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July 6, 2009

Ann Cole
Director, Office of the Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd
Tallahassee, Florida 32399-0850

RE: Docket No. 080407-EG Florida Power & Light Company;
Docket No. 080408-EG Progress Energy, Florida, Inc. ;
Docket No. 080409-EG Tampa Electric Company;
Docket No. 080410-EG Gulf Power Company ;
Docket No. 080411-EG Florida Public Utilities Company;
Docket No. 080412-EG Orlando Utilities C; and
Docket No. 080413-EG Jacksonville Electric Authority

Dear Ms. Cole:

On behalf of the Southern Alliance for Clean Energy, and the Natural Resources Defense Council, I have enclosed for filing the pre-filed intervenor testimony of witnesses John Wilson, Phil Mosenthal, William Steinjurst and Ralph Cavanaugh in the above-stated dockets. I thank you for your attention to this matter.

Sincerely,

/s/ E. Leon Jacobs, Jr.

E. Leon Jacobs, Jr.
Attorney for Intervenors

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re:	Commission Review of Numeric Conservation Goals Florida Power & Light Company	DOCKET NO. 080407-EG
In re:	Commission Review of Numeric Conservation Goals Progress Energy, Florida, Inc.	DOCKET NO. 080408-EG
In re:	Commission Review of Numeric Conservation Goals Tampa Electric Company	DOCKET NO. 080409-EG
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In re:	Commission Review of Numeric Conservation Goals Florida Public Utilities Company	DOCKET NO. 080411-EG
In re:	Commission Review of Numeric Conservation Goals Orlando Utilities Commission	DOCKET NO. 080412-EG
In re:	Commission Review of Numeric Conservation Goals Jacksonville Electric Authority	DOCKET NO. 080413-EG

DIRECT TESTIMONY & EXHIBITS OF:

JOHN D. WILSON

Q. Please state your name, business address, and employer.

A. My name is John D. Wilson. I am Director of Research for Southern Alliance for Clean Energy, 34 Wall Street, Suite 607, Asheville, North Carolina.

Q. Please state briefly your education, background and experience.

A. I graduated from Rice University in 1990 with a Bachelor of Arts degree in physics and history. I received a Masters in Public Policy Degree from the John F. Kennedy School of Government at Harvard University in 1992 with an emphasis in energy and environmental policy and economic and analytic methods. Since 1992, I have worked in the private, non-profit and public sectors on a wide range of public policy issues, usually related to energy, environmental and planning topics.

I became the Director of Research for the Southern Alliance for Clean Energy in 2007. I have participated in North Carolina Climate Action Plan Advisory Group and the South Carolina Climate, Energy & Commerce Advisory Committee as an alternate for Dr. Stephen A. Smith, Executive Director of SACE. I have also served as a member of various technical work groups dealing with energy supply and efficiency issues. I am the senior staff member responsible for our energy efficiency program advocacy, as well as being responsible for work in other program areas.

I have testified before the South Carolina Public Service Commission in the Duke Energy Carolinas Save-a-Watt proceeding. I have also prefiled testimony with the North Carolina Utilities Commission in the Duke Energy Carolinas Save-a-Watt proceeding which I anticipate delivering in late August 2009. I have also appeared before the Florida Public Service Commission and its staff in workshops, and presented to the Board of the Tennessee Valley Authority.

I have testified before the legislatures of Florida, North Carolina and Texas, the Texas Natural Resource Conservation Commission, and the U.S. Environmental Protection Agency on numerous occasions. I have served on numerous state and local government advisory committees dealing with environmental regulation and local planning issues in Texas. I have been an invited speaker to a wide

variety of academic, industry and government conferences on a number of energy, environmental and planning related topics.

A copy of my resume is attached as Wilson Exhibit 1.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of Natural Resources Defense Council and Southern Alliance for Clean Energy (NRDC and SACE).

Q. What topics and issues will you cover in your testimony?

A. In my testimony, I will cover several topics and issues. First, I will discuss how the interests of SACE and NRDC are consistent with the Legislative intent that is being fulfilled through these proceedings. Second, I will demonstrate that the impact of Florida's utilities on energy efficiency has fallen short of national leadership status from a broad perspective consistent with mainstream views on what constitutes national leadership on energy efficiency. Third, I will testify to matters relating to the issue of which cost-effectiveness tests should be considered by the Commission in this proceeding. Fourth, I will testify to the issue related to avoided capacity cost. Fifth, I will testify to the issue regarding whether the Commission should authorize financial incentives to utilities in this proceeding. Sixth, I will testify to the issue regarding whether the Commission should require addition of demand-side renewable energy goals to the FEECA process. Seventh, I will testify regarding the technical potential study and certain adjustments that we would recommend to the Commission.

I. ENERGY EFFICIENCY OBJECTIVES ARTICULATED IN THE 2008 ENERGY ACT

Q. Why have SACE and NRDC devoted substantial resources to intervene in this proceeding?

A. The 2008 Florida Legislature placed great emphasis on reducing statewide energy use in the 2008 Energy Act. It did so by enhancing existing goals and policies directed towards encouraging energy savings, and by establishing new standards and directives. These changes were part of a broader set of policies whose objective, in large part, is to reduce atmospheric carbon dioxide, the chief global

warming pollutant. Several of the most important goals, policies, standards and directives direct the Commission to make changes to how the FEECA goals are established.

The 2008 Energy Act renews and enhances the goals in the State Comprehensive Plan as it relates to energy, including FLA. STAT. § 187.201(11)(a) (2008), as follows:

> *Goal.*--Florida shall reduce its energy requirements through enhanced conservation and efficiency measures in all end-use sectors and shall reduce atmospheric carbon dioxide by promoting an increased use of renewable energy resources and low-carbon-emitting electric power plants.

Seven policies to implement this goal are of particular relevance to this proceeding, and can be found in an updated Section 187.201(11)(b), as follows:

> 1. Continue to reduce per capita energy consumption.
> 2. Encourage and provide incentives for consumer and producer energy conservation and establish acceptable energy performance standards for buildings and energy consuming items.
> 3. Reduce the need for new power plants by encouraging end-use efficiency, reducing peak demand, and using cost-effective alternatives.
> 4. Increase the efficient use of energy in design and operation of buildings, public utility systems, and other infrastructure and related equipment.
> 5. Promote the development and application of solar energy technologies and passive solar design techniques.
> 6. Provide information on energy conservation through active media campaigns.
> 7. Promote the use and development of renewable energy resources and low-carbon-emitting electric power plants.

I would draw the Commission's attention to note that a clear distinction is made between a policy to generally reduce per capital energy consumption and a policy to reduce the need for new power plants.

