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Southern Alliance for
Clean Energy



Energy Efficiency: The Southeast Considers Its Options

John D. Wilson, Southern Alliance for Clean Energy

NAESCO Southeast Regional Workshop

September 2010

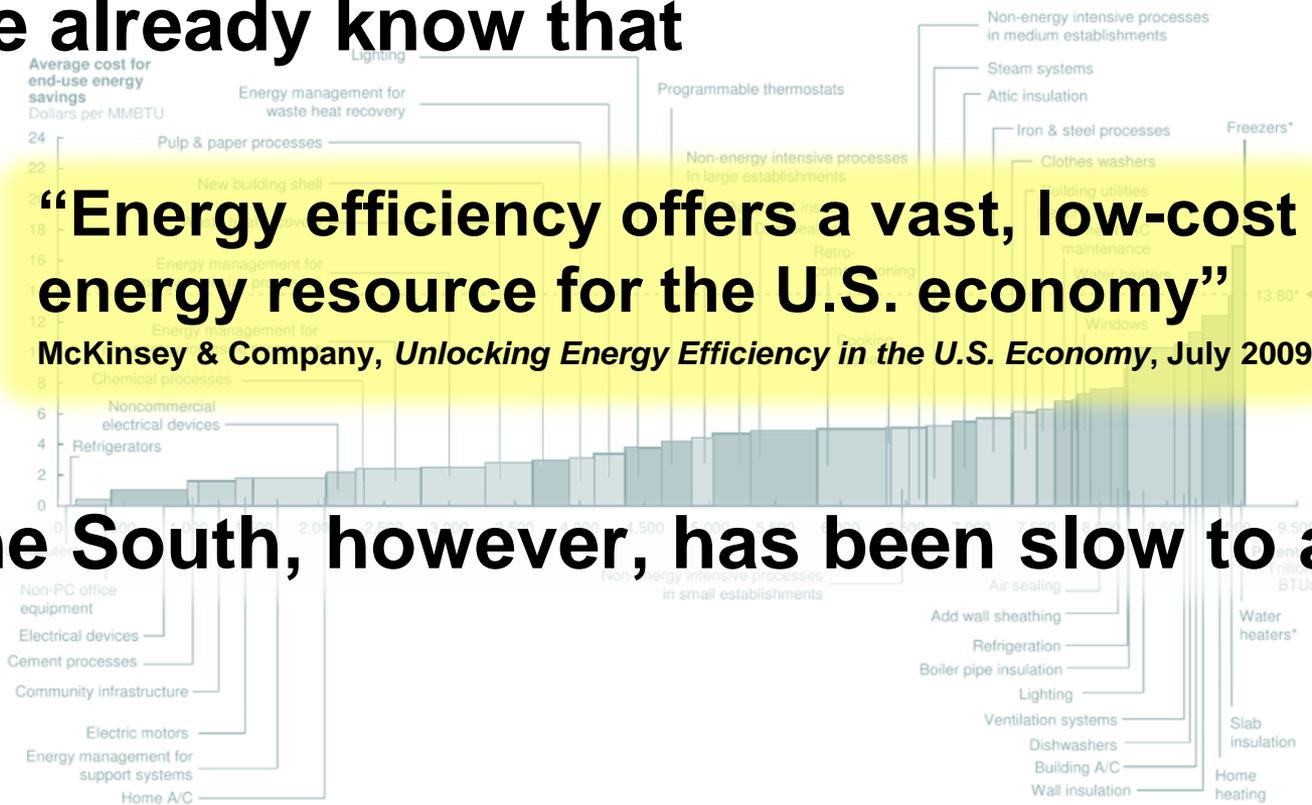
Why is energy efficiency an “issue” in the Southeast?

- 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.



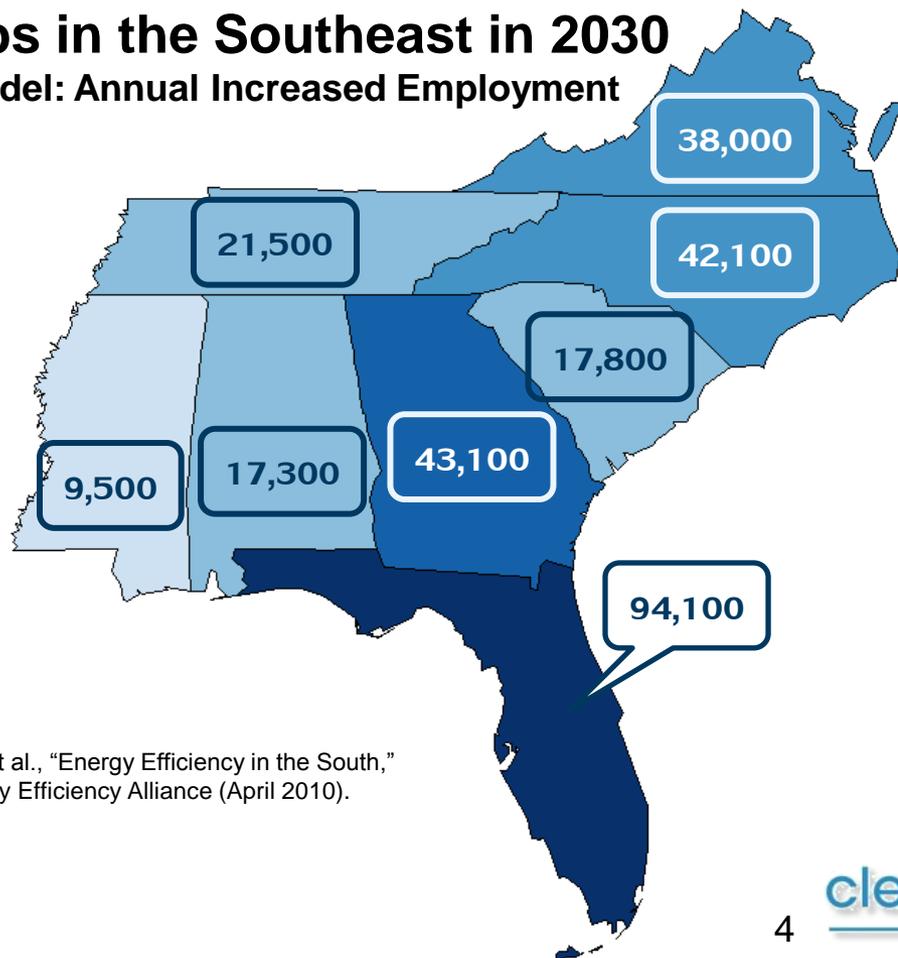
“Efficiency in the South” means ...

