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# **Energy Efficiency Program Impacts and Policies in the Southeast**

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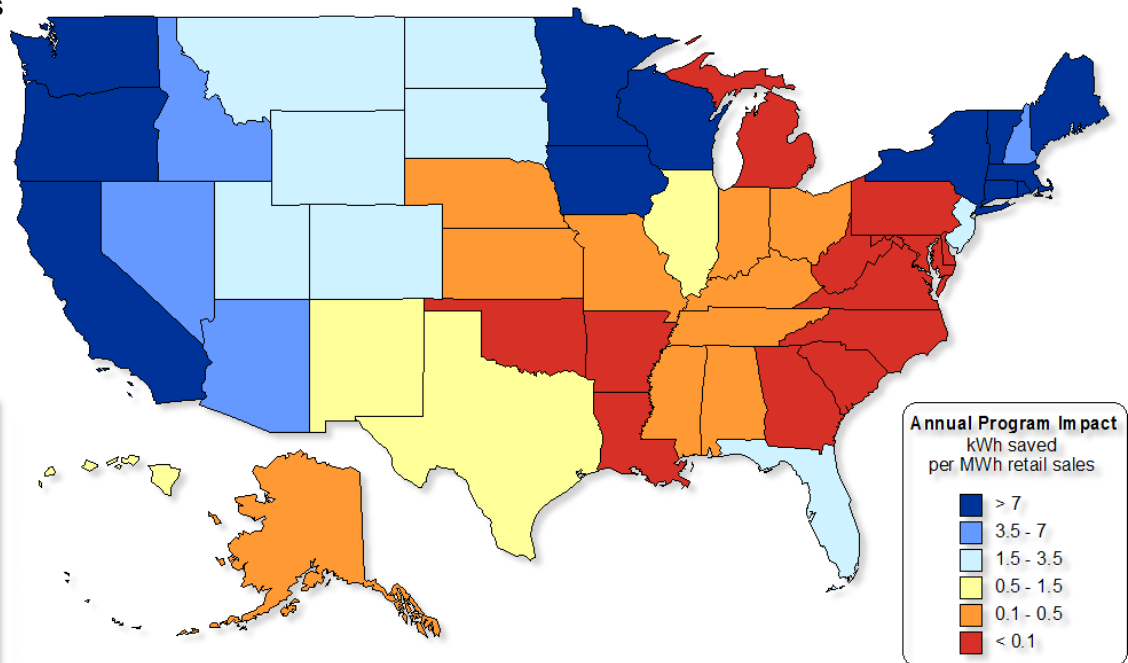
# Southeast Lags the Nation: Energy Efficiency Program Impacts

Florida is the only Southeast state with energy efficiency programs operating at a significant level of statewide impact. Leading states in other regions of the country are saving as much as 100 times more energy than most states in the Southeast.

North Carolina has joined most states outside the Southeast in adopting state policy favoring energy efficiency. The region from South Carolina to Louisiana is the largest block of states that continue to discourage efficiency.

State	2007 Impact
Alabama	0.2
Florida	1.5
Georgia	0.0
Mississippi	0.2
North Carolina	0.0
South Carolina	0.0
Tennessee	0.2
Virginia	0.0

**2007 Energy Efficiency Program Impacts, by State**



Source: ACEEE, EIA Form 861 (see sources and assumptions).

# 2007 Energy Efficiency Program Impacts, by State

## kWh saved per MWh retail electric sales

Alabama (b)	0.2	Kentucky (b)	0.5	North Dakota (b)	1.8
Alaska (b)	0.2	Louisiana (b)	0	Ohio (b)	0.2
Arizona (b)	4.1	Maine (b,c)	8.5	Oklahoma (b)	0
Arkansas (b)	0	Maryland (b)	0	Oregon (a)	9
California (a)	9	Massachusetts (a)	9	Pennsylvania (b)	0.1
Colorado (b)	2.9	Michigan (b)	0	Rhode Island (a)	8
Connecticut (a)	13	Minnesota (a)	7	South Carolina (b)	0
Delaware (b)	0	Mississippi (b)	0.2	South Dakota (b)	1.5
District of Columbia (b)	0	Missouri (b)	0.2	Tennessee (b)	0.2
Florida (b)	1.5	Montana (b)	2.8	Texas (a)	1
Georgia (b)	0	Nebraska (b)	0.4	Utah (b)	2.6
Hawaii (b)	1.1	Nevada (a)	6	Vermont (a)	18
Idaho (b)	4.2	New Hampshire (b)	6.8	Virginia (b)	0
Illinois (b)	0.8	New Jersey (a)	3	Washington (a)	7
Indiana (b)	0.2	New Mexico (b)	0.6	West Virginia (b)	0
Iowa (a)	7	New York (a,d)	7	Wisconsin (a)	7
Kansas (b)	0.2	North Carolina (b)	0	Wyoming (b)	1.8

(a) ACEEE (see Sources and Assumptions)