Evidently the Florida Legislature is well aware of the distinction between energy savings and capacity savings.

Of course, it is evident from a plain reading of the State Comprehensive Plan that it is intended to be a "direction-setting document" and shall only be reasonably applied where otherwise specifically authorized by law.[1] Since the Florida Energy Efficiency and Conservation Act (FEECA statute) does specifically authorize actions consistent with the State Comprehensive Plan, the plan's direction to "reduce [Florida's] energy requirements" provides overall guidance in interpreting the FEECA statute, as revised in the 2008 Energy Act.

The three most important substantive revisions to the FEECA statute in the 2008 Energy Act are the establishment of a statutory cost-effectiveness test for the FEECA goal setting process, the explicit authorization of financial incentives to utilities for successfully reducing the growth of electricity demand, and the addition of demand-side renewable energy resource goals to the FEECA process. The most important procedural revision to the FEECA statute is to establish the Florida Energy and Climate Commission, as a single government entity with a specific focus on energy and climate change, as a party to the proceedings. In the legislation establishing the Commission, the Legislature found significant value to Florida consumers, which comes from investments that reduce greenhouse gas emissions and stated that it is the policy of Florida to:

(a) Develop and promote the effective use of energy in the state, discourage all forms of energy waste, and recognize and address the potential of global climate change wherever possible.

[1] FLA. STAT. § 187.101.

(b) Play a leading role in developing and instituting energy management programs aimed at promoting energy conservation, energy security, and the reduction of greenhouse gas emissions.[2]

Again, as statements of intent and policy, it is necessary to look for supporting changes to procedure and standards. Evidently, the Florida Legislature understood that effective FEECA goals are essential to the reduction of greenhouse gas emissions, and it therefore directed that that the Florida Energy and Climate Commission "shall promote energy conservation in all energy use sectors throughout the state."[3]

NRDC and SACE advocate for the reduction of greenhouse gas emissions, and share a history of advocating for energy conservation in the interests of reducing air pollution and protecting consumers from unnecessary, risky and costly energy choices. The perspective we intend to bring to this proceeding is widely reflected across Florida law, as discussed above, and crystallized neatly in a single policy statement:

It is the policy of the State of Florida to:

(j) Consider, in its decisionmaking, the social, economic, and environmental impacts of energy-related activities, including the whole-life-cycle impacts of any potential energy use choices, so that detrimental effects of these activities are understood and minimized.[4]

It is our opinion that the goals proposed by the FEECA utilities and the testimony supporting those goals fall short of meeting statutory requirements and we join these proceedings to offer the Commission an alternative perspective that better meets the expressed Legislative intent and policies of the State of Florida.

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[2] FLA. STAT. § 377.601 (2008).

[3] FLA. STAT. § 377.703(i).

[4] FLA. STAT. §377.601(j).

II. HISTORICAL ENERGY EFFICIENCY ACHIEVEMENTS OF FEECA UTILITIES

Q. Do you agree with witnesses for the FEECA utilities that their historic energy efficiency achievements meet the expectations of Florida law, as amended by the 2008 Energy Act?

A. No, I do not. The witnesses for the seven FEECA utilities have made varying claims about how effective their historic programs have been. In the interests of brevity, I will offer a brief contrast to the testimony of John Haney on behalf of FPL.

Mr. Haney represents FPL to be "*the* industry leader in DSM performance."[5] Mr. Haney provides a variety of selective statistics to back up his claim, carefully focusing on cumulative demand reduction measured by avoided capacity, rather than energy savings, with the sole exception of a claim to be #4 in cumulative energy reduction from energy efficiency and, later, briefly mentioning that its cumulative program impacts are 46,646 GWh of energy savings.

The heavy focus on capacity savings, and avoided power plants, contrasts with the passing references to energy savings and the total lack of any reference to greenhouse gas emission reductions. Mr. Haney's testimony does not reflect a balanced assessment of FPL's historic or future performance with respect to the full policy and Legislative intent discussion above.

From a national perspective, the standard for measuring leadership on energy efficiency is energy savings. The most authoritative statement on the benefits of energy efficiency is presented in the *National Action Plan for Energy Efficiency* (NAPEE).[6] A review of its statement on the "Benefits of Energy Efficiency" reveals numerous references to energy savings and cost savings, but only a brief reference to reducing peak demand without putting it in a quantitative context.

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[5] Testimony of John Haney ("Haney Test."), p. 6 (emphasis added).

[6] U.S. Department of Energy and U.S. Environmental Protection Agency, "National Action Plan for Energy Efficiency," July 2006, p. ES-4.

The NAPEE statement describes three characteristics of "well-designed energy efficiency programs," which it asserts:

- "can provide opportunities for customers of all types to adopt energy savings measures that can improve their comfort and level of service, while reducing their energy bills,"
- "are saving energy at an average cost of about one-half of the typical cost of new power source," and
- "are delivering annual energy savings on the order of 1 percent of electricity . . . sales."

These three criteria provide a useful national reference standard to determine whether or not any of the FEECA utilities can claim to be a "national leader" on energy efficiency.

Q. Do any of the FEECA utilities demonstrate all three of the characteristics of "well-designed energy efficiency programs?"

A. No, they generally meet the first characteristic, may meet the second characteristic, but fall short of meeting the third.

Regarding the first characteristic, I would agree that most or all of the FEECA utilities offer "opportunities for customers of all types." This is a notable accomplishment, as many utilities across the southeast offer few programs and often to only selected customer classes.

Q. Do the FEECA utilities demonstrate that the cost-effectiveness of their programs is in line with a "well-designed energy efficiency program?"

No, the FEECA utilities have not testified as to the average cost of their existing energy efficiency programs. According to independent sources such as Lazard, new gas plants are averaging 8 cents per kWh and new nuclear plants are forecast to cost 10 to 14 cents per kWh on a levelized basis. Based on the NAPEE criteria and my general review of relevant publications, I would look to a well-designed energy efficiency program in Florida to be utilizing measures with costs of 0 to 5 cents per kWh, with average costs of less than 4 cents per kWh.

In the absence of utility testimony on this topic, I referred to a study that compared the cost-effectiveness of various utility-led energy efficiency programs by Summit Blue Consulting.[7] The study found that the "Median Cost of Conserved Energy (First Year) is 17 cents/kWh," but "[a]ssuming a 10-15 year average DSM measure lifetime, cost of lifetime energy savings is generally 2 cents or less." NRDC/SACE Witness Mosenthal testifies to similar cost data. The data presented in this study appear to indicate that Progress Energy Florida, Gulf Power, and FPL have costs that are significantly higher than most other utilities included in the study. TECO's unit costs appear to be above average, but within the range of most other utilities. The study indicates, in an apparent reference to Florida utilities (and perhaps Duke Indiana as well) that "Some organizations focus on demand savings over energy savings, which often leads to higher costs of conserved energy."[8]

The Summit Blue study later characterizes all four Florida utilities as high cost, low energy savings utilities relative to other utilities in the study. However, some of the detail data indicate more favorable results in terms of cost-effectiveness. The commercial and industrial cost-effectiveness for TECO and FPL is quite similar to other utilities studied (Gulf Power, however, is a high-cost outlier).