- **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

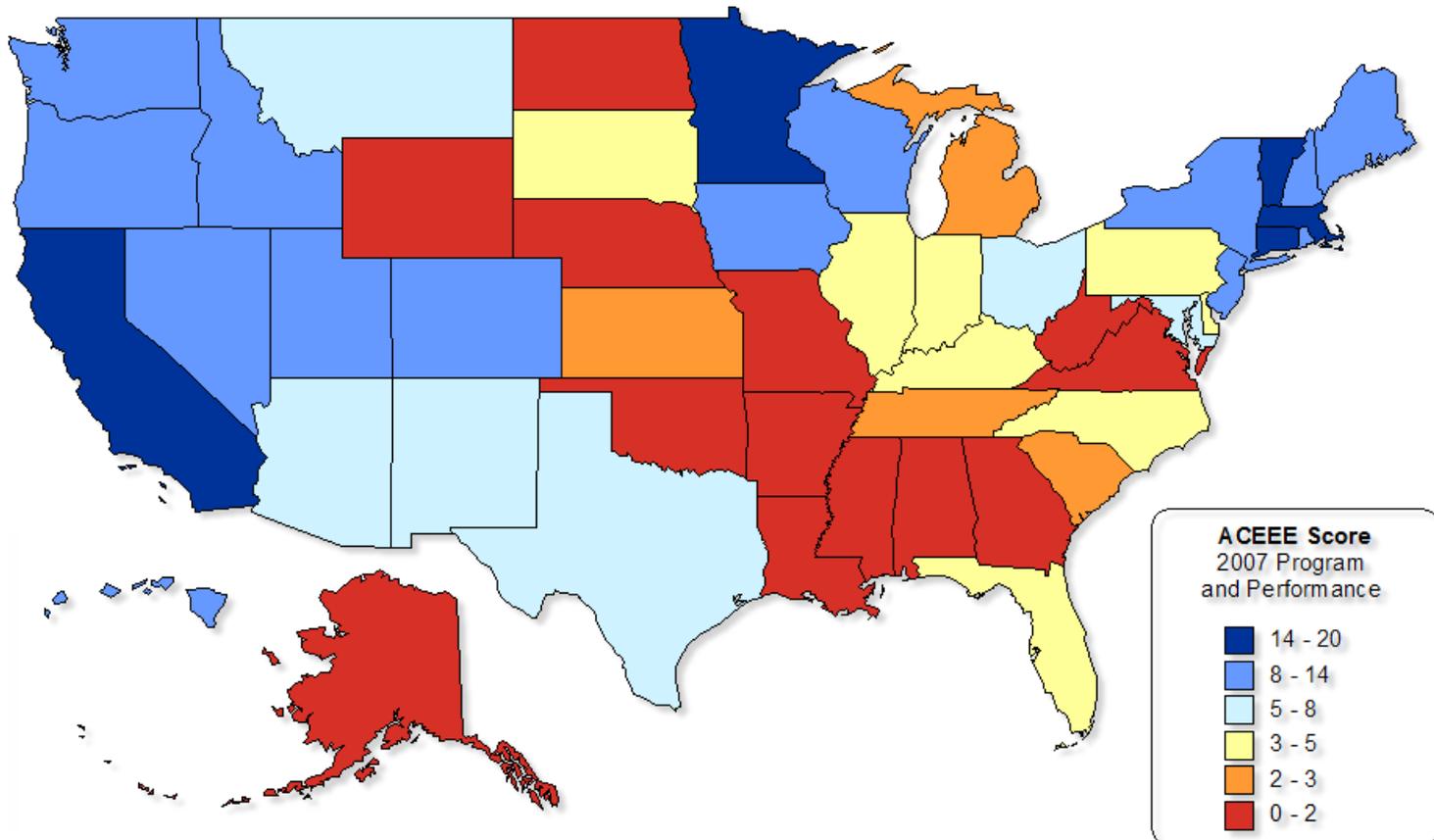


Source: Brown et al., "Energy Efficiency in the South," Southeast Energy Efficiency Alliance (April 2010).

Efficiency, a great idea! (Right?)