(b) EIA-861

(c) Also includes data for Efficiency Maine

(d) 2006 data, 2007 data not available from ACEEE

# Why Does the Southeast Lag Other Regions in Energy Efficiency?

- **Myths:**

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

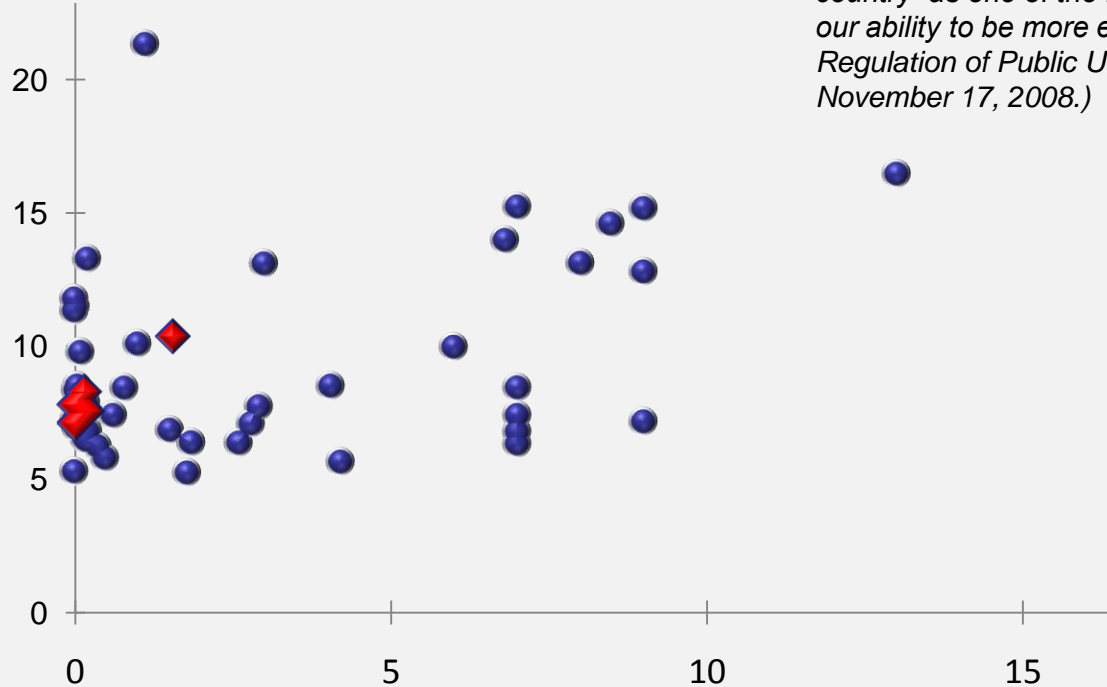
- **Reality: The Southeast lacks . . .**

- 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.

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

**Average State Electric Rate**  
cents per kWh



*In comments to a legislative study committee, SCE&G cited having “some of the lowest electricity prices in the country” as one of the factors that “prohibit or inhibit our ability to be more energy efficient.” (State Regulation of Public Utilities Review Committee, November 17, 2008.)*

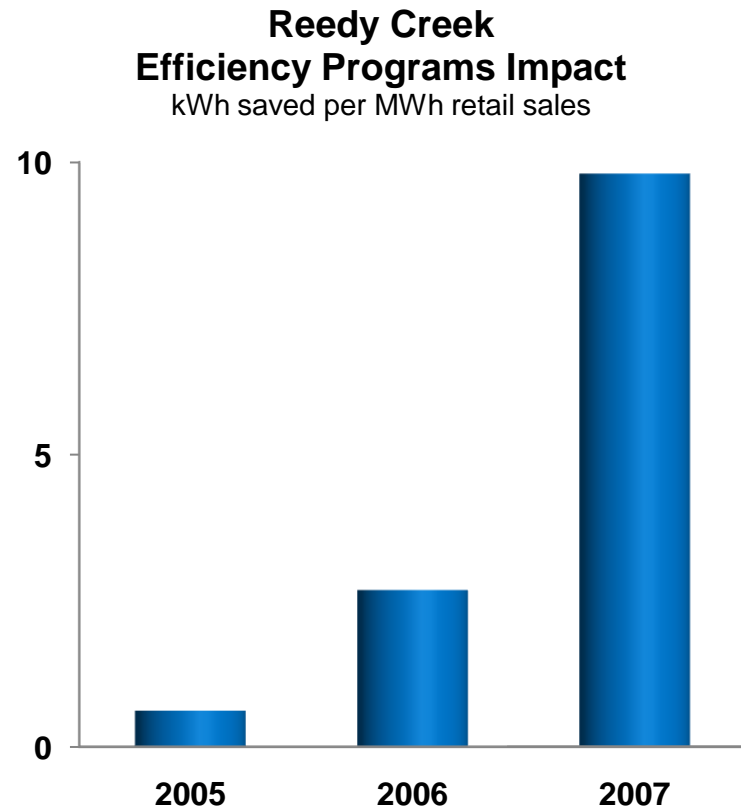
**Annual State Efficiency Programs Impact**  
kWh saved per MWh retail sales

◆ **Southeast States**

Source: ACEEE, EIA Form 861 (see Sources and Assumptions).

