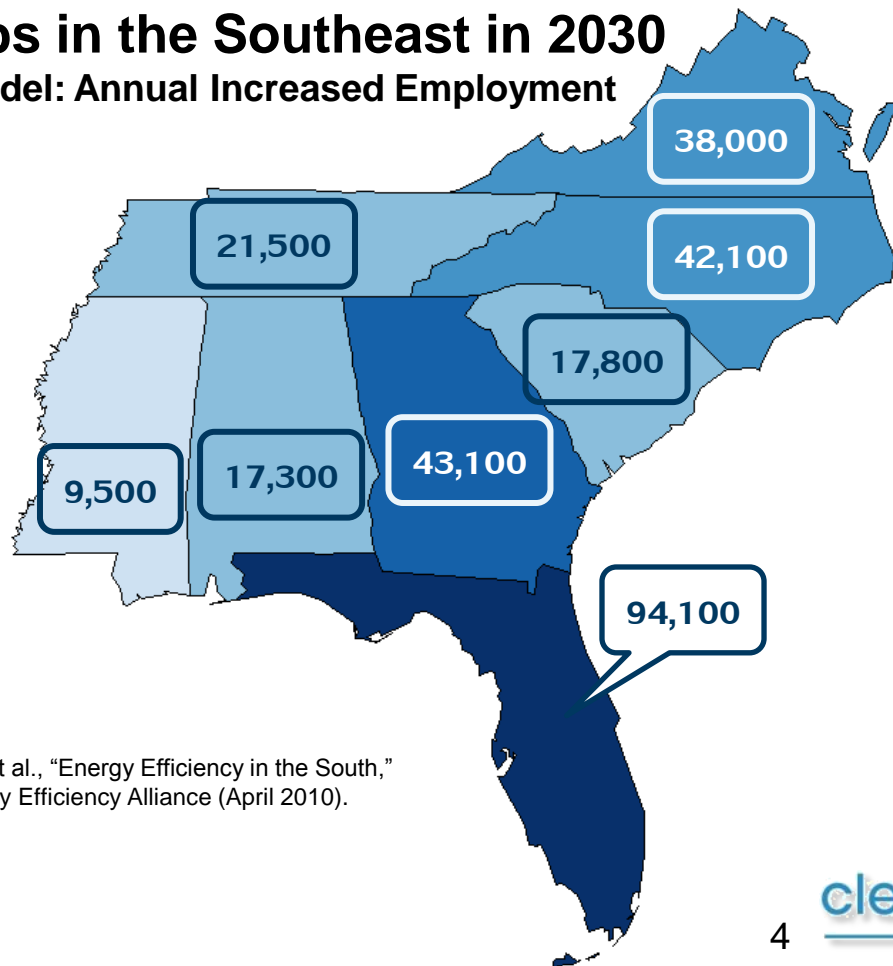
“Efficiency in the South” means ...