On the other hand, in one recent public presentation, Susan Clark claimed that FPL's program costs are less than 1 cent per kWh energy savings.[9] Furthermore, the data used by Summit Blue are derived from Energy Information Administration Form 861 data, which I consider to be somewhat problematic for this type of analysis. (I will discuss issues with these data later in my testimony.) Therefore, I am uncertain whether FEECA utilities are saving energy at an average cost of no more than one-half of the typical cost of new power source.

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[7] Randy Gunn, "Benchmarking 2005 DSM Results," Summit Blue Consulting LLC, February 8, 2007.

[8] Gunn, p. 6.

[9] Susan Clark, "Overview of Florida's Energy Efficiency & Conservation Efforts & Goal Setting Process," presentation to Tampa Mayor's Citizen/TECO Energy Conservation Task Force, April 13, 2009.

Q. Do the FEECA utilities demonstrate that the annual energy savings of their programs is in line with a "well-designed energy efficiency program?"

A. No, the FEECA utilities have not demonstrated that they are delivering annual energy savings on the order of 1 percent of electricity sales. In particular, FPL's assertion that it is a "national leader" is not accurate when viewed from this perspective.

In comparison, NRDC/SACE Witness Mosenthal testifies regarding energy efficiency programs that have operated for many years with annual impacts on the order of 1 percent of electricity sales. In one case, Efficiency Vermont, the program administrator ramped-up from 1 percent to 2.5 percent in a mere two year timeframe.

Q. What evidence refutes FPL's claim to be a "national leader" with respect to operating energy efficiency programs that have a large impact on reducing energy consumption by its customers?

A. While the cumulative impact that FPL reports for its historic achievements may be of national significance, a review of the data provided in Mr. Haney's testimony and FPL's most recent resource plan demonstrate that its current and proposed efforts do not establish FPL as a national leader in partnering with its customers to reduce energy consumption.

From 2000 to 2008, FPL reported that its programs achieved energy savings of 1,718 GWh.[10] The energy savings impacts of FPL energy efficiency programs implemented during this time period was approximately 0.2 percent of annual sales during this period. The annual energy savings impacts for FPL relative to historic sales are presented in Exhibit JDW-1.

Mr. Haney testifies that FPL has achieved 46,646 GWh of energy savings. I did not find a clear explanation of what this figure represents, but based on the 1,718 GWh annual energy savings impact of FPL programs from 2000 to 2008, I would assume that this is the cumulative energy savings since "FPL

[10] Haney Test., Exhibits JRH-8 and JRH-9.

1 began offering DSM programs in the late 1970s." This suggests that the impact of FPL programs over
2 this period has been an average of 1,500 GWh in annual energy savings.
3 Mr. Haney also testifies that the cumulative energy efficiency impacts of FPL programs is 3,976
4 GWh in 2008.[11] Deducting the net increase in annual energy savings from 2000 to 2008 of 1,718 GWh,
5 this indicates that 2,258 GWh of current program impacts are derived from programs that occurred
6 before 2000.

	Energy Savings	Source
Impacts of all FPL programs, cumulative in 2008	3,976 GWh	(JRH-1)
- Limited to programs offered in 2000 – 2008	1,718 GWh	(JDW-1)
- Remainder, due to programs offered prior to 2000	2,258 GWh	(calculated)

7
8 This suggests an average measure life for FPL energy efficiency programs of approximately 12
9 years. Thus, while Mr. Haney may be correct in stating that FPL ranks 12th of 43 utilities reporting
10 energy efficiency, his exhibit appears to rely on energy efficiency investments made over 12 years ago
11 for approximately half of the performance reported by FPL.
12 The proposed 2010-2019 goals for FPL are 60 percent lower than their historic impacts, a drop
13 to annual energy savings of 0.08 percent of FPL forecast sales for the same years. In comparison to the
14 1,718 GWh impacts for 2000 to 2008, FPL proposes to achieve 770 GWh for 2010 to 2018. The annual
15 energy savings goals for FPL relative to forecast sales are presented in Exhibit JDW-2.
16 In summary, FPL has not met the criteria set forward in the NAPEE discussion to be recognized
17 as operating a "well-designed" energy efficiency program.

[11] Haney Test., Exhibit JRH-1.

Q. What evidence supports your claim that none of the FEECA utilities have demonstrated that they are delivering annual energy savings on the order of 1 percent of electricity sales?

A. To compare all the FEECA utilities with their peers across the country, I rely upon data from the Energy Information Administration (EIA). I have personally compiled a database that incorporates data from forms EIA-861 and EIA-923 (and predecessor forms) for several recent years. I believe these to be the same data that Mr. Haney uses.[12] Our database also includes custom modifications to allow linkages among utilities that share holding companies, a very limited number of data recessions in cases of very obvious data entry error, attribution of multi-state utility data to each state within the utility's service territory where the utility does not report data at the state level, and the addition of energy efficiency program impacts reported by state or third-party administered programs such as Efficiency Vermont. I have conducted numerous informal verifications of the data in the EIA database against utility reported data, such as official state energy efficiency performance reports.

In general, the EIA data can be relied upon to provide useful information regarding annual energy efficiency program impacts in terms of reduced retail sales (energy savings, GWh), demand reduction (capacity savings delivered, MW), and demand response (reduction in required reserve margin, MW). The latter two terms are conveniently aggregated for purposes of demonstrating overall capacity impacts (MW). However, I have discovered a number of instances in which utilities that operate energy efficiency programs fail to report impacts to the EIA, or report data that appear to be inconsistent with data they report in other locations. In a few instances, I have deleted obvious instances of data entry error where the utility appeared to report data using the wrong units, resulting in program impacts that were obviously 1,000 times greater than they were likely to be. In each case, these were for utilities much smaller than the FEECA utilities.

[12] Haney Test., Exhibit JRH-3.