# Southeast Success Story: Reedy Creek Improvement District

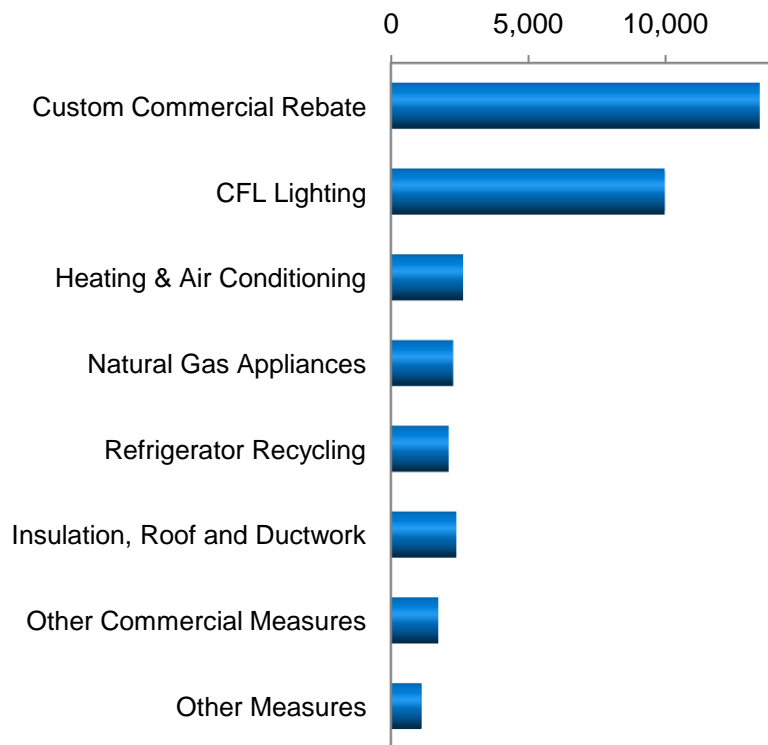
- **Reedy Creek Improvement District provides energy & energy services to Walt Disney World (Orlando, FL)**
- **From 1996 to 2006, Disney saved**
  - 100 GWh of electricity
  - 1 million therms of natural gas
- **Disney reports a 53% internal rate of return for efficiency programs**
- **Impacts increased dramatically in 2007**
- **Disney's program:**
  - Energy management system for each facility
  - Energy information system provides data to energy managers and other stakeholders
  - Disney staff collectively participate



Source: EIA Form 861. Allen, P J, *Walt Disney World Resort's Energy Management Program*, 2006.

# Southeast Success Story: Gainesville Regional Utilities

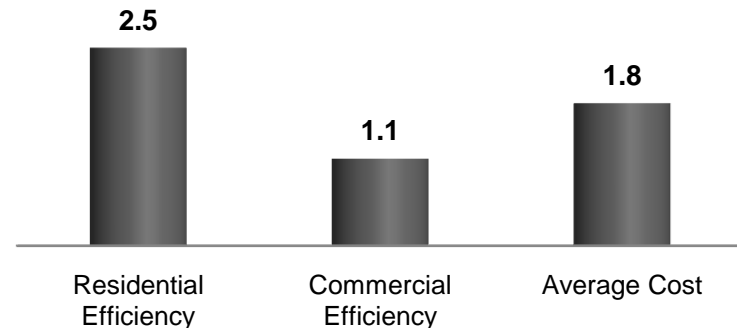
## 2006-08 Program Impacts: Energy Saved (MWh)



Gainesville Regional Utilities (GRU) is among the nation's leaders in energy efficiency. Its 2007 programs had an impact of approximately 7.6 kWh energy savings per MWh electricity sales.

In 2006, Gainesville Regional Utilities revised its energy strategy to put greater emphasis on energy efficiency and renewable energy. Since that time, its energy efficiency program impact has more than tripled – with very high cost-effectiveness.