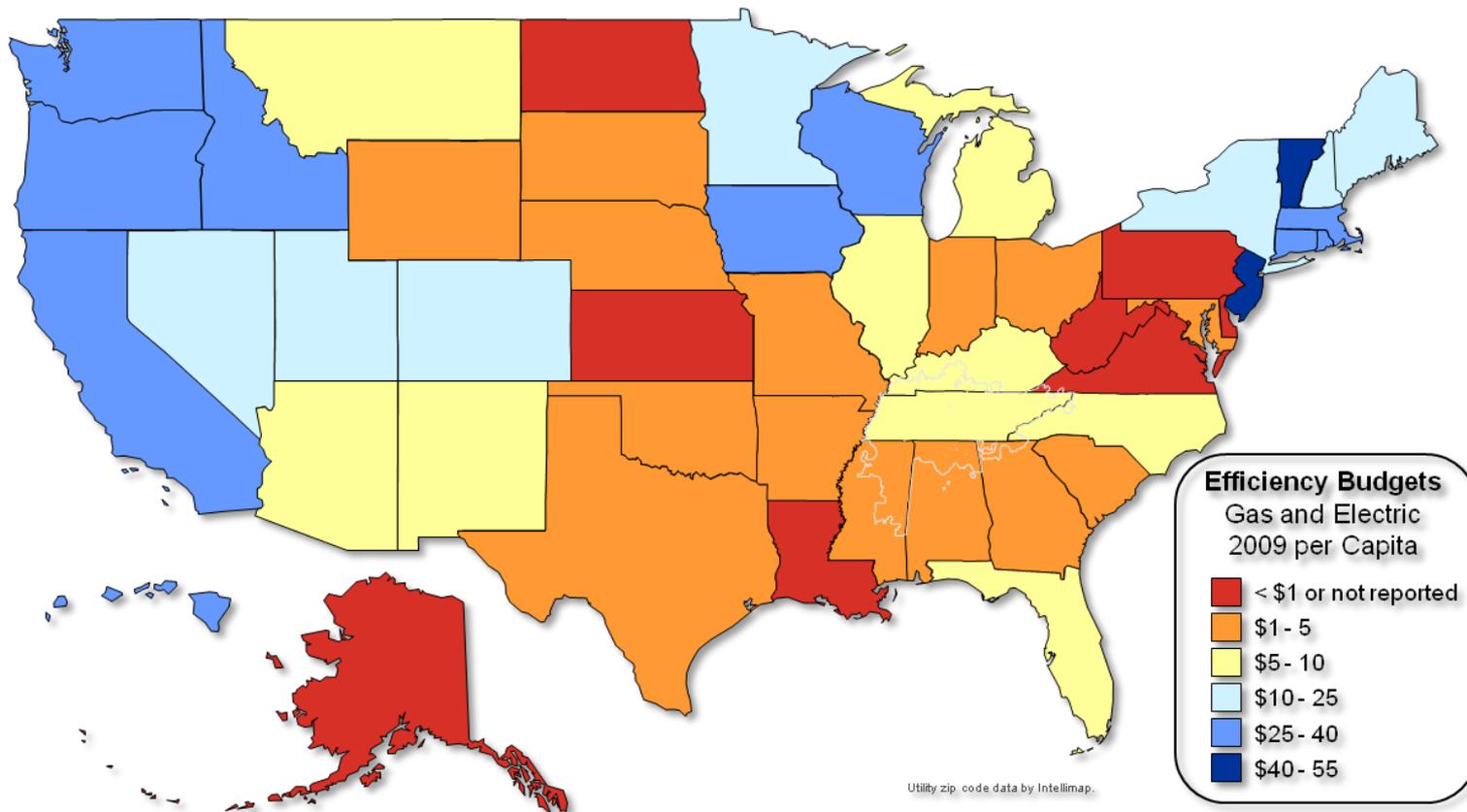
South Lags the Nation: ACEEE Score for Utility and Public Benefits Programs and Policies, 2007



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 TENNESSEE VALLEY AUTHORITY

HOME ABOUT TVA ENERGY ENVIRONMENT RIVER MANAGEMENT ECONOMIC DEVELOPMENT

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

Return to **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. According to a report of the board, the TVA's basic mission has not changed, but the way it fulfills that mission has. The report states that the TVA's focus will be on "improving the quality, raising the bar on efficiency."



Georgia Public Service Commission

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FOR IMMEDIATE RELEASE **GA PSC:**

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

PSC Approves Plan to Reopen Georgia Power Company 2010

ATLANTA, July 6, 2010 – The Georgia Public Service Commission today approved by a 4-1 vote a stipulation for the filing of a 2010 Integrated Resource Plan (IRP) and Demand Side Management (DSM) Plan in Divisions 1 through 4. The plan allows customers have an opportunity to submit alternative energy efficiency programs to promote alternate energy sources.

"Georgia has to look at its energy efficiency programs. We are making decisions on service so we do not compromise the ability to continue to provide the best service for growth and development."

state energy office
Ensuring a sustainable energy future

NC HealthyHomes Program

ENERGY POLICY COUNCIL

North Carolina Energy Policy Council

Below is information made available to the North Carolina Energy Policy Council:

NC & SC studying new EE policies

Thursday, April 29, 2010

Energy Policy Council

- Near term recommendations
- Building codes recommendations
- Suggested support for energy efficiency programs
- Suggested Energy Efficiency Resource Standard
- Review of ACSEE Non-Residential Energy Efficiency Program
- Overview of Energy Efficiency Programs

March 18, 2010
Energy Policy Council

The McGraw-Hill Companies

platts

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Florida PSC orders utilities to submit energy plans

Boston (Platts)—145 (02/10/11 pm EDT/2111 GMT)