- **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**

Jobs, Jobs, Jobs

283,000 Jobs in the Southeast in 2030

ACEEE Jobs Model: Annual Increased Employment

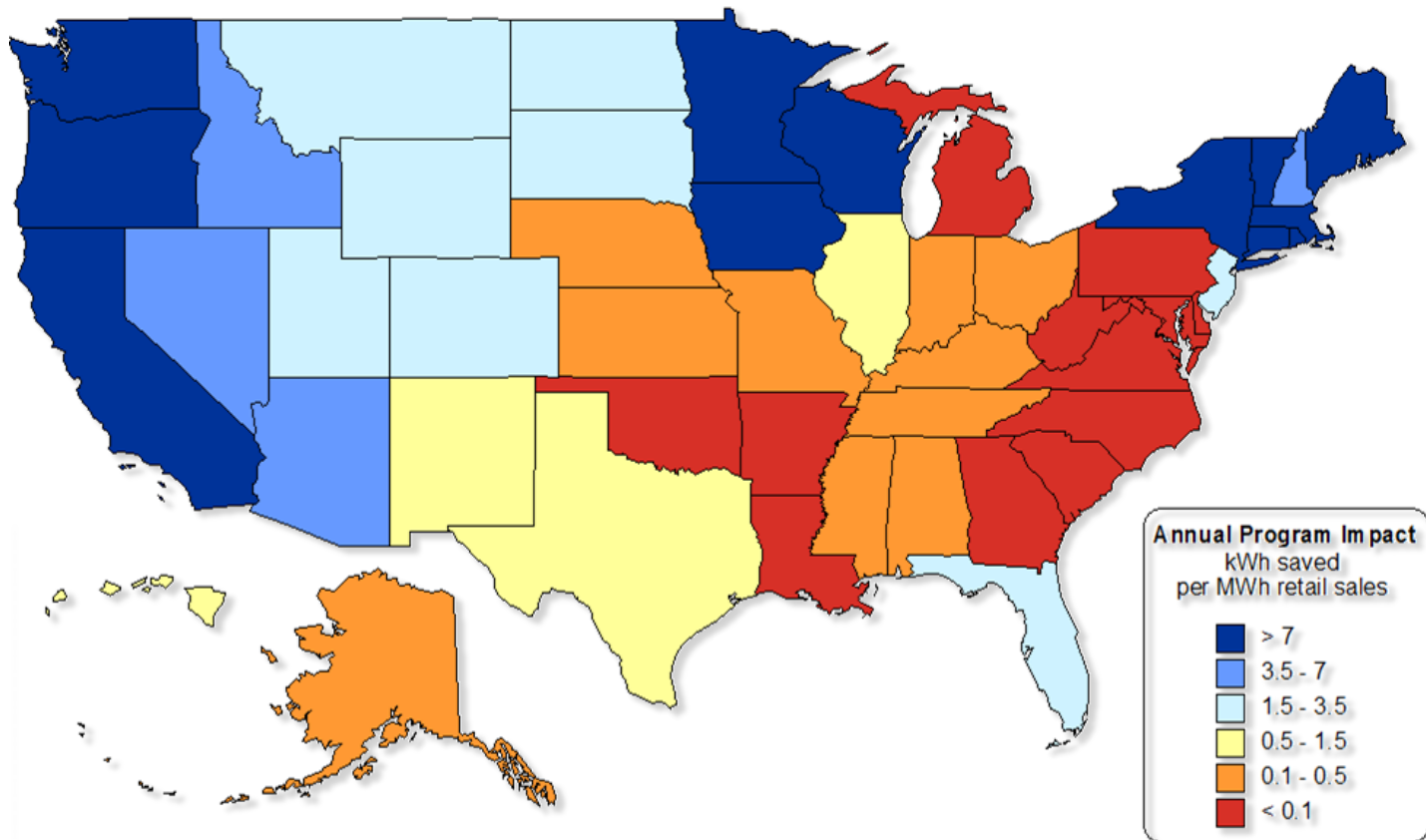


Source: Brown et al., "Energy Efficiency in the South,"
Southeast Energy Efficiency Alliance (April 2010).

Efficiency, a great idea! (Right?)

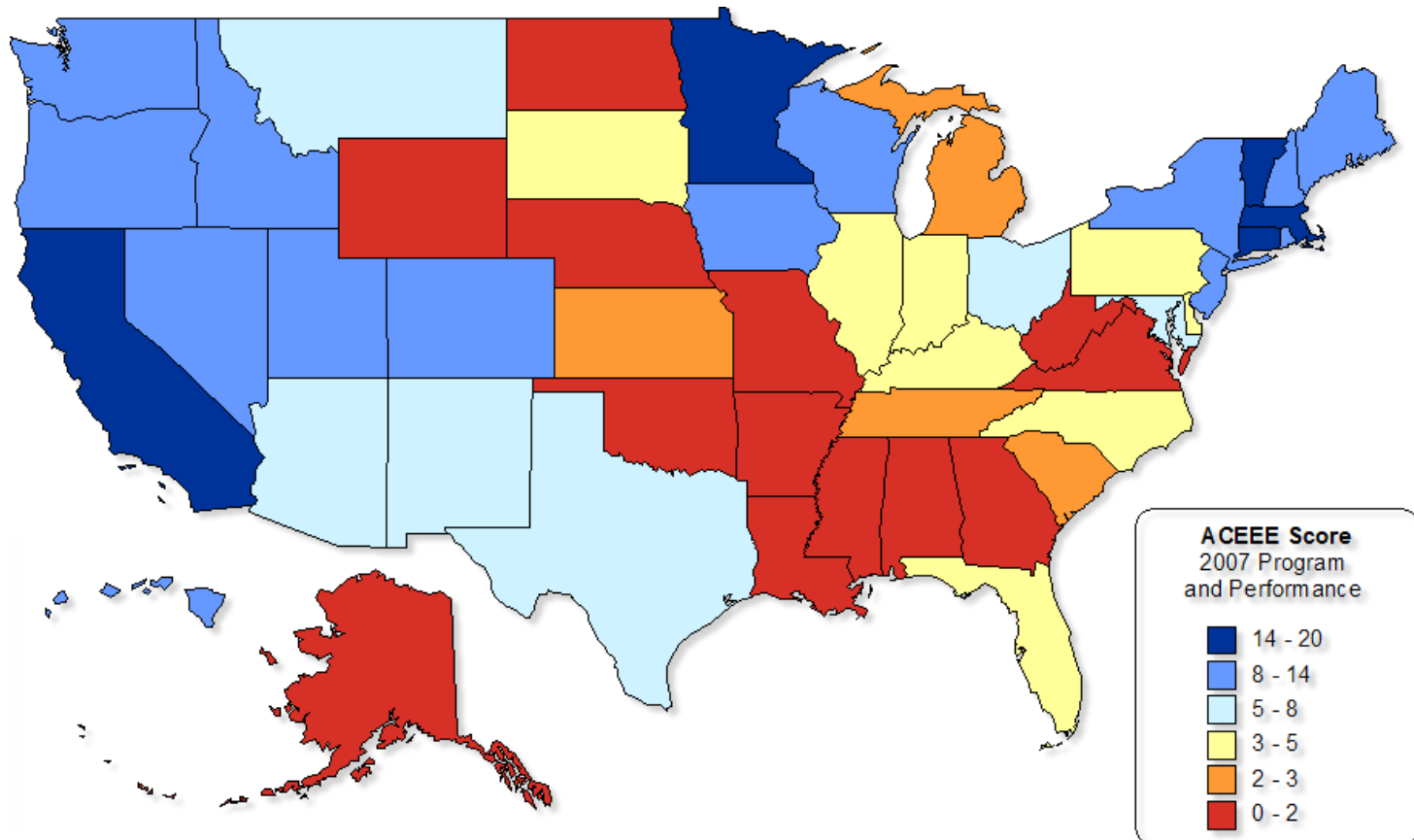


South Lags the Nation: Energy Efficiency Program Impacts, by State (2007)