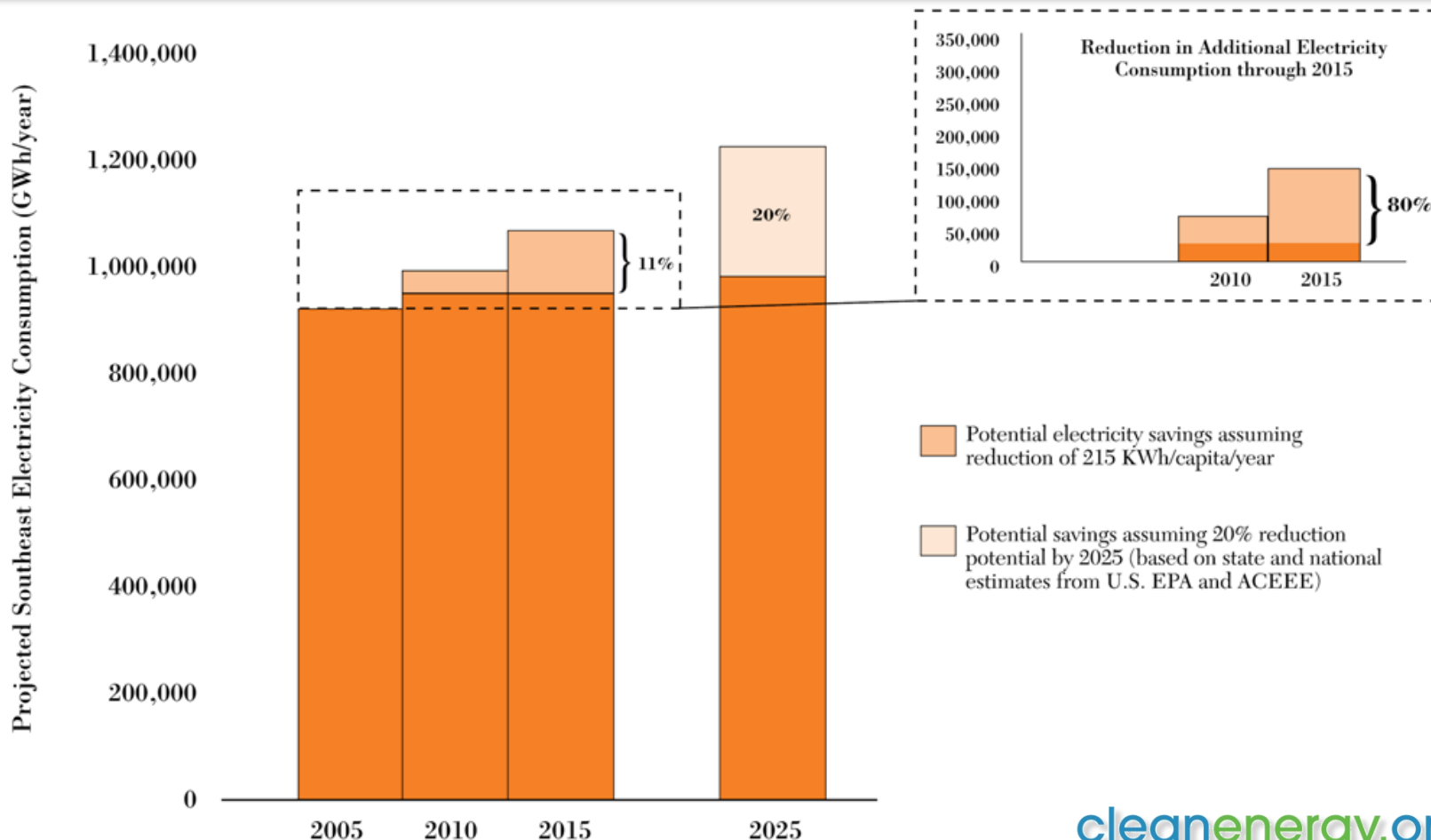
## GRU Clean Energy Programs Are Low Cost Cents per kWh



Source: Gainesville Regional Utilities, Fourth Quarter FY08 Report of Energy Efficiency Programs.  
Note: Average cost also includes a small amount of renewable energy at about 20 cents per kWh.