In the aggregate, I prefer to rely on data assembled from state sources when possible.[13] For example, SACE recently released a report that compared the 50 states and the District of Columbia on energy efficiency program impacts.[14] To compile these state-by-state impact data, I relied on a report from American Council for an Energy-Efficient Economy (ACEEE) which included data for several states that was assembled from original sources at the state level. For the states that were not covered, I relied upon the database described above. I also compared the ACEEE data to my database, and found that the results were similar for a number of states, but that the ACEEE data indicated significantly greater impacts than my database in several cases. I attribute the discrepancy to some utilities failing to properly complete form EIA-861.

The EIA data can also be relied upon to provide useful information regarding utility sales, fuel consumption, and other topics. To the extent that the EIA data vary from other published data (e.g., utility resource plans), the variance can be attributed to slightly different definitions or reporting year coverage.

However, other aspects of the EIA data are far more problematic. In my experience, cumulative energy savings data for particular utilities are often inconsistently reported from year to year. Efforts to systematically reconcile the reported annual energy savings with year-to-year cumulative annual energy savings data often produce illogical results. Based on my efforts last year, I abandoned efforts to assemble data similar to those presented by Mr. Haney with respect to energy savings.[15] Although I have not made similar efforts to investigate the historical consistency of capacity savings data, it is my impression that the cumulative capacity savings data in the EIA database do not present the same

[13] Testimony of NRDC/SACE witnesses Mosenthal and Steinhurst cite various data relating to specific efficiency program impacts that I would consider to be more authoritative than the nationwide analysis I present here.

[14] Exhibit JDW-3.

[15] Haney Test., Exhibit JRH-3.

difficulties as the cumulative energy savings data due to the need to ensure appropriate system capacity.

Another aspect of the EIA data that are particularly problematic are the energy efficiency cost data. Utilities are very inconsistent in how they report data in form EIA-861 with respect to cost. As a result, I and others who have an interest in benchmarking the costs of utility energy efficiency programs find it necessary to compile such data from a variety of sources, which may include form EIA-861 but only on a case-by-case basis.

Based on this experience, the most useful application of the EIA data in the energy efficiency field is to demonstrate the range of utility accomplishments across the country based on a snapshot of annual impacts of currently operating programs. For example, although I would not rely on EIA data to conclusively demonstrate that FPL is "#1" or "#2" with respect to its strong performance in capacity savings (MW) relative to other utilities, it is reasonable for FPL to use the capacity savings data to substantiate a general claim to national leadership in this particular component of energy efficiency performance.

In the report I referred to above, SACE concluded that "None of the Largest Southeast Utilities Lead on Energy Efficiency."[16] This analysis was conducted at the utility level, with data disaggregated by state based on relative sales (which does not affect any of the FEECA utilities). Of the 75 utilities analyzed, FPL is the highest ranking utility from the Southeast, but ranks only 31st nationally for 2007 program impacts in terms of annual savings. FPL's impact is about 1/10th the annual impact of the leading utilities in California and New England, and far less than utilities from other regions of the country.

[16] Exhibit JDW-3, p. 12.

In fact, FPL's annual energy savings impact of 2.0 kWh per MWh retail electric sales is less than aggregate impacts of energy efficiency programs in 20 states, considering the efforts of all utilities and state/third-party efficiency programs included in our database or ACEEE reported data, even those utilities with no reported energy efficiency program impacts. The states that exceed FPL's annual program impact on a relative basis (measured in kWh energy saved per MWh retail electric sales) are:

- Arizona (4.1)
- California (9)
- Colorado (2.9)
- Connecticut (13)
- Idaho (4.2)
- Iowa (7)
- Maine (8.5)
- Massachusetts (9)
- Minnesota (7)
- Montana (2.8)
- Nevada (6)
- New Hampshire (6.8)
- New Jersey (3)
- New York (7)
- Oregon (9)
- Rhode Island (8)
- Utah (2.6)
- Vermont (18)

- Washington (7)
- Wisconsin (7)

The other six FEECA utilities reported lower energy efficiency program impacts to EIA in 2007. Using the same units, the impacts are as follows:

- FPL (2.0)
- Progress Energy Florida (1.3)
- Gulf Power (1.1)
- Tampa Electric (1.1)
- JEA (1.0)
- OUC (Did not report energy efficiency program impacts)
- FPUC (0.7)

The utility-specific data underlying the graph discussed below are provided as Exhibit JDW-4. Because FPUC is not one of the 150 largest utilities, I calculated its program impact directly from my database for this testimony.

Across the Southeast, few utilities have demonstrated that they are delivering annual energy savings on the order of 1 percent of electricity sales, based on data available through 2007. The two most notable exceptions happen to be in Florida, according to the database I described above, but are not included in Exhibit JDW-4 because, like FPUC, they are not among the 150 largest utilities. The two Southeast utilities that have achieved energy savings impacts on the order of 1 percent of electricity sales are Gainesville Regional Utilities and the Reedy Creek Improvement District (which provides energy services to Walt Disney World).

It is also notable that one major Southeast utility has committed to goals on a similar scale. NRDC, SACE and other organizations that had intervened in Duke Energy Carolina's Save-a-Watt

proceedings recently agreed to support a modified proposal that includes, among other significant changes, a commitment to achieve energy savings of 0.75 percent of sales by 2013 and a target of 1 percent of sales by 2015.[17]

Q. Do low electric rates inhibit Florida and the rest of the Southeast from achieving higher energy efficiency impacts?

A. No, in the report I referred to earlier, SACE concluded that, "Energy Efficiency Impacts Are Large in Some States Where Rates Are Comparable to the Southeast."[18] This analysis suggests that annual energy savings are three to five times greater than Florida in six states with rates are *lower* than Florida.

Q. Do you agree with FEECA utilities witnesses that programs to achieve peak reduction are important?

A. Yes, Mr. Haney and other FEECA utility witnesses appropriately point to significant accomplishments in terms of programs to reduce peak demand. I have no doubt that these programs are successful and represent industry leadership in one component of their energy efficiency programs.

I would further agree that the success of FEECA utilities in peak reduction, compared to energy savings, is a logical reflection of the past policy of the Florida Public Service Commission to utilize the RIM test. The RIM test selectively favors programs that have the effect of reducing peak demand levels over programs that are more effective at reducing overall energy savings.

The bias of the RIM test towards peak saving programs is because the RIM test requires that the system cost savings achieved by a measure must exceed the sum of the program cost and the lost revenues. Programs that focus on peak reduction result in smaller amount of lost revenues than programs that significantly reduces overall energy consumption.

[17] North Carolina Utilities Commission, Docket E-7 Sub 831; South Carolina Public Service Commission, Docket 2007-358-E.

[18] Exhibit JDW-3.