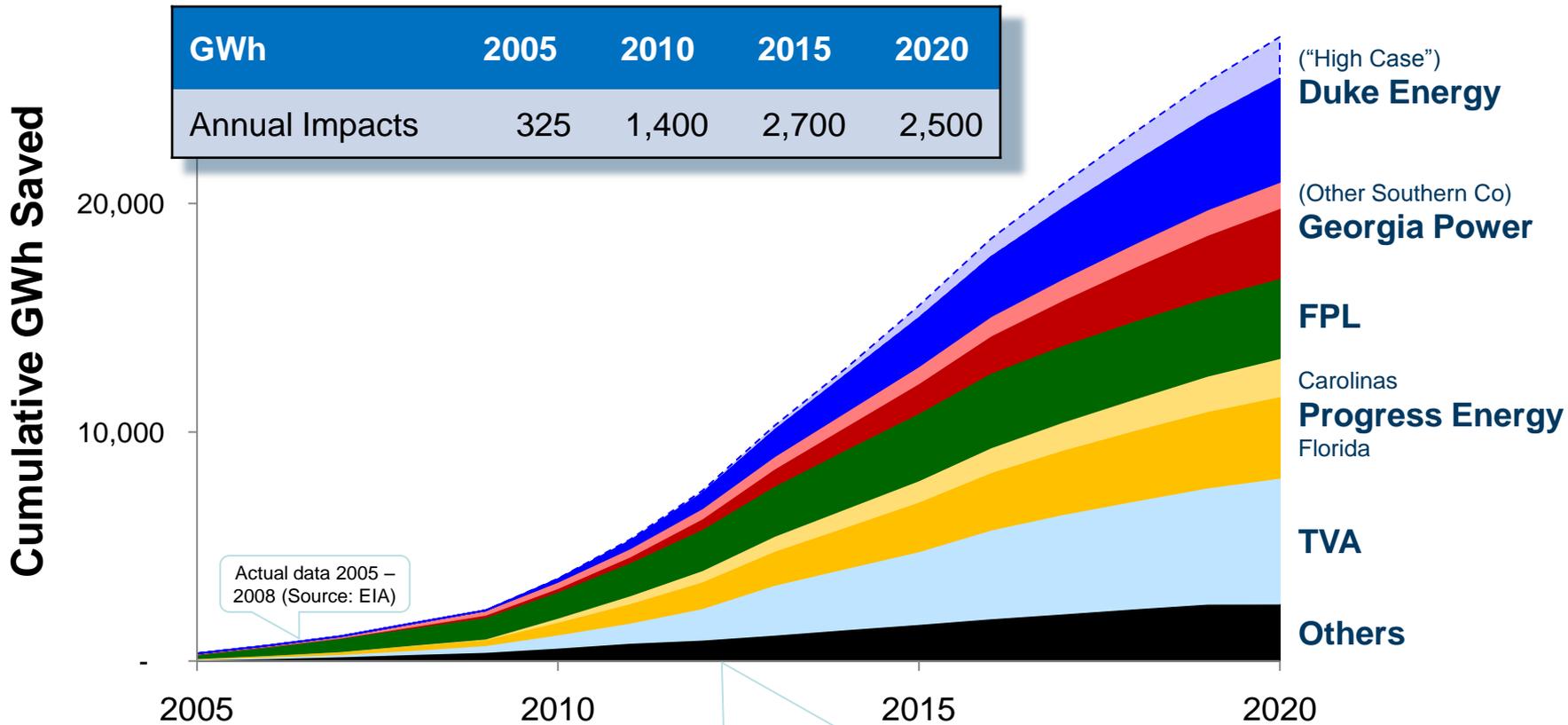
FL PSC: "inertia of the past" vs "innovation of the future"

A unanimous Florida Public Service Commission Tuesday ordered Progress Energy Florida, Tampa Electric and Gulf Power to submit energy efficiency and demand side management plans to meet aggressive goals the commission set.

PSC staff had determined that utilities' current energy efficiency programs for investor-owned utilities fell short of 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

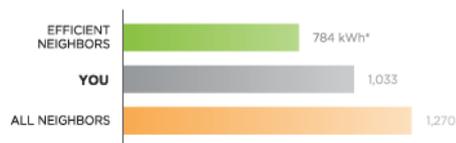
Bright Spot: Duke Energy Carolinas

- **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 neighbors

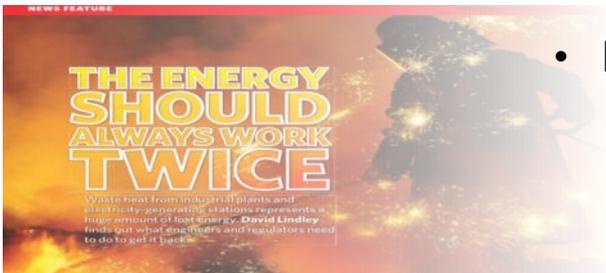


* kWh: A 100-Watt bulb burning for 10 hours uses 1 kilowatt-hour.