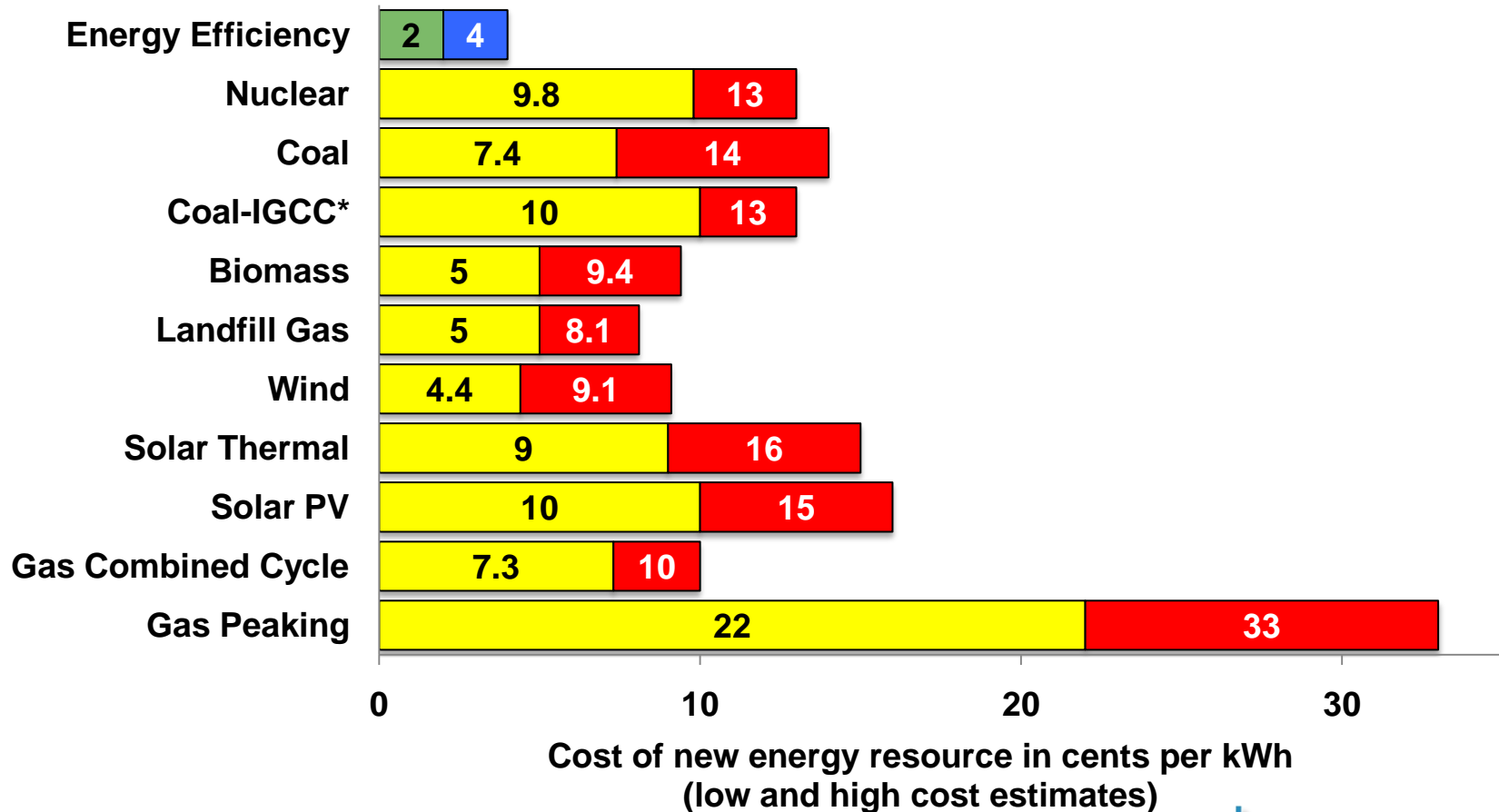
# Efficiency Can Meet Most Future Power Demand



Source: WRI, SEEA, Southface issue brief, see <http://www.wri.org/publication/southeast-energy-policy>



# Energy Efficiency Costs Less Than Generating Power



Source: Lazard, *Levelized Cost of Energy Analysis – Version 2.0*, June 2008.

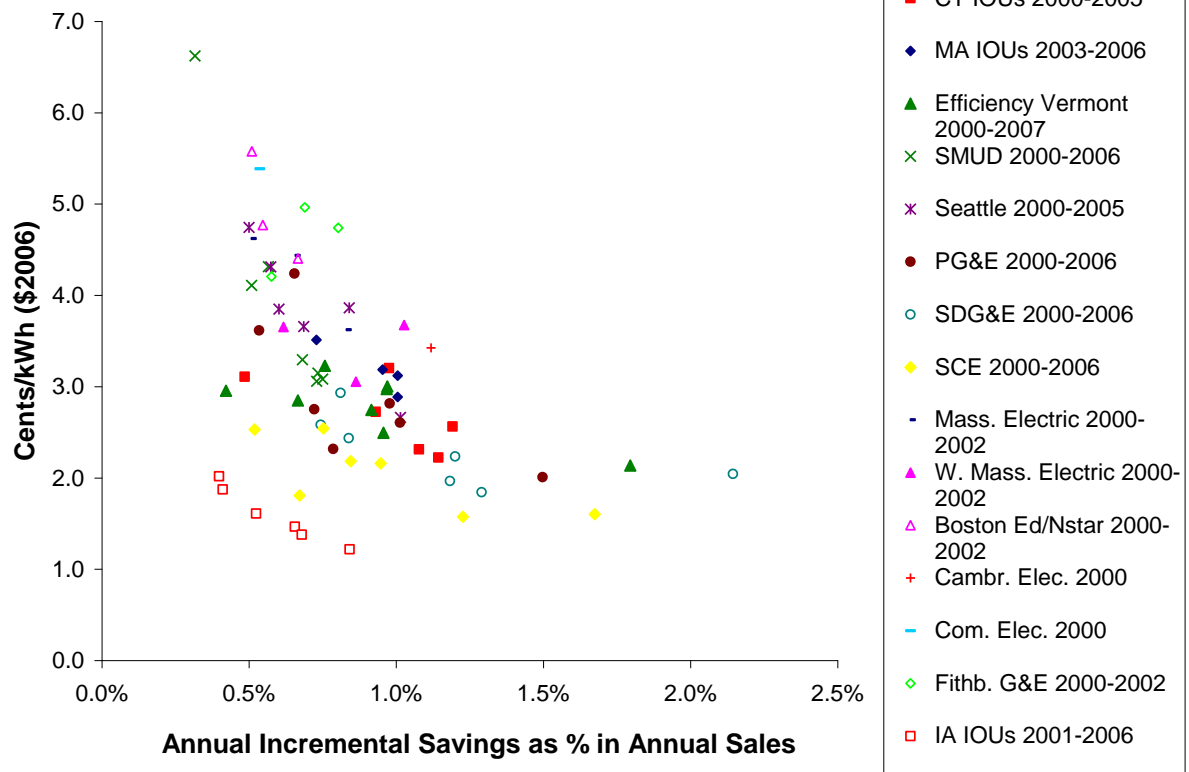
# Economy of Scale: Costs Go Down As Market Penetration Increases