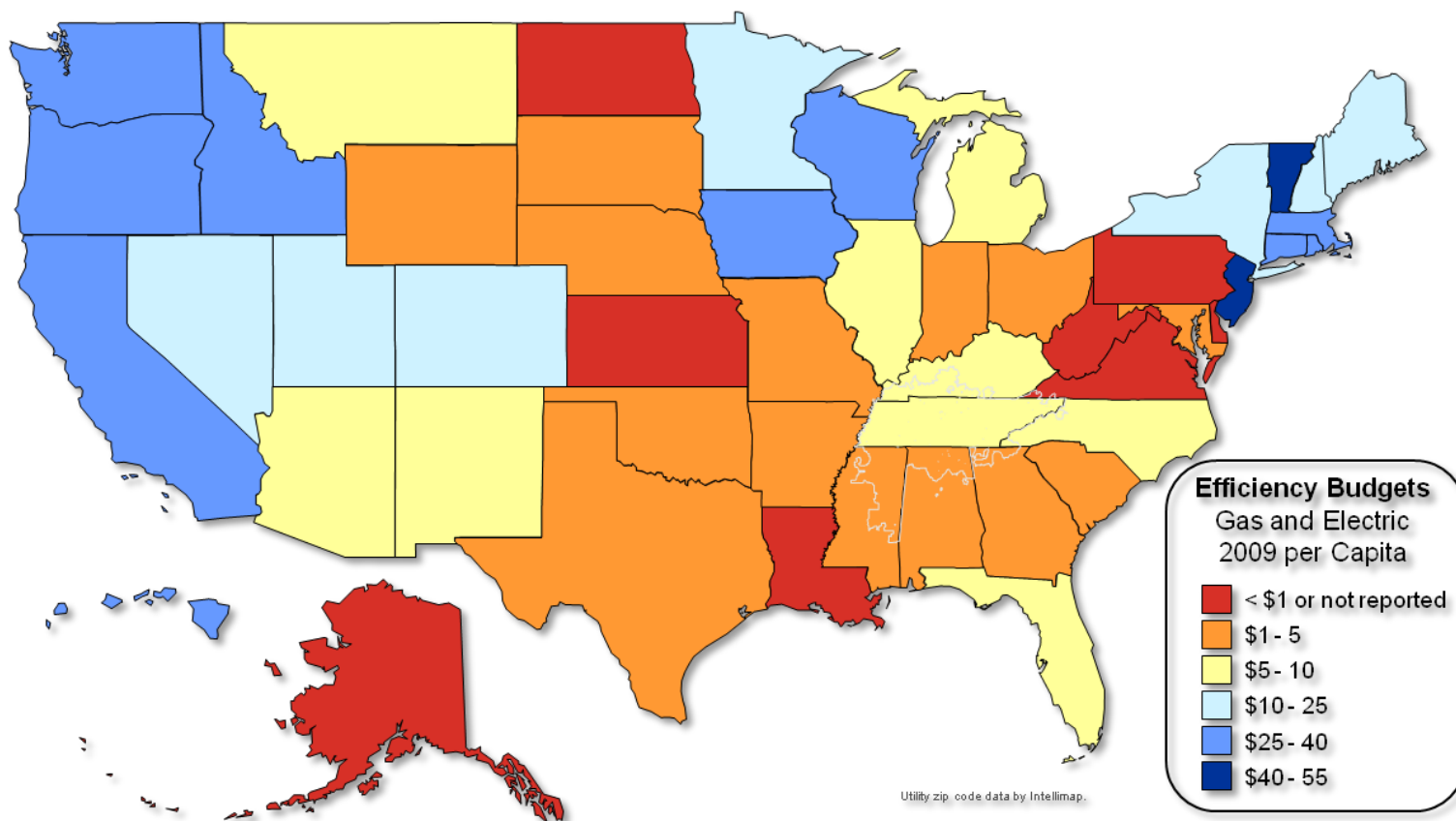
Sources: EIA Form 861; ACEEE, *Meeting Aggressive New State Goals for Utility-Sector Energy Efficiency*.

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



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

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*.



Notes: Load management budget data not included. SACE allocated multi-state budgets to states. BPA/NEEP budgets allocated based on state population. TVA budget allocated based on its kWh sales by state.

New Government Efficiency Policies: Things are looking ...

TVA Chief Executive Officer Outlines TVA's Vision and Strategy for Future Operations

TVA Board: 50% increase for 2011 EE budget

KNOXVILLE, Tenn. – The Tennessee Valley Authority Board of Directors on Friday adopted a renewed vision for TVA's future. The board also approved a 50 percent increase in the TVA's energy efficiency budget for 2011.

"TVA's basic mission has not changed, but the way we go about it has. We are now focused on providing clean, reliable, and efficient energy to our customers."

North Carolina state energy office
Ensuring a sustainable energy future

NC Healthy Homes Program

ENERGY POLICY COUNCIL

North Carolina Energy Policy Council

Below is information from the North Carolina Energy Policy Council meeting on Thursday, April 29, 2010.

NC & SC studying new EE policies

- Near term recommendations
- Building codes recommendations
- Suggested support for energy efficiency
- Suggested Energy Efficiency Resource Standard
- Review of ACSEE National Energy Efficiency Study
- Overview of Energy Efficiency Programs

March 18, 2010
Energy Policy Council



Georgia Public Service Commission

GA PSC: New programs will "help to lead Georgia out of the bottom"

PSC Approves Order to Rescind Georgia Power Company 2010 Integrated Resource Plan (IRP) Filing in Docket 11087

ATLANTA, July 6, 2010 – The Georgia Public Service Commission today ordered the Georgia Power Company to rescind its 2010 Integrated Resource Plan (IRP) filing in Docket 11087. The order was issued by a 4-1 vote.

"We are making decisions that will help to lead Georgia out of the bottom," said Commissioner [Name]. "We are making decisions that will help to lead Georgia out of the bottom."