Because most utility customers in Florida pay fixed rates regardless of marginal energy costs, a large share of electricity demand occurs at times when avoided costs are lower than rates. During those hours, even virtually cost-free programs are unlikely to be considered cost-effective programs when evaluated using the RIM test. For example, simply encouraging dimming of unnecessary parking lot lights late at night would probably fail the RIM test. Until Commission policy is revised to emphasize the TRC test, Florida utilities will continue to avoid programs that substantially reduce energy use during off-peak hours, regardless of program cost.

The Florida emphasis on peak reduction is rather unusual. According to utility self-reported data made available via the Energy Information Administration, Florida stands out as relatively strong in terms of peak reduction, but with modest overall energy savings, compared to other regions of the country.

Q. Does FPL misrepresent its accomplishments in testimony?

A. No, Mr. Haney's testimony is very carefully written to avoid false statements, albeit selectively. However, in public documents I have reviewed, other utility speakers are somewhat less careful in their representations. For example, in the presentation discussed above, Susan Clark stated that "Florida ranks 2nd among states in Energy Efficiency and Demand Response." Throughout her presentation, Ms. Clark varies in her representation between claims of impressive energy savings and peak reduction impacts. In my opinion, FPL sometimes encourages its audiences to form an impression that is not fully supported by actual performance data.

III. COST-EFFECTIVENESS PROVISIONS IN THE 2008 ENERGY ACT'S AMENDMENTS TO FEECA

Q. Earlier in your testimony, you referred to the three most important substantive revisions to the FEECA statute in the 2008 Energy Act. Can you please point to the statutory revisions that establish a statutory cost-effectiveness test for the FEECA process?

A. The 2008 Energy Act establishes criteria that the Commission is required to consider when establishing the goals.[19] Previously the only standard applied to the adoption of goals was that they be "appropriate,"[20] which left the Commission wide latitude to exercise its discretion as an expert tribunal and to weigh and interpret Legislative intent. In establishing goals, the Legislature now requires that the Commission consider:

a) The costs and benefits to customers participating in the measure.

b) The costs and benefits to the general body of ratepayers as a whole, including utility incentives and participant contributions.

c) The need for incentives to promote both customer-owned and utility-owned energy efficiency and demand-side renewable energy systems.

d) The costs imposed by state and federal regulations on the emission of greenhouse gases.[21]

As Mr. Cavanagh, Mr. Steinhurst, and Mr. Mosenthal testify, there can be little doubt that the plain language of section 3(a) refers to the Participant Cost Test (PCT) and of section 3(b) refers to the Total Resource Cost (TRC) test.

Q. Is there evidence in the Legislative record that indicates that the PCT test is the basis for Section 366.82(3)(a)?

A. Yes, two Legislative reports indicate that Section 366.82(3)(a) refers to the PCT test.[22]

Q. Is there evidence in the Legislative record that indicates that the FEECA utilities have applied the PCT test in a manner that is not supported by Section 366.82(3)(a)?

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[19] FLA. STAT. § 366.82(3) (2008).

[20] FLA. STAT. § 366.82(2).

[21] FLA. STAT. § 366.82(3) (2008).

[22] Exhibits JDW-5 and JDW-6.

A. Yes, in the House of Representatives Staff Analysis of HB 7135 for the Committee on Energy and the Environment & Natural Resources Council,[23] the staff explains that the Participant test, "Benefits include incentives that are paid by the utility to the customers . . . ." NRDC/SACE Witness Mosenthal testifies that the FEECA utilities applied the PCT by screening out measures that fail *without* any incentive. The failure to include the incentive paid by the utility to the customers is not consistent with the available evidence in the Legislative record.

Q. Is there evidence in the Legislative record that indicates that the TRC test is the basis for Section 366.82(3)(b)?

A. Yes, two Legislative reports indicate that Section 366.82(3)(b) refers to the TRC test.[24] The Florida House of Representatives' 2008 Legislative Session End of Session Report summarizes the new Section 366.82(3) as follows:

> Revises the Florida Energy Efficiency and Conservation Act (FEECA), to explicitly allow efficiency and conservation investments across generation, transmission, and distribution as well as efficiencies within the user base; to encourage the development of demand-side renewable energy; and to provide criteria the Public Service Commission (PSC) is to consider when evaluating proposed conservation and efficiency measures. The criteria the PSC is required to consider include the following:
>
> - The costs and benefits to customers participating in the measure (Participants test).
> - The costs and benefits to the general body of ratepayers as a whole, including both utility incentives and participant contributions (similar to a Total Resource Cost test or TRC test but including the costs of incentives)

[23] Exhibit JDW-6, p. 22.

[24] Exhibits JDW-5 and JDW-6.

- The need for incentives to promote both customer-owned and utility-owned energy efficiency and renewable energy systems.
- The costs imposed by state and federal regulations on the emissions of greenhouse gases.[25]

As the second bullet indicates, this report confirms that the language of section 3(b) refers to the TRC test. Almost identical language is included in the House of Representatives Staff Analysis of HB 7135 for the Committee on Energy and the Environment & Natural Resources Council.[26] The staff evidently had a clear understanding of the distinction between the RIM and TRC tests, as the staff analysis also includes a clear discussion of the two tests.

It appears to me from the legislative history that the Legislature may have been under the impression that the TRC test did not include utility incentives. To the extent that this is correct, the Legislature (or the authors of the summaries) was under a misimpression. As testified by Mr. Cavanagh, the TRC test does include incentives paid to customers as those incentive payments are a component of the cost of the efficiency measure, which includes both the participant's contribution and the incentive provided by the utility. In addition, as Mr. Cavanagh testifies, the TRC test is completely consistent with the actual text of section 3(b) because it does consider both "utility incentives and participant contributions."

Q. Is there evidence in the legislative record that indicates how a misunderstanding arose regarding the way in which utility incentives are considered in the Total Resource Cost test?

A. Yes, the staff analysis indicates that, "Unlike the RIM test, however, incentives and decreased revenues are not included as costs in the TRC; instead, these factors are treated as transfer payments

[25] My Testimony, Exhibit JDW-5, p. 57.

[26] My Testimony, Exhibit JDW-6, p. 22.

among ratepayers."[27] This language appears to be based on a presentation by Bob Trapp, staff to the Commission, which is Exhibit JDW-7.

The confusion arises because in the TRC test (unlike the Utility Cost Test), any utility incentive paid to the customer is not counted as a utility cost. Mr. Trapp correctly represented that the utility incentive is not explicitly considered as a utility cost (as it is in the Utility Cost Test). If it were, this amount would be double-counted.