Economy of scale is a given in many businesses, and energy efficiency is no exception. Synapse Energy Economics collected data from fifteen leading energy efficiency programs across the country.

For every utility studied, the cost per kWh of energy efficiency programs was lower at higher levels of impact.

This suggests that utilities that “dabble” in energy efficiency with pilot programs and the like will find higher costs relative to utilities that make a strong and sustained commitment to building a mature program.

Takahashi, K and D Nichols, *The Sustainability and Costs of Increasing Efficiency Impacts: Evidence from Experience to Date*, 2008 ACEEE Summer Conference, August 2008.



# State Energy Policy Makes A Difference: Southern Company Case Study

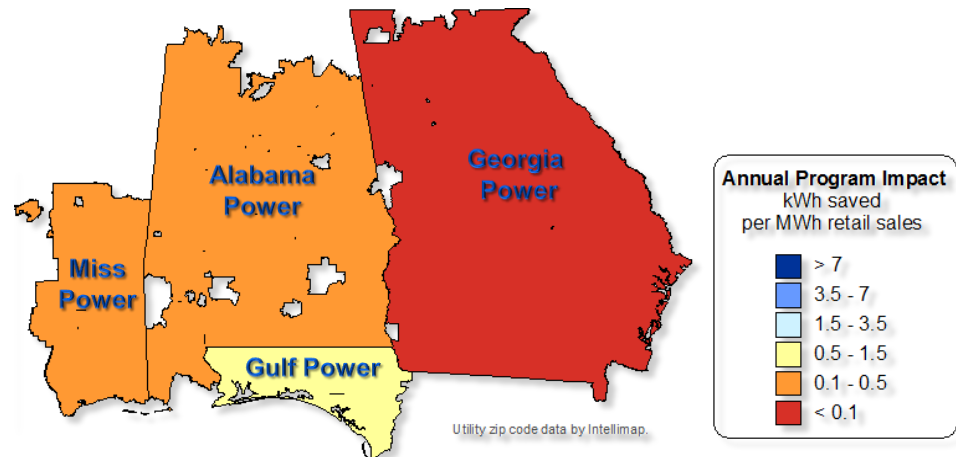
Gulf Power, Southern Company's Florida subsidiary, achieves 10 to 100 times more energy savings than its sister utilities. The reason is obvious: Florida law requires its major utilities to meet energy efficiency goals.

However, as illustrated by the state-level data, Florida is not a national leader on energy efficiency. Florida's program has delivered a similar level of impact for over two decades.

Note: The utility service territories illustrated at right illustrate each zip code where Georgia Power operates. In many areas, another utility also offers service in the same zip code.

Southern Company Unit	2007 EE Program Impact kWh per MWh sold
Gulf Power (Florida)	1.14
Alabama Power	0.17
Mississippi Power	0.12
Georgia Power	0.02

Source: EIA Form 861.