The McGraw-Hill Companies

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Florida PSC orders utilities to submit efficiency plans

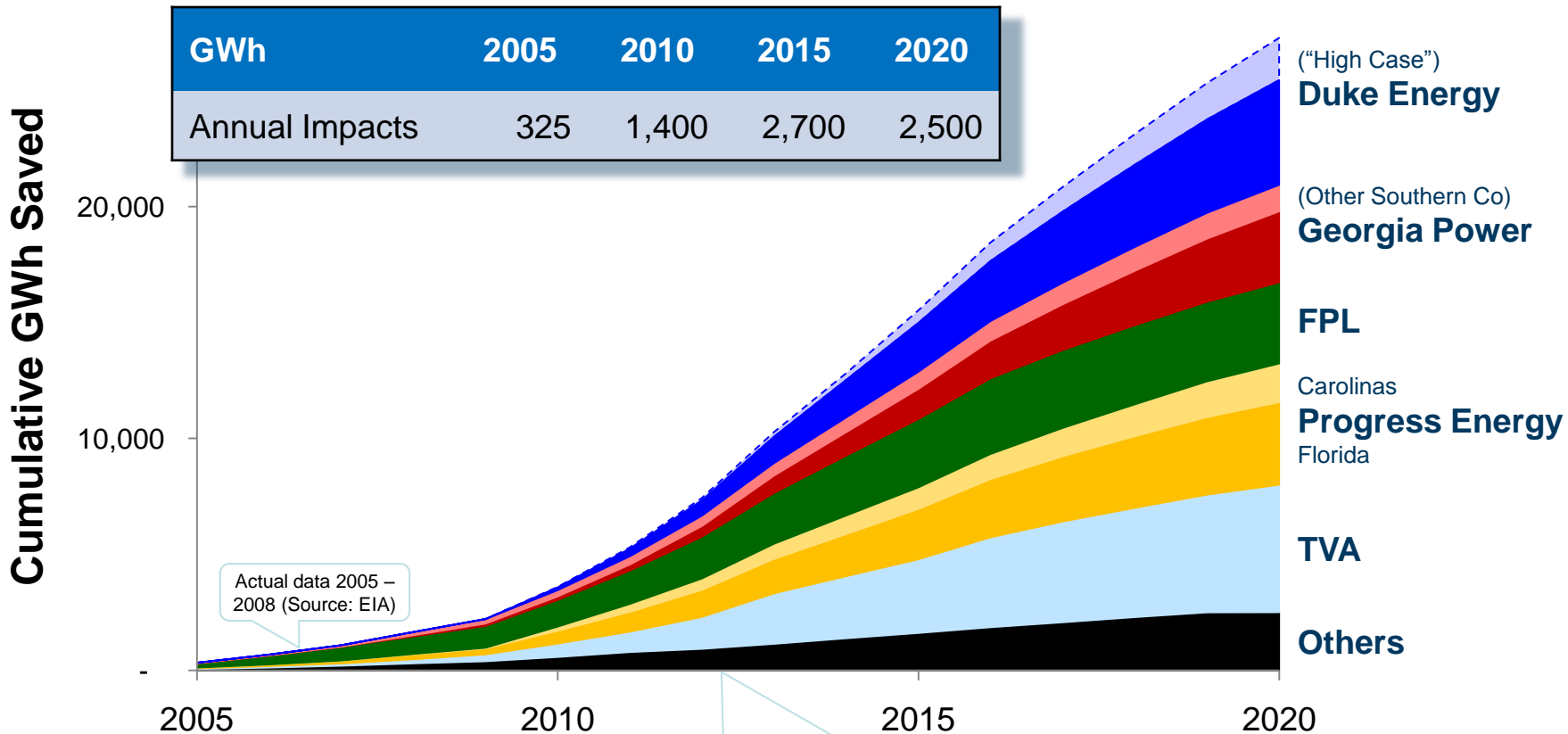
FL PSC: "inertia of the past" vs "innovation of the future"

A unanimous Florida Public Service Commission Tuesday ordered Progress Energy Florida, Tampa Electric and Gulf Power to submit efficiency and demand side management plans to the commission within 30 days.

PSC staff had determined that the utilities' current plans were not aggressive enough to meet the commission's goals.

The PSC also directed Progress Energy, Tampa Electric and Gulf Power to submit a significantly reduced energy efficiency plan that is more realistic and cost effective. The utilities must submit new plans within 30 days of the PSC's written order.

Coming Increases in Utility Energy Efficiency Programs



Cumulative utility program impacts assume:

- Achievement of commission goals or resource plan estimates
- Continuation of prior annual savings if no goals or resource plan
- Program impacts last 12 years

Bright Spot: Duke Energy Carolinas

- **Overall, first quarters of full program deployment show:**
 - Impacts exceeding expectations
 - Costs below expectations: Cost of saved energy is 14 ¢ / annual kWh
 - Too early to say if this trend will continue
- **Lighting leading impacts**
- **Residential assessments and HVAC / heat pumps higher than expected**
- **Trade ally network critical in marketing**

Duke Energy Carolinas, *Duke Energy's Carolinas Energy Efficiency Results Through March, 2010*, report to Carolinas Energy Efficiency Collaborative, June 4, 2010.

Underutilized Programs: A Few Examples

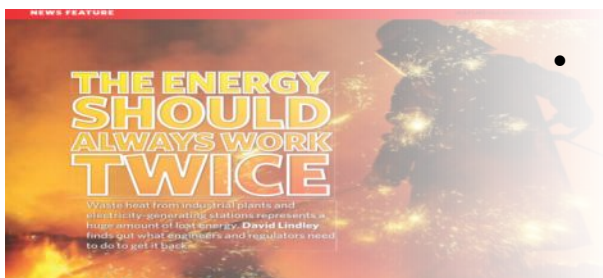
Last 3 Months Neighbor Comparison | You used 32% MORE than your efficient neighbor



* kWh: A 100-Watt bulb burning for 10 hours uses 1 kilowatt-hour.