The Total Resource Cost can be calculated in either of two ways:

Administrative Costs + Measure Costs

or

Administrative Costs + Utility Incentive + Participant Contribution

Since the standard interpretation of the TRC test does include consideration of all participant costs, including "utility incentives and participant contributions," it appears to me that the legislative intent behind the clarification to the TRC test was to correct a deficiency in the test that does not actually exist. In the alternative, if one were to interpret the language to require that the Total Resource Cost should be modified by adding the "utility incentives and participant contributions," the resulting Total Resource Cost would be:

Administrative Costs + Measure Costs + Utility Incentive + Participant Contribution

or

Administrative Costs + 2 x (Utility Incentive + Participant Contribution)

which double-counts both the utility incentive and the participant contribution, a result that makes no sense.

[27] Exhibit JDW-6, p. 21.

Q. Is there any other statutory indication that the overall cost-effectiveness framework is intended to be a TRC-like test rather than a RIM test, in addition to a correct application of the Participant Cost Test?

A. Yes, in the context of instructions regarding participation in these proceedings, the Florida Energy and Climate Commission is directed to analyze "policy options that can be implemented to achieve a least-cost strategy."[28] The TRC test is the appropriate framework for minimizing total energy *costs*, while the RIM test emphasizes low *rates*. I defer to Mr. Cavanagh, Mr. Steinhurst and Mr. Mosenthal for further testimony regarding the difference between the TRC and RIM Test.

Q. Is there any evidence in the record that the Legislature was concerned about the key issues addressed by the RIM test?

A. No. Mr. Cavanagh testifies that a purpose of the RIM test is to consider the financial impacts of energy efficiency programs in terms of lost revenues and, consequently, on the rates of non-participants. In my review of the new statutory language and legislative history relating to the FEECA goals, I see nothing to suggest that the PSC should focus on lost revenues, electricity rates, or impacts to non-participants and, accordingly, nothing to suggest that the PSC should employ the RIM test in the FEECA goal-setting process.

Q. Taken as a whole, then, what cost-effectiveness test should apply in these proceedings?

A. Florida law now requires the Commission to consider the TRC test, and does not require or authorize the use of the RIM test for the purpose of setting energy efficiency or demand-side renewable energy goals for the FEECA utilities.

[28] FLA. STAT. § 366.82(5)(b).

IV. ISSUE RELATED TO AVOIDED CAPACITY COST

Q. How have the utilities compared nuclear power with energy efficiency in resource planning studies?

A. Neither FPL nor Progress Energy Florida appear to have conducted any analysis in which the benefit of energy efficiency was valued, in part, based on the avoided capacity cost associated with the forecast need to add an additional nuclear unit. There are two possible explanations for this.

First, I have asked a number of experts in Florida utility regulatory law about this matter, and have been told on occasion that the avoided capacity cost methodology specifically excludes consideration of nuclear power as an avoidable unit. However, I have not been able to document this with a Commission proceeding.

Second, the timing and process by which recent nuclear power plants have been considered and approved has not afforded a procedural opportunity for such an analysis. At the time of the prior FEECA proceeding, neither FPL nor Progress Energy Florida's Ten-Year Site Plans indicated the possibility that additional nuclear capacity might be added.[29] Yet in 2008, the FPSC approved the Determination of Need for two nuclear units in Levy County. Considering the timing of the initial announcement and Commission approval, neither FPL nor PEF appear to have presented a nuclear power plant as an "avoidable unit" for purposes of calculating avoided capacity costs in a FEECA goal setting proceeding.

[29] The current goals were approved on August 9, 2004. The first recent mention of a possible application for a new nuclear unit appears in the Commission report, "A Review of Florida Electric Utility 2005 Ten-Year Site Plans," December 2005. "PEF has recently announced that it is pursuing two licenses for new nuclear plants with an in-service date as early as 2015. In a recent press release, PEF stated, 'We have made it clear that we will keep the option open to build new nuclear generation. Keeping a balanced generation mix ensures reliability and price stability for our customers, and affirms our commitment to the environment.' While not a formal part of this year's review, the Commission will closely monitor the progress of the announced nuclear facilities in future *Ten-Year Site Plans*." A review of this document indicates that no other nuclear facilities were anticipated at the time it was published.

Neither did the procedural opportunity to establish the avoided capacity cost of nuclear power arise in need determination proceedings. In the FPL proceeding, FPL Witness Brandt testified, "While FPL does not have approved DSM goals for 2015 through 2019, FPL estimates that it will implement a total of approximately 1,899 MW of additional DSM programs at the generator from August, 2006 through August, 2020," and that, "FPL has estimated for this time frame that it will continue to implement DSM at a rate that is consistent with its plans and accomplishments through 2014."[30] In other words, no specific cost-effectiveness analysis of energy efficiency measures was conducted as part of the need determination study, rather FPL relied on findings dating from a study that occurred well over a year before its nuclear power plant plans were introduced into a Ten-Year Site Plan.

In summary, either by rule, practice or merely coincidence of schedule, the most expensive power plant investments in recent Florida history proceeded to approval without being directly compared to energy efficiency in a resource planning framework exhibiting the least-cost planning framework briefly described in the testimony of NRDC/SACE Witness Mosenthal.

V. The 2008 ENERGY ACT AND FINANCIAL INCENTIVES TO UTILITIES

Q. Earlier in your testimony, you referred to the three most important substantive revisions to the FEECA statute in the 2008 Energy Act. Can you please point to the statutory revisions authorize financial incentives to utilities for successfully reducing the growth of electricity demand?

A. The 2008 Energy Act authorizes the Commission to establish a performance-based financial reward system for utilities, depending on whether they exceed their goals (rewards) or fail to meet their goals (penalties) in Section 366.82(8). The financial reward is capped at an additional return on equity of 50 basis points in Section 366.82(9).

[30] FPL, "Direct Testimony & Exhibits of C. Dennis Brandt," Docket No 070650-EI, October 16, 2007, p. 27.

The FEECA utilities have indicated their view that the specific issues related to this financial incentive should be deferred to a subsequent proceeding. I agree with this approach, with the caveat that incentives are only appropriate if linked to the achievement of strong goals. In addition, I encourage the Commission to establish and support a process that can lead to a consensus framework among interested parties to establish an appropriate system taking into consideration Florida-specific circumstances as well as best practices from across the country.

VI. 2008 ENERGY ACT AND THE ADDITION OF DEMAND-SIDE RENEWABLE ENERGY

Q. Earlier in your testimony, you referred to the three most important substantive revisions to the FEECA statute in the 2008 Energy Act. Can you please point to the statutory revisions that require addition of demand-side renewable energy to the FEECA process?

A. The 2008 Energy Act replaced "development of cogeneration" with "development of demand-side renewable energy systems."[31] The commission is "specifically" directed to include goals to "encourage development of demand-side renewable energy resources." As discussed above, the 2008 Energy Act explicitly recognized that incentives would be required to promote the development of such systems.