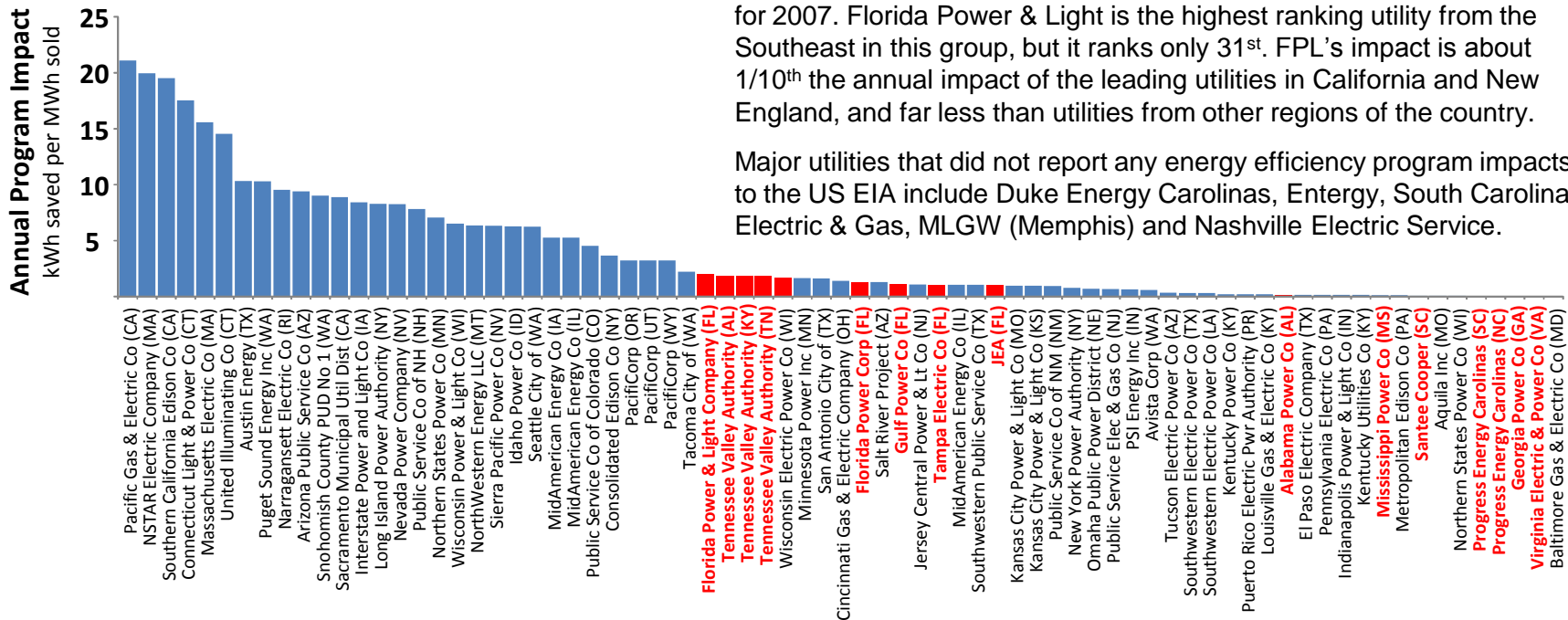


# None of the Largest Southeast Utilities Lead on Energy Efficiency

None of the largest utilities in the Southeast are among the leaders in saving energy.

Of the 150 largest utilities, 75 report energy efficiency program impacts for 2007. Florida Power & Light is the highest ranking utility from the Southeast in this group, but it ranks only 31<sup>st</sup>. FPL's impact is about 1/10<sup>th</sup> the annual impact of the leading utilities in California and New England, and far less than utilities from other regions of the country.

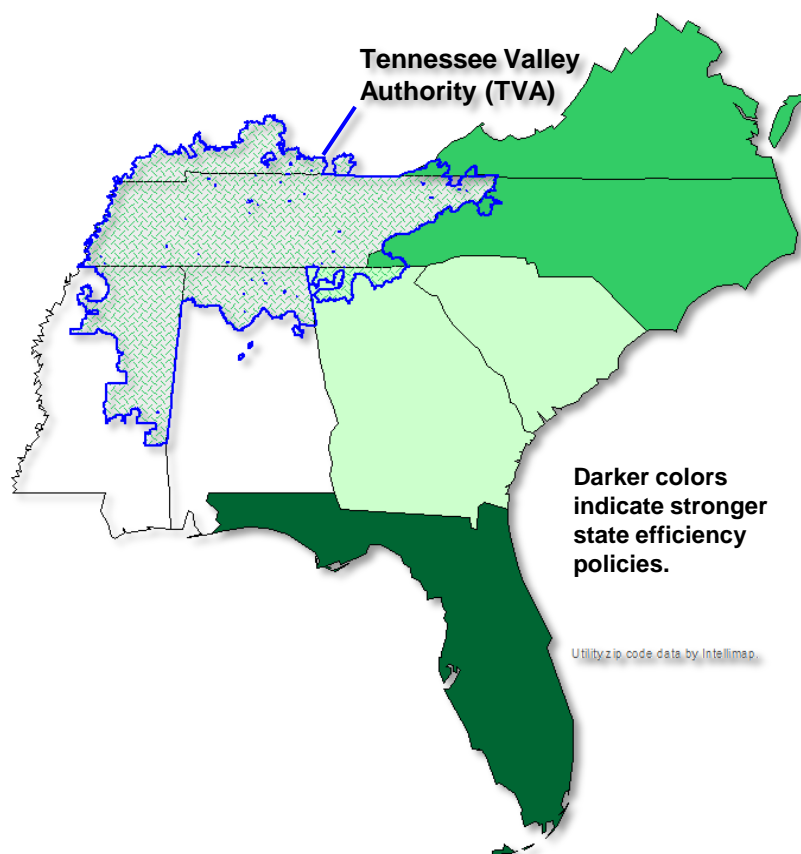
Major utilities that did not report any energy efficiency program impacts to the US EIA include Duke Energy Carolinas, Entergy, South Carolina Electric & Gas, MLGW (Memphis) and Nashville Electric Service.



Source: EIA Form 861.

Note: TVA performance based on direct service data only; the TVA system (including direct serve and distribution utilities) has substantially lower annual program impact.