- **Home Energy Comparison Report**

- Typically 2% savings, virtually immediate
- Links customers to broader offerings
- GRU, plus pilots by Duke & Gulf

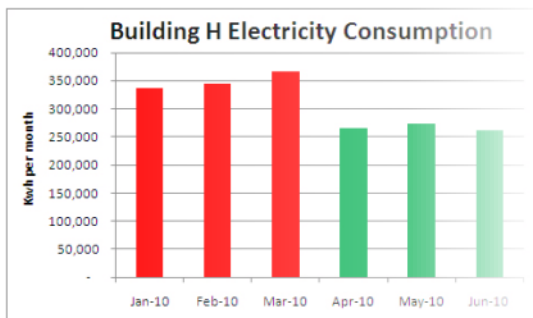


- **Energy recycling** (including combined heat & power)

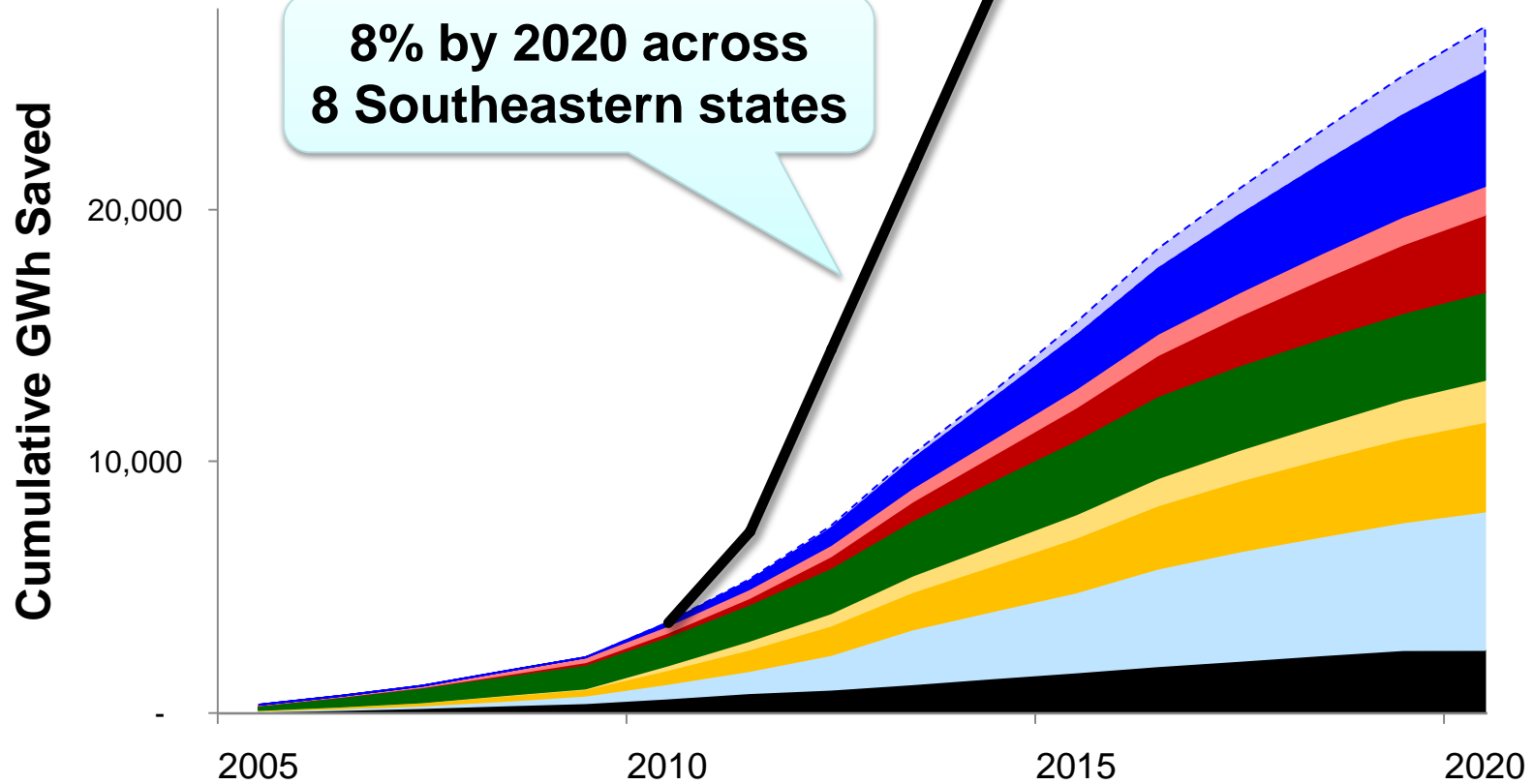
- Tends to fall through the cracks (pushed?)
- **New** 35% state tax credit in North Carolina

- **Building recommissioning**

- Often missing from efficiency potential studies
- Not yet offered in Southeast
- Offered in many states (examples: AZ, CO, IA)