A review of the language related to the goals for demand-side renewable energy in the FEECA statute does not indicate any language that suggests that the Legislature expected that the Commission might establish a "zero" goal. For example, it appears that a non-zero goal is presumed in the discussion of the financial incentive and penalty system for utility performance previously discussed, as it is difficult to describe a financial reward/penalty system for exceeding or failing to meet a goal of "zero."

NRDC/SACE Witness Steinhurst provides testimony as to how the Commission might consider the evidence regarding an appropriate demand-side renewable energy goal.

[31] FLA. STAT. § 366.82(2) (2008).

VII. THE TECHNICAL POTENTIAL STUDY

Q. Did you participate in the technical potential study as a representative of SACE to the Collaborative?

A. Yes, I was assigned the lead role for my organization. In addition, on several occasions I was authorized to speak on behalf of both organizations.

Q. What is your overall impression of the technical potential study?

A. Overall, the technical potential study was conducted in a professional and thorough manner. The collaboration between utilities and our organizations was generally productive and communications were effective for the most part.

Q. Are there shortcomings to the technical potential study that the Commission should take into account in the FEECA goals proceeding?

A. Yes, there are two types of shortcomings in the study. First, the study omitted several end user sectors from analysis due to a lack of sufficient data or information regarding potential efficiency measures. This was a reasonable decision, but the decision to effectively represent these sectors as without any efficiency opportunities is not the best choice that could have been made. Second, it is my opinion that the consultants erred in omitting several efficiency measures from the study. These measures met the criteria for inclusion in the study but were overlooked or discarded in the interests of time, or for some other reason.

Q. Which end user sectors were excluded from study?

A. The technical potential study did not consider four end-use sectors: agriculture; transportation, communications and utilities (TCU); construction; and outdoor/street lighting. The reasons for not including each sector and the share of total electric sales by the FEECA utilities are described below.

End-use sector excluded from study	Reason for excluding end-use sector	Percent of total electric sales by the FEECA utilities to sector

End-use sector excluded from study	Reason for excluding end-use sector	Percent of total electric sales by the FEECA utilities to sector
Agriculture	Lack of primary research on end-use baselines and efficiency opportunities	2 %
Construction	Temporary load (note: with ongoing activity, temporary site activities are continuous with respect to operator and utility providing electric service)	1 %
Outdoor / street lighting	Represented as already saturated with efficient equipment (e.g., LED traffic signals, pulse-start metal halide lamps)	1 %
Transportation, communications and utilities (TCU)	Lack of primary research on end-use baselines and efficiency opportunities	7 %
TOTAL		**10 %**

Source: Statewide Technical Potential Study, p. 2-2.

According to the statewide technical potential report, the out-of-scope sectors accounted for just over 10 percent of total annual electric sales by the FEECA utilities.

Q. Do you agree with the decision to exclude these end-use sectors from the technical potential study?

A. I agree that where there was insufficient data to study an end-use sector, then it would not have been a useful exercise to apply the detailed study methods to those sectors. I disagree with the overall method of effectively assuming no potential for energy efficiency in these end-use sectors.

I do not agree that there was or should have been insufficient data to examine two excluded end-use sectors: water and wastewater utilities and outdoor/street lighting. It is my general understanding that there is substantial experience with energy efficiency programs in the water and wastewater utility sector.

The study indicates that the outdoor and street lighting markets "are already saturated with efficient equipment," referring to metal halide or high-pressure sodium lamps. This conclusion is drawn

based on a draft 2004 US Department of Energy study.[32] However, this appears to be a misinterpretation of the US DOE study, which refers to "an overall decline in outdoor-type fixture shipments . . . result[ing] from market saturation." In any event, the source data informing this discussion date to 2001 and do not include any data specific to Florida or the Southeast. For this reason, I do not see any evidence in the technical potential study to substantiate the claim that Florida's outdoor and street lighting markets are "saturated with efficient equipment." Examining the replacement of existing lighting with high efficiency lighting should have been included in the study.

In addition, the study did not consider LED traffic signals. The technical potential study suggests that this decision was made on the basis of "revised federal efficiency standards which require all new traffic signals to meet LED-equivalent performance criteria." However, this standard for new signals does not appear to require upgrades to existing signals; promoting the replacement of existing signals with new LED-equivalent traffic signals is a measure that should have been included in the study.

According to the statewide technical potential report, the out-of-scope sectors accounted for just over 10 percent of total annual electric sales by the FEECA utilities. The study effectively assumes that there is no technical potential for energy efficiency measures for end-uses representing 10 percent of total electric demand, a conclusion that is not supported by the methodology.

Q. Rather than assuming no efficiency opportunities in those end user sectors, what other estimate of efficiency opportunities could the consultants have offered for each sector?

A. Rather than zero, a better proxy for the technical potential for energy efficiency in the four excluded end-use sectors would be the statewide industrial technical potential. (Of course, this proxy method is not necessary for the outdoor and street lighting, traffic signal, wastewater utility, and water

[32] U.S. Department of Energy, "Draft Technical Support Document - Energy Efficiency Program for Commercial and Industrial Equipment: High-Intensity Discharge Lamps, Analysis of Potential Savings," Docket #: EE-DET-03-001, 2004.

supply utility end use sectors, which should have been studied directly.) According to the technical potential study, "The total technical potential for energy savings in the industrial sector of the FEECA utilities is estimated to be approximately 2,108 GWh, which equates to 18 percent of current baseline industrial electricity consumption."[33]

Applying this 18 percent value as the proxy technical potential, and making use of the total statewide sales for 2007 by the FEECA utilities (171,672 GWh),[34] the excluded end-use sectors could have offered an additional technical potential of about 3,400 GWh, as summarized below.

End-use sector excluded from study	Percent of total electric sales by the FEECA utilities to sector	Calculated Technical Potential Applying 18% Proxy Value
Agriculture	2 %	618 GWh
Construction	1 %	309 GWh
Outdoor / street lighting	1 %	309 GWh
Transportation, communications and utilities (TCU)	7 %	2,163 GWh
TOTAL	**10 %**	**3,399 GWh**

Q. Were there any end-use technologies that appear to have been omitted from the study?

A. Yes, it appears that the technical potential study failed to examine small commercial HVAC systems. A review of the commercial measures list indicates that the cooling technologies examined in the study are 500 ton units (measures 300, 301, 340-342), 10 ton units (measures 320 – 323), and single-room 1 ton units (measures 360, 361).

The small office and small retail market is frequently served by equipment similar to that offered to the residential market. I and other SACE staff have observed such installations on frequent occasions,

[33] Statewide Technical Potential Study, p. 3-44.