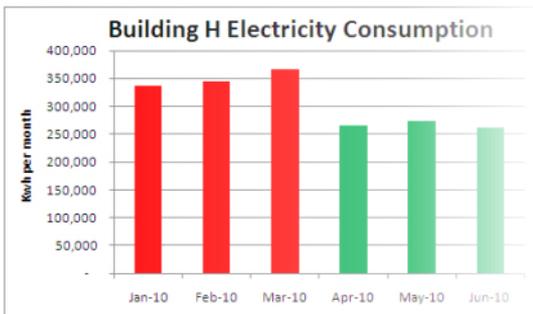


- **Home Energy Comparison Report**

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



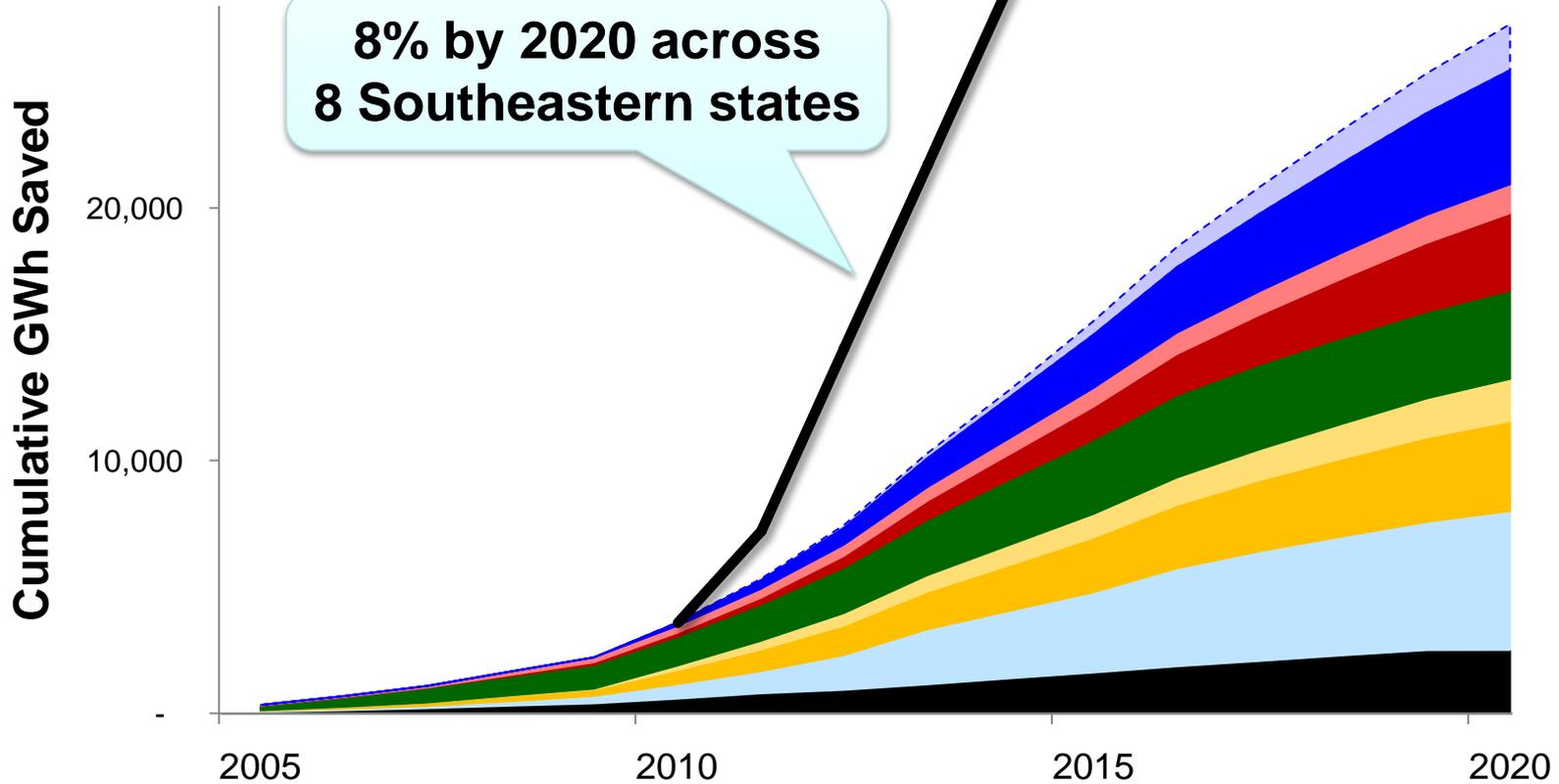
- **Energy recycling** (including combined heat & power)
 - Tends to fall through the cracks (pushed?)
 - **New** 35% state tax credit in North Carolina



- **Building recommissioning**

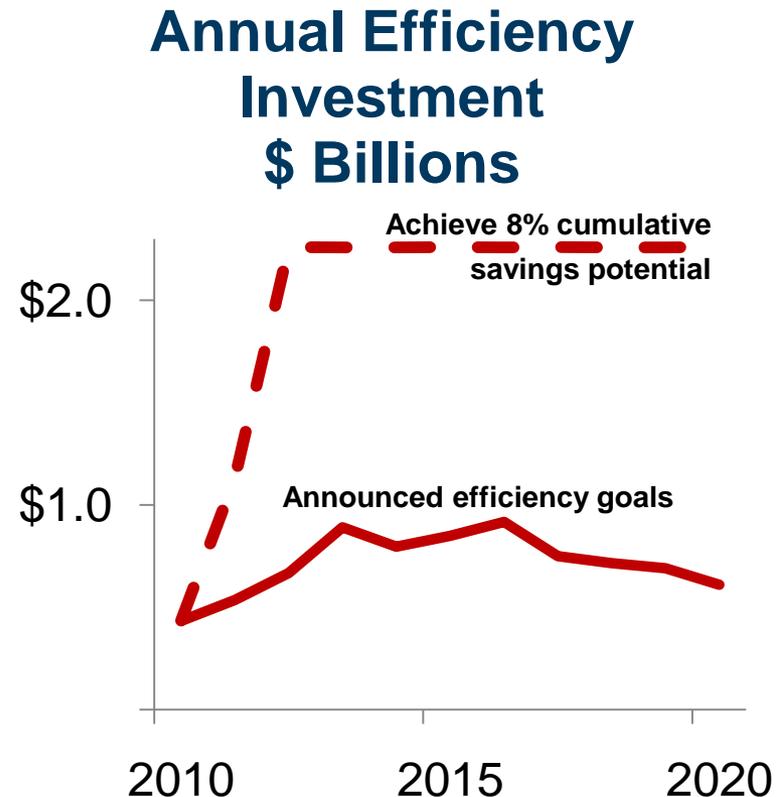
- Often missing from efficiency potential studies
- Not yet offered in Southeast
- Offered in many states (examples: AZ, CO, IA)