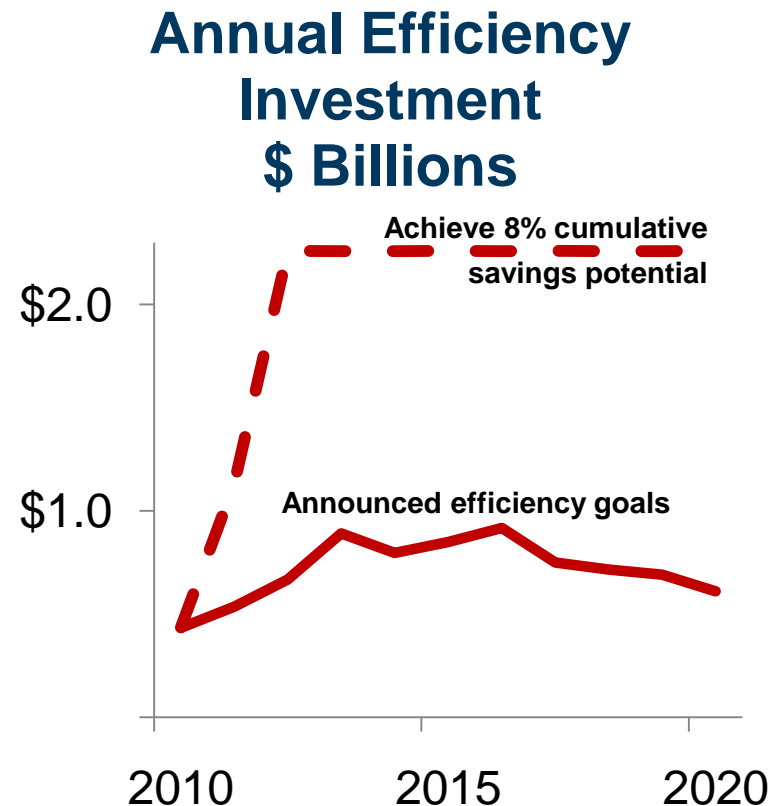


Utility Efficiency Goals Are NOT Ambitious



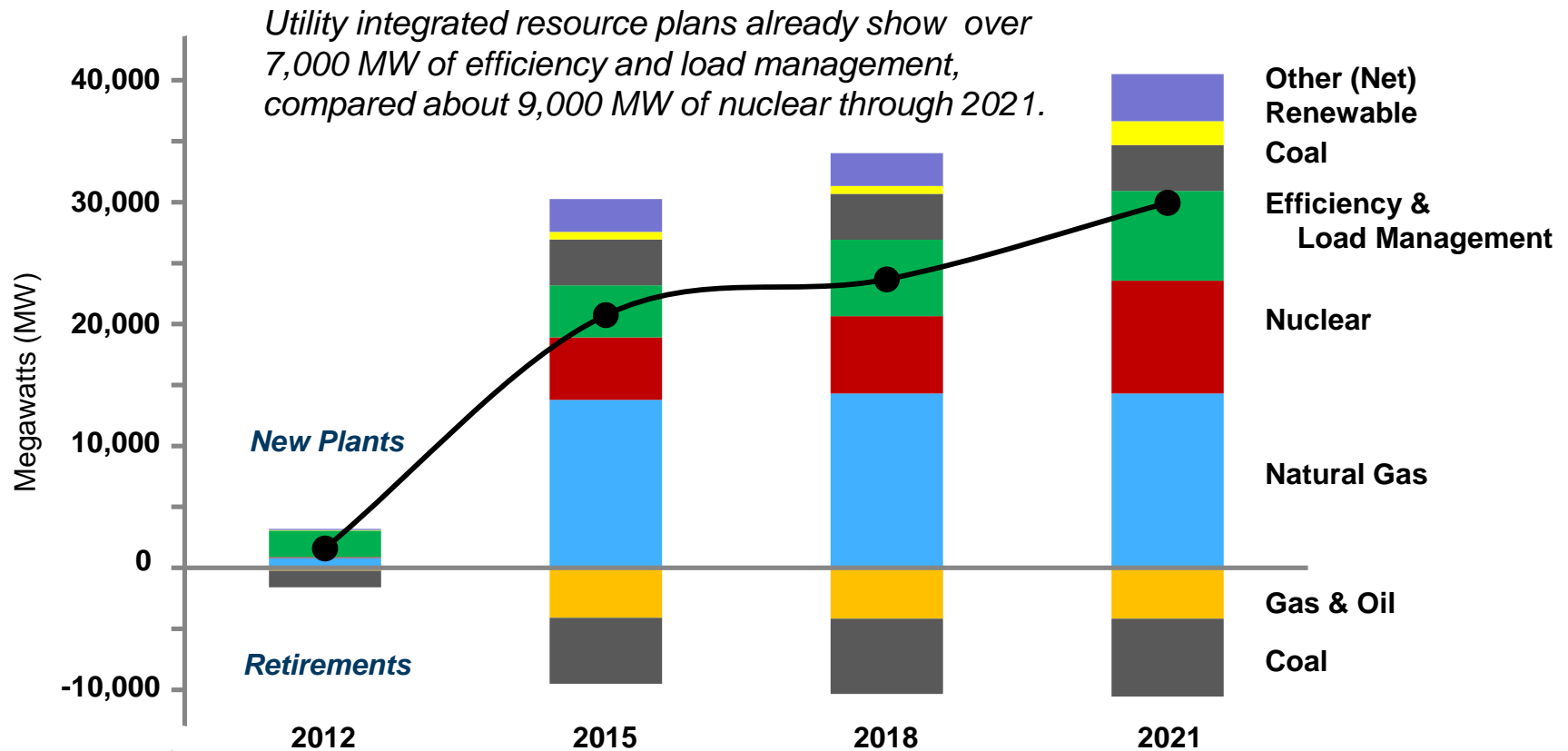
Opportunities for Southeast Efficiency Businesses

- **2009 efficiency budgets: \$304 million**
 - Plus \$345 million for load management
- **2008 saved energy cost: ~ 31¢ / annual kWh**
 - High cost driven by FL
- **Efficiency budgets ~ \$1 billion / year**
 - Based on announced goals