# Southeast State Efficiency Policies



State	Efficiency Standard	Efficiency Building Codes	
		Commercial	Residential
Florida	Admin goals pending	Most recent	Most recent
Virginia	Admin goals pending	Recent	Recent
N Carolina	Optional to meet RPS	Recent	Needs update
S Carolina	None	Most recent pending	Most recent pending
Georgia	None	Recent	Recent
Tennessee	No authority over TVA	Local option	Most recent pending
Alabama	None	Local option	Local option
Mississippi	None	Local option	Local option
TVA	Admin goals pending	No authority	No authority

The Tennessee Valley Authority is the regulatory body for its distribution utilities. Efficiency Standard: Federal Energy Regulatory Commission, *Electric Market Overview: Energy Efficiency Resource Standards (EERS) and Goals*, April 3, 2009. Augmented by information on recently enacted legislation in Virginia. This summary refers to electricity only; natural gas utilities are not covered in any state. Efficiency Building Codes: Department of Energy, *Status of State Energy Codes*, May 2009. Augmented by information on pending legislation in Tennessee and South Carolina state legislatures.

# A National Energy Efficiency Goal (EERS): More Jobs, Less Waste, Less Pollution

- A national EERS could create 56,350 *more* jobs in the Southeast than would be created by turning to new power plants instead.
  - These new jobs will be professional, skilled and semi-skilled. Job growth will respond to, for example, purchases of new appliances, sound investments in improved building methods, upgrades to electricity distribution systems, and installation of combined heat and power systems.
- A national EERS could save \$38 billion in the Southeast through 2020.
  - For every dollar invested in efficiency, consumers save \$4 – savings that can be reinvested in other areas of the economy.
  - A national EERS will eliminate the need to build 126 expensive conventional power plants in the Southeast.
- The national EERS studied by ACEEE (results below) assumed 15% energy savings by 2020.

State	Annual Electricity Savings (GWh)	Peak Demand Savings (MW)	Peak Demand Savings (Equivalent Power Plants)	Annual Direct Gas Savings (TBtu) <sup>†</sup>	Household Energy Needs Met (equivalent number <sup>††</sup> )	Energy Savings (\$ millions)	Net Jobs Created	CO <sub>2</sub> Emission Savings (MMT)
Alabama	12,440	4,001	13	5.8	1,426,166	3,641	5,202	9.8
Florida	33,553	10,791	36	5.8	3,742,348	14,007	19,754	20.6
Georgia	18,972	6,102	20	15.5	2,245,134	6,326	8,894	15.2
Mississippi	5,854	1,883	6	5.0	694,523	1,935	2,731	4.1
N Carolina*	13,840	4,451	15	10.3	1,627,183	3,017	6,426	11.5
S Carolina	11,662	3,751	12	4.7	1,328,925	3,102	4,495	9.5
Tennessee	13,026	4,189	14	8.6	1,519,999	3,505	5,104	12.3
Virginia*	8,473	2,725	9	14.3	1,080,348	2,342	3,744	7.5
<b>8 SE states</b>	<b>117,820</b>	<b>37,893</b>	<b>126</b>	<b>70.0</b>	<b>13,664,626</b>	<b>37,875</b>	<b>56,350</b>	<b>90.5</b>
National	364,100	117,091	390	794	47,677,152	168,600	222,100	262

Source: American Council for an Energy-Efficient Economy (ACEEE), *Laying the Foundation: Implementing a Federal Energy Efficiency Resource Standard* (March 2009).

Notes: \* State with an Energy Efficiency Resource Standard (EERS). <sup>†</sup> State natural gas savings targets not considered. <sup>††</sup> Derived by dividing total state energy savings (for residential, commercial and industrial customers) in a state by energy use of an average U.S. household.

# Methods and Assumptions

- **Calculation of energy efficiency program impacts**

- Annual program impacts refers to the energy savings attributed to measures installed by the program during that year. These impacts endure, continuing to save electricity, for several years. The lifetime of energy efficiency impacts varies from 2 - 30 years depending on the measures installed.
- Levelized costs refers to the lifetime cost of a measure expressed at an equal rate over time.

- **State efficiency program impacts**

- The primary source is 2007 ACEEE data. ACEEE collected data from utility commission or other state-level sources. These data are often collected in regulatory proceedings and typically receive pre-publication review.  
Kushler, M, D York and P Witte, *Meeting Aggressive New State Goals for Utility-Sector Energy Efficiency: Examining Key Factors Associated with High Savings*, ACEEE Report Number U091, March 2009.
- The secondary source is 2007 EIA-861 data because these are self-reported utility data that do not receive as much scrutiny; questionable data have been noted in isolated instances.  
US Energy Information Administration, Form 861 Database. Utilities self-report efficiency program impacts by service territory; SACE allocated data reported for multistate territories based on relative sales among the state territories. Obviously erroneous data were excluded. SACE supplemented these data with secondary sources, notably reported impacts by Efficiency Maine, a non-utility energy efficiency authority.

- **Utility efficiency program impacts**

- US Energy Information Administration, Form 861 Database. See notes above.