Utility Efficiency Goals Are NOT Ambitious



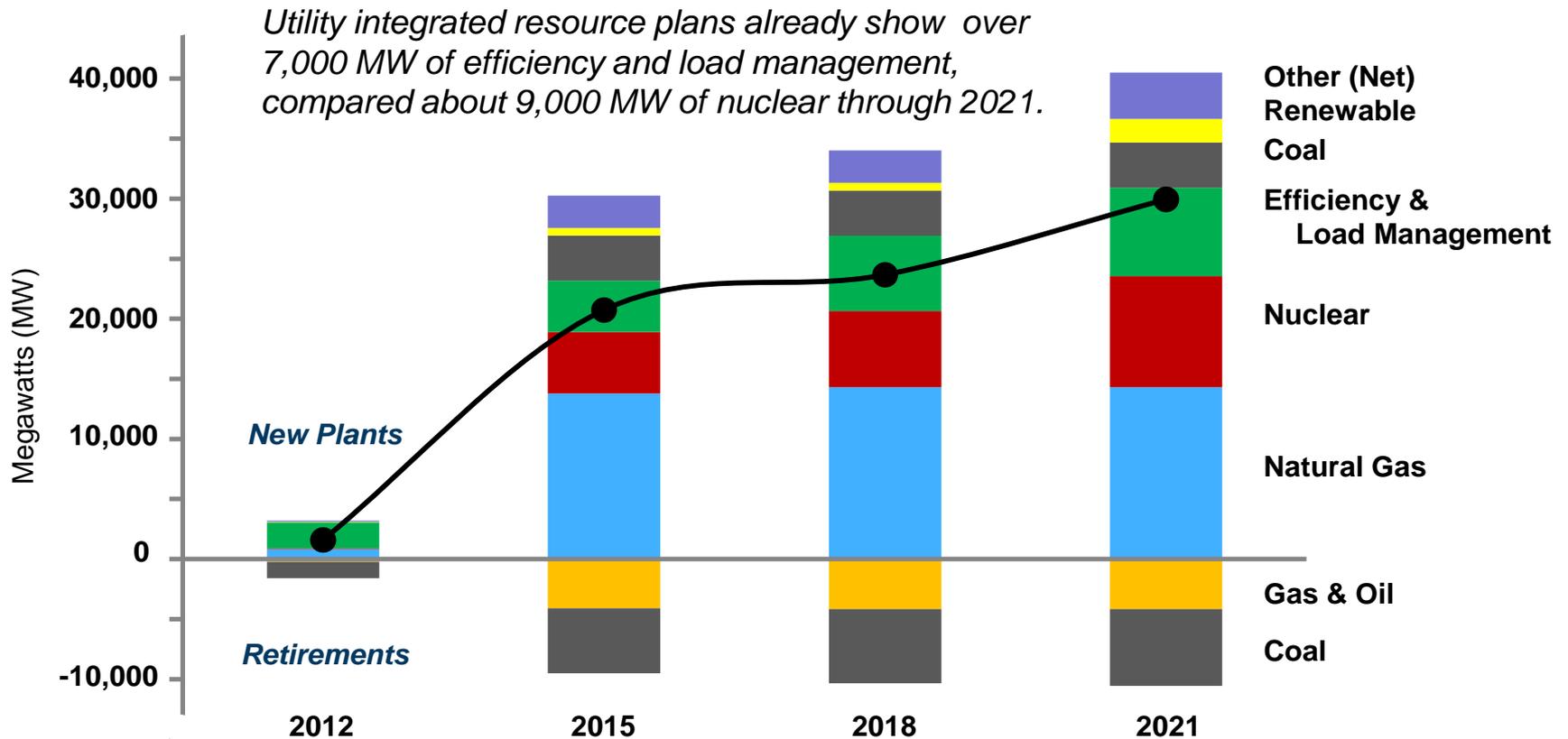
Opportunities for Southeast Efficiency Businesses