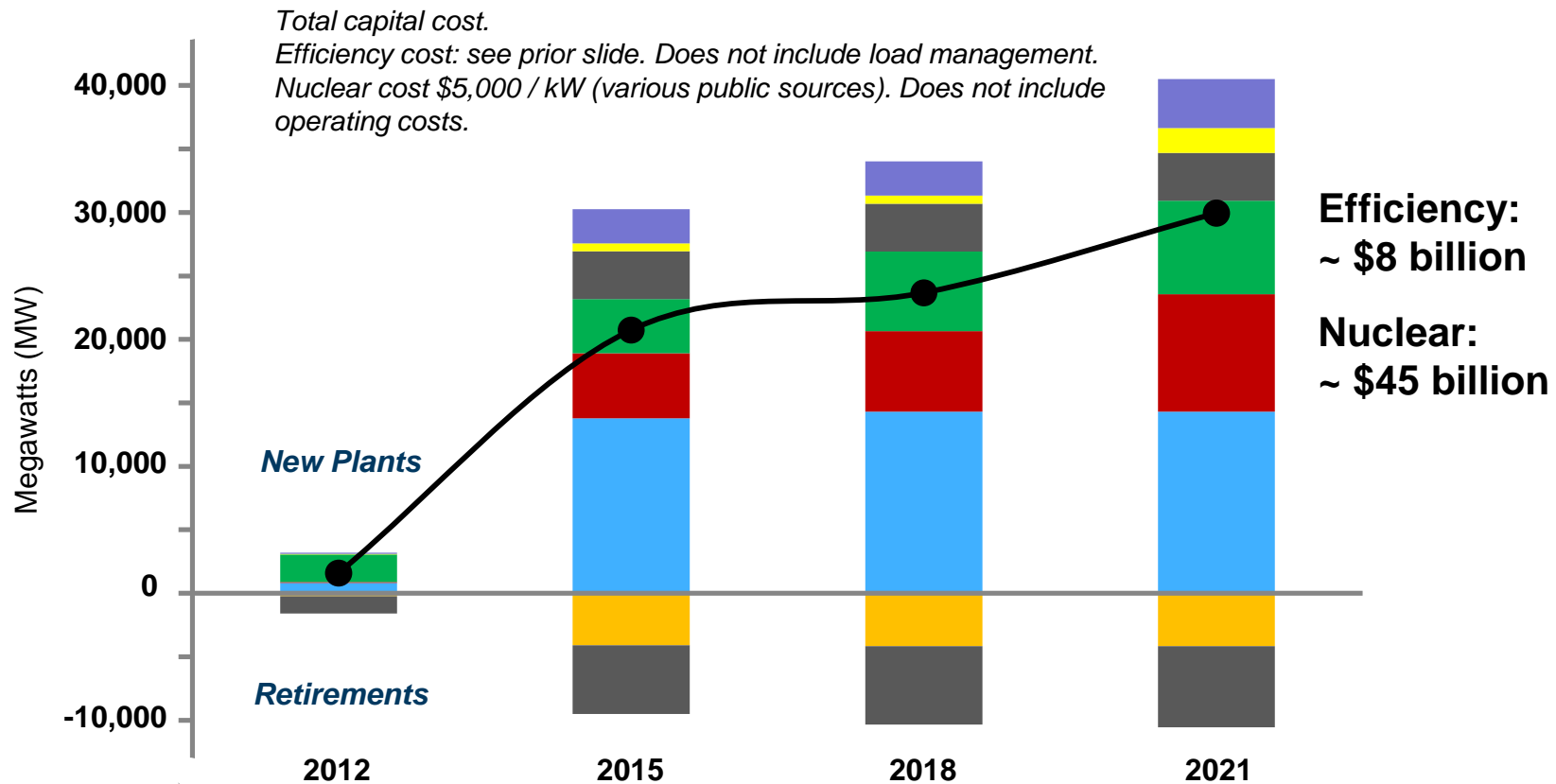
Sources, cost and budget data: CEE, *The State of the Efficiency Program Industry: Budgets, Expenditures and Impacts, 2009*; 2008 annual energy savings calculated from US Energy Information Administration data.

Efficiency & Load Management Catching Up With Nuclear



Source: SACE analysis of utility resource plans in the Carolinas, Georgia, Florida and Tennessee Valley Authority.

... but Nuclear Requires 5x the Investment



Source: SACE analysis of utility resource plans in the Carolinas, Georgia, Florida and Tennessee Valley Authority.

Nuclear Energy vs Energy Efficiency?

- ***Of course nuclear energy is an obstacle***
 - Utility planning practices put nuclear energy first
 - Utility earnings opportunities put nuclear energy first
- **When nuclear energy goes first**
 - Sucks all the “air” (capital) out of the room
 - Drives rate impacts of energy efficiency up
 - Dominates transmission planning analysis
- **In fact, utilities (and their consultants) are extremely reluctant to have open discussions with SACE because we aren’t on the “nuclear bandwagon”**

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.

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



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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	Gross Customer Benefit
				\$1.74	\$20.83	Approximate Rider Expense
				\$13.45	\$161.44	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

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

Table ES-1. Members of the National Action Plan for Energy Efficiency

Co-Chairs		
Shane Morris	Member, President	Ohio Utilities Board
Jan Rogers	President and Chief Executive Officer	National Association of Regulatory Utility Commissioners Duke Energy
Leadership Group		
Berry Bloomer	Senior Vice President	Sandrine Systems, LLC
Angela S. Butler	Director of Energy Regulation	Wall Mart Stores, Inc.
Bruce Eshane	Vice President, Strategic Policy Analysis	American Electric Power
Jeff Burke	Director of Environmental Sustainability	PM Resources
Karen Calabrese	President	Alliance to Save Energy
Eden Carson	General Manager	Wesley Light and Power
Jorge Carrasco	Superintendent	Seattle City Light
Lionel Carter	President and Chief Executive Officer	Service Center
Nath Case	Vice President for Business Performance	Baltimore Gas and Electric
Sally Carroll	Manager of Resource Planning and Member Services	Great River Energy
Larry Dawkins	Chairman and Chief Executive Officer	New Jersey Natural Gas
Roger Duncan	Deputy General Manager, Distributed Energy Services	New Jersey Resources Corporation
Angelo Espinoza	Senior Vice President, Energy Services and Technology	Austin Energy
William Flynn	Chairman	New York Power Authority
Marina Fox	President	New York State Public Service Commission
Anne George	Commissioner	New Jersey Board of Public Utilities
Steve Greenleaf	Commissioner	Connecticut Department of Public Utility Control
Bar Hamilton	Policy Director	California Public Utilities Commission
Leonard Hedges	Executive Vice President, Supply Technologies, Renewables, and Demand Side Planning	Vermont Energy Investment Corporation
Mary Healy	Consumer Counselor for the State of Connecticut	Southern Company
Robert Hines	Vice President, Environment, Health and Safety	Connecticut Consumer Council
Chris Jones	Chairman	Edison
Ruth Kneip	Director of Corporate Communications	Connecticut Department of Environmental Protection
Peter Landrum	Vice President, Sales and Marketing	Food Lion
Mark Lashauer	Manager of Energy Efficiency	Energy Corporation
Mark McGuffey	Consumer Counselor	Mid-American Energy Company
Michael Miller	Commissioner	Iron Mountain and Transmission Association, Inc.
Brack Nicholson	Deputy Director, Division of Air Quality	Office of the Ohio Consumer Counselor
Pat O'Neil	Commissioner	Director of Columbia Public Service Commission
Douglas Pettit	Vice President, Government Affairs	North Carolina Air Office
Bill Pridle	Deputy Director	Washington Utilities and Transportation Commission
Phyllis Rife	Commissioner	Western Corporation
Robert Rose	Director, Customer Energy Efficiency	American Council for an Energy Efficient Economy
Gene Rodriguez	Director, Energy Efficiency	Minnesota Public Utilities Commission
Art Rosenfeld	Commissioner	Pacific Gas and Electric
Jan Schell	General Manager	Southern California Edison
Larry Shiller	Division Director	California Energy Commission
Michael Shore	Senior Air Policy Analyst	Sacramento Municipal Utility District
Gordon Slack	Energy Business Director	North Carolina Energy Office
Deb Sander	Director, Business Product Marketing	Environmental Defense
Rob Taylor	Director	The Dow Chemical Company
Paul van Raumgarten	Director, Energy and Environmental Affairs	Xcel Energy
Beretta Watson	Executive Director, National Property Management	New York State Energy Conservation Office
Dawn Wang	Director, California Energy Program	Intertek Controls
Steve Ward	Public Advocate	USA Realty Company
Mike Woodard	Vice President, Energy Efficiency	National Resources Defense Council
Tam Wroble	Vice President, External Affairs	State of Maine
Henry Yulishura	Manager of energy efficiency Green Power South	Bonneville Power Administration
	Manager, Demand Response	FIM Interconnection
		Service Utility Authority
		ISO New England Inc.
Observers		
James W. (Jay) Breyer	Counsel	Steel Manufacturers Association
Roger Casper	Executive Vice President, Policy and Planning	American Gas Association
Dan DeLuca	Executive Director	Demand Response Coordinating Committee
Roger Fugate	Deputy Director	Council of Energy Resource Policy
Jeff Garrow	General Counsel	National Association of State Energy Officials
Donald Gilligan	President	National Association of Energy Service Companies
Chuck Gray	Executive Director	National Association of Regulatory Utility Commissioners
John Hall	Senior Manager of Generation and Fuel	National Rural Electric Cooperative Association
Joseph Mattingly	Vice President, Secretary and General Counsel	Gas Appliance Manufacturers Association
Kenneth Mercer	President and Chief Executive Officer	North American Insulation Manufacturers Association
Christine Mudd	Executive Director	National Council on Electricity Policy
David Neill	Director, Public/Private Partnerships	Electric Power Research Institute
Alan Richardson	President and Chief Executive Officer	American Public Power Association
Steve Rosenstock	Manager, Energy Solutions	Edison Electric Institute
Dawn Shea	Executive Director	National Association of State Energy Officials
Rob Torgelson	Director, Retail Distribution Policy	Edison Electric Institute
Mark Walle	Executive Director	Energy Programs Consortium

- 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)

Efficiency Barrier Example: Split Incentives Problem

- **One party makes decisions affecting end-use energy efficiency**
- **A different party 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 [split incentives problem]”**

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).

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 has lacked . . .**

- 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)
- customer-friendly financial structures (performance contracting, etc.)

* “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.

What can you and your companies do?

- Advocate for **legislative standards** similar to those adopted in many states
- Educate and **build utility regulatory commission support**
- Offer **high quality programs** to utilities, with economies of scale to achieve low costs
- Pique the **interest of utility management**
- Advocate for **rate structures that promote efficiency**
- Advocate for **financial incentives for utility success** (utilities face disincentives)
- Advocate for customer-friendly financial structures (**performance contracting**, etc.)

About SACE:

Southern Alliance for Clean Energy

- **Southern Alliance for Clean Energy promotes responsible energy choices that create global warming solutions and ensure clean, safe and healthy communities throughout the Southeast.**
 - Climate Action Strategies
 - Clean Energy
 - Clean Fuels / Transportation
 - Energy Efficiency
 - High Risk Energy Choices
- **The Energy Efficiency program is working to promote**
 - Resource standards achieving all cost-effective energy efficiency
 - Sustainable efficiency programs which take advantage of “economy of scale” to enhance cost-effectiveness
 - Performance-based financial incentives for utility-led energy efficiency
 - Energy recycling, including combined heat and power
 - Energy efficiency as an equal to supply-side resources



*Thank you for your time
and attention!*

John D. Wilson

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