- **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



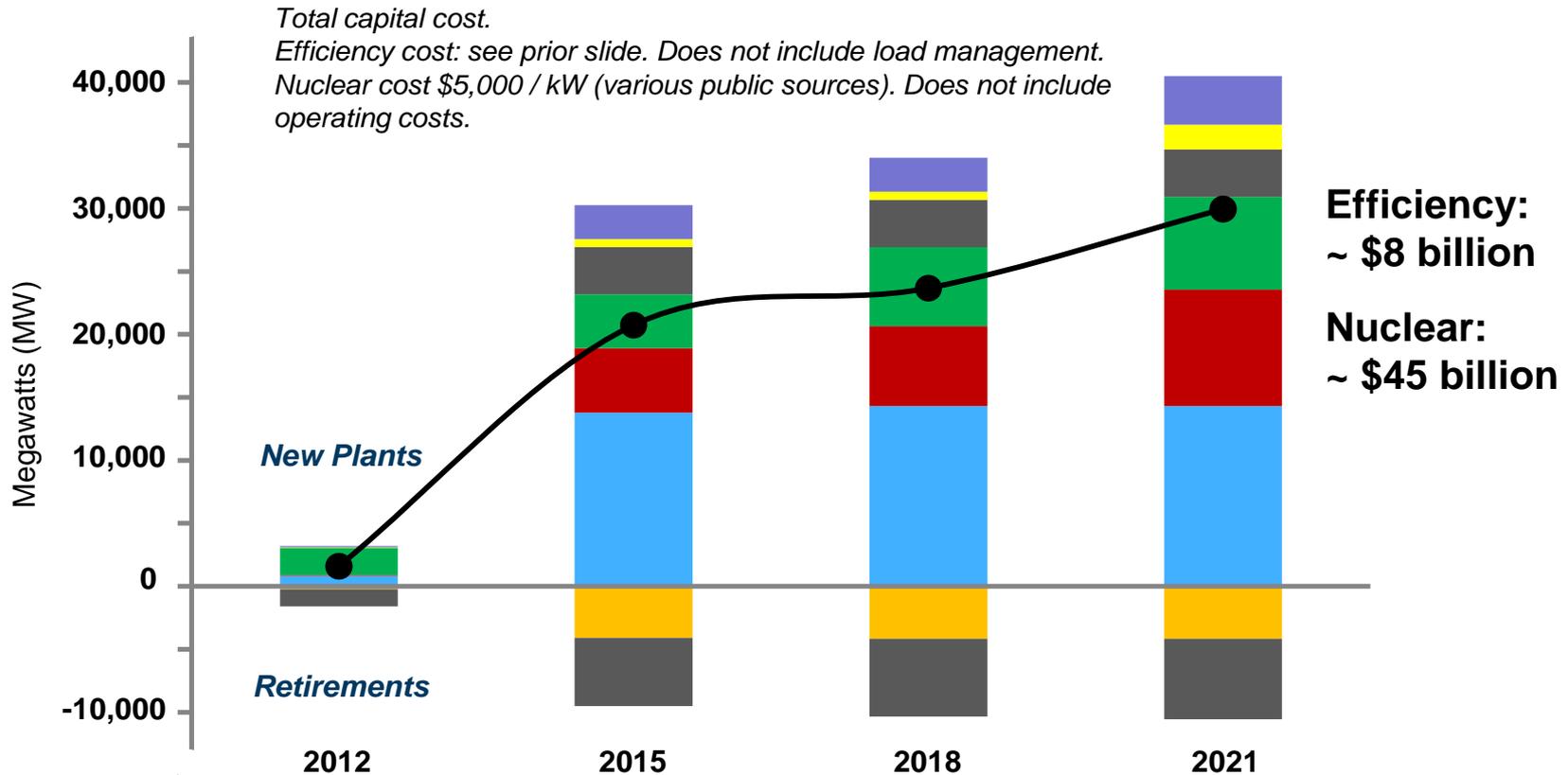
Sources, cost and budget data: CEE, *The State of the Efficiency Program Industry: Budgets, Expenditures and Impacts, 2009*; 2008 annual energy savings calculated from US Energy Information Administration data.

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*

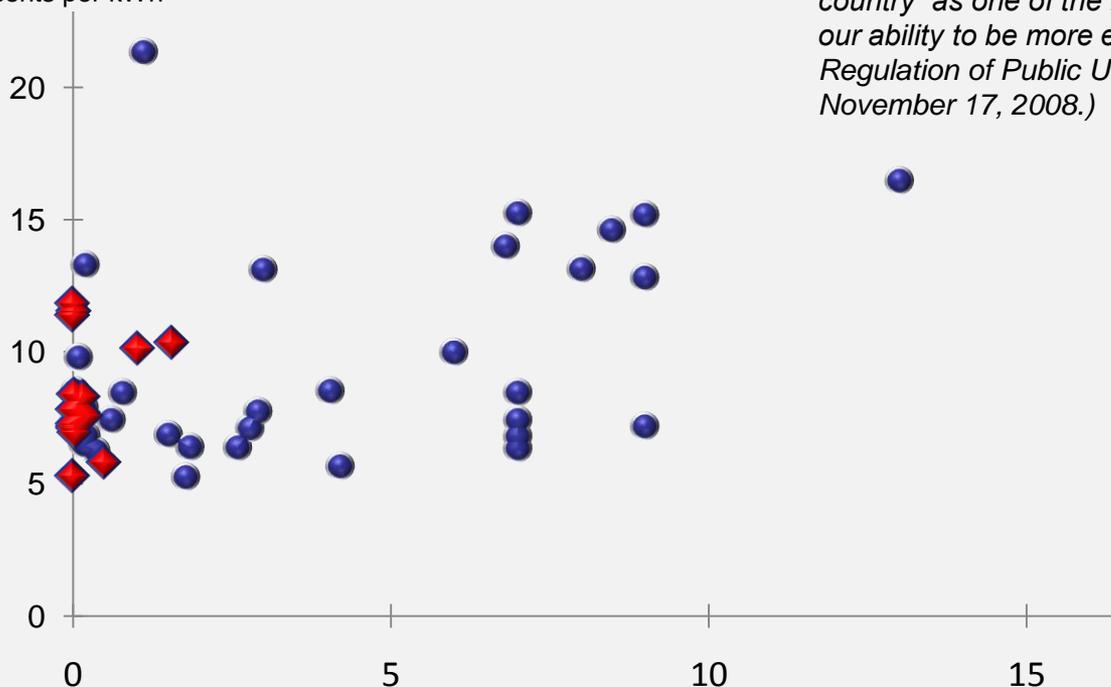
* “These low-income households are truly unable to participate in any energy efficiency and conservation efforts.” – *Testimony of South Carolina Public Service Commissioner David A. Wright before the Senate Energy and Natural Resources Committee on a national Renewable Portfolio Standard*, February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

Rates are Not the Barrier

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

Average State Electric Rate

cents per kWh



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 Warren	Member President	Utah Utilities Board National Association of Regulatory Utility Commissioners
Jan Rogers	President and Chief Executive Officer	Duke Energy
Leadership Group		
Billy Bloomston	Senior Vice President	Sensata Systems, LLC
Angela S. Baehner	Director of Energy Regulation	Wal-Mart Stores, Inc.
Bruce Blaine	Vice President, Strategic Policy Analysis	American Electric Power
Jeff Burtz	Director of Environmental Sustainability	IBM Research
Karen Calabrese	President	Alliant Energy
Shawn Carlson	General Manager	Wesley Light and Power
Jorge Carrasco	Superintendent	Seattle City Light
Janice Carter	President and Chief Executive Officer	Sartex Cooper
Mark Case	Vice President for Business Performance	Baltimore Gas and Electric
Gary Carroll	Manager of Resource Planning and Member Services	Great River Energy
Larry Drexler	Chairman and Chief Executive Officer	New Jersey Natural Gas
Roger Duncan	Deputy General Manager, Distributed Energy Services	Western Resources Corporation
Angelo Esposito	Senior Vice President, Energy Services and Technology	Aurora Energy
William Flynn	Chairman	New York Power Authority
Warren Fox	President	New York State Public Service Commission
Anne George	Commissioner	New Jersey Board of Public Utilities
Steve Granath	Commissioner	Connecticut Department of Public Utility Control
Bar Hamilton	Policy Director	California Public Utilities Commission
Leonard Hedges	Executive Vice President, Supply, Technology, Renewable, and Demand Side Planning	Vermont Energy Investment Corporation
Mary Healy	Consumer Counselor for the State of Connecticut	Southern Company
Wesley Hines	Vice President, Environment, Health and Safety	Connecticut Consumer Council
Chris James	Air Director	Edison
Ruth Knapp	Director of Corporate Communications	Connecticut Department of Environmental Protection
Peter Landrum	Vice President, Sales and Marketing	Food Lion
Wes Lashburner	Manager of Energy Efficiency	Energy Corporation
Mark McGuffey	Consumer Counselor	MidAmerican Energy Company
Janice Miggins	Consumer Counselor	Hydro-Quebec and Transmission Association, Inc.
Michael Morgan	Commissioner	Office of the Ohio Consumer Counselor
Bruck Nicholson	Deputy Director, Division of Air Quality	Director of Colorado Public Service Commission
Fel O'Neil	Commissioner	North Carolina Air Office
Douglas Pettit	Vice President, Government Affairs	Washington Utilities and Transportation Commission
Bill Prende	Deputy Director	Western Commission
Paula Pinta	Commissioner	American Council for an Energy Efficient Economy
Richard Rouse	Director, Customer Energy Efficiency	Minnesota Public Utilities Commission
Gene Rodriguez	Director, Energy Efficiency	Pacific Gas and Electric
Art Rowland	Commissioner	Southern California Edison
Jan Schell	General Manager	California Energy Commission
Larry Shiner	Division Director	Sacramento Municipal Utility District
Michael Shore	Senior Air Policy Analyst	North Carolina Energy Office
Gordon Slack	Energy Business Director	Environmental Defense
Deb Sartin	Director, Business Product Marketing	The Dow Chemical Company
Paul Taylor	Director	Xcel Energy
Paul Van	Director, Energy and Environmental Affairs	New York State Energy Conservation Office
Berena Walburn	Executive Director, National Property Management	Intertek Controls
Dawn Wang	Director, California Energy Program	USA Realty Company
Steve Ward	Public Advocate	Director, California Energy Program
Mike Woodall	Vice President, Energy Efficiency	National Resources Defense Council
Tom Wood	Vice President, External Affairs	State of Maine
Henry Yushin	Manager of Energy Efficiency & Green Power South	Bonneville Power Administration
	Manager, Demand Response	FIM Interconnection
		Tennessee Valley Authority
		IGD New England Inc.
Observers		
James W. Day	Counsel	Steel Manufacturers Association
Roger Cooper	Executive Vice President, Policy and Planning	American Gas Association
Dan DeLuca	Executive Director	Demand Response Coordinating Committee
Jeff Genser	General Counsel	Council of Energy Resource Users
Donald Gilligan	President	National Association of State Energy Officials
Chuck Gray	Executive Director	National Association of Energy Service Companies
John Hart	Senior Manager of Generation and Fuel	National Association of Regulatory Utility Commissioners
Joseph Mattingly	Vice President, Secretary and General Counsel	National Rural Electric Cooperative Association
Christina Mead	Executive Director	Gas Appliance Manufacturers Association
Alan Mitchell	Director, Public/Private Partnerships	North American Insulation Manufacturers Association
Alan Richardson	President and Chief Executive Officer	National Council on Electricity Policy
Steve Rosenstock	Manager, Energy Solutions	Electric Power Research Institute
Dave Shea	Executive Director	American Public Power Association
Bob Tompkins	Director, Retail Distribution Policy	Edison Electric Institute
Mark Wulfe	Executive Director	National Association of State Energy Officials
		Edison Electric Institute
		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!*

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