[34] Statewide Technical Potential Study, p. ES-2.

and have confirmed the practice in conversation with building industry experts and other energy research personnel.

I expected that the data necessary to adjust the technical potential study would be included in the commercial on-site survey that was assigned to KEMA. However, the survey data were not used in the technical potential study and I am not aware that its findings have been submitted to the Collaborative, nor has Itron updated the study (e.g., measure saturation inputs) with the survey data.[35] For this reason, I am unable to provide even a rough estimate of the energy used by residential-type HVAC systems in the commercial sector.

Q. What criteria did the study adopt for including energy efficiency measures in the study?

A. Based on Itron's professional judgment, the final measure list included measures that it considered to be commercially available in the Florida market from more than one commercial source, or measures for which authoritative reports were available from disciplined studies by third-party evaluators. Quite reasonably, claims substantiated only by the manufacturer or other commercially-interested parties were considered to be unreliable. Furthermore, required data would need to be available for the measure, including measure costs, measure savings, measure saturation, and measure feasibility.[36]

Q. Do you agree with how these criteria were applied to exclude efficiency measures from the study?

A. While we were generally satisfied with the decisions to include or exclude measures from the technical potential study, the following four energy efficiency measures appeared to meet the criteria established by Itron for further study.

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[35] Statewide Technical Potential Study, p. 3-30.

[36] Itron Scope of Work, pp. 1-3, table 1-1, May 30, 2008.

Energy Efficiency Measure Overlooked	Sector
Building Commissioning, Re/Retro-Commissioning	Commercial
High Efficiency Air-Source Heat Pump – 19 SEER	Residential
Variable-Speed Pool Pumps	Commercial
LED Luminaries	Residential and Commercial

Q. What evidence supports your assertion that the study should have considered building commissioning-re/retro-commissioning as meeting the criteria for inclusion in the technical potential study?

A. NRDC and SACE requested that building commissioning, re-commissioning, and retro-commissioning (hereafter, commissioning) be included in the commercial measure list. Consideration of commissioning was not supported in the Collaborative; our impression was that since commissioning is an activity that occurs during new construction, this was considered an opportunity for building codes. I disagree with that perspective, since utilities are uniquely positioned to partner with building managers to encourage high-quality commissioning activities since they are in frequent communication with the building during establishment of new electric service.

Regarding re-commissioning, Itron indicated that it would be represented in the commercial measure list via the chiller and DX tune-up measures and the air handler optimization measure.[37] Furthermore, EMS optimization is listed among the commercial measures.

However, it is not evident that the technical potential study measures list does actually encompass the entire commissioning concept. For example, the ENERGY STAR Building Upgrade Manual identifies nine categories of "retrocommissioning opportunities commonly found during a building walk-through. Their presence indicates potential problems that can be identified and fixed through a retrocommissioning project:

- Systems that simultaneously heat and cool, such as constant and variable air volume reheat

[37] Michael Ting, e-mail dated September 15, 2008.

- Economizers, which often need repair or adjustment—potential problems include frozen dampers, broken or disconnected linkages, malfunctioning actuators and sensors, and improper control settings
- Pumps with throttled discharges
- Equipment or lighting that is on when it may not need to be
- Improper building pressurization (either negative or positive), that is, doors that stand open or are difficult to get open
- Equipment or piping that is hot or cold when it should not be; unusual flow noises at valves or mechanical noises
- Short cycling of equipment
- Variable-frequency drives that operate at unnecessarily high speeds
- Variable-frequency drives that operate at a constant speed even though the load being served should vary[38]

The widespread availability of these practices is demonstrated by the recent release of the US EPA Rapid Deployment Energy Efficiency Toolkit, which "provides detailed program design and implementation guides for **10 broadly applicable energy efficiency programs.**"(emphasis added) One of the ten programs cited is "Retro-commissioning" for "Commercial/Government/Schools."[39]

Furthermore, according to FMI, consultants for the National Energy Management Institute (NEMI), the retro-commissioning market of $175 million is approximately one and a half times larger in annual revenues than the new commissioning market of $114 million. National and international firms

[38] US Environmental Protection Agency, *Energy Star Building Upgrade Manual,* Office of Air and Radiation, 2008 Edition, p. 5-7.

[39] US Environmental Protection Agency, *Rapid Deployment Energy Efficiency Toolkit*, May 20, 2009, http://www.epa.gov/cleanenergy/energy-resources/ee_toolkit.html.

in the controls business, such as Johnson Controls and Honeywell, offer equipment and services. While neither commissioning nor retro-commissioning are fully implemented, the shortfall appears to be far worse with respect to the potential market opportunity for retro-commissioning services, which is estimated to be nearly 50 to 100 times greater than new commissioning.[40]

In our recommendation to consider commissioning practices in the technical potential study, we cited sources of information including the Energy Systems Laboratory of Texas A&M University, National Association of Energy Service Companies, and Energy Service Coalition. In particular, Lawrence Berkeley National Laboratories reports median whole-building energy savings of 15 percent for existing buildings.[41]

I applied this 15 percent measure effectiveness to the commercial sector energy demand, deducting the technical potential for energy savings from the three commissioning related measures described above, to obtain a technical potential estimate for building commissioning that would be in addition to the amount reported in the technical potential study. The total potential, based on the 15 percent measure effectiveness, is 9,758 GWh. Accounting for the three measures, the total statewide potential for building commissioning that does not appear to be addressed by Itron is 9,248 GWh.

(GWh)	Statewide	FPL	PEF	Gulf	TECO	OUC	JEA	FPUC
Commercial Energy Use	65,051	34,320	11,544	3,783	8,660	3,038	3,381	325
Commissioning potential	9,758	5,148	1,732	567	1,299	456	507	49
305 - Chiller Tuneup	115	64	20	7	12	6	4	1
307 - EMS Optimization	71	40	13	4	8	4	3	0
403 - Air Handler Optimization	324	173	57	20	41	16	16	2

[40] Southeast Region Building Commissioning Association and NEMI-National Energy Management Institute, 2002 report with FMI, www.bcxa.org/southeast/pdf/feb2002retrocommissioning.pdf.

[41] Evan Mills et al., "The Cost-Effectiveness of Commercial-Buildings Commissioning: A Meta-Analysis of Energy and Non-Energy Impacts in Existing Buildings and New Construction in the United States," Lawrence Berkeley National Laboratory, December 2005.

(GWh)	Statewide	FPL	PEF	Gulf	TECO	OUC	JEA	FPUC
Total Overlooked Potential	9,248	4,871	1,641	536	1,238	431	485	46

This omission is non-trivial in magnitude, and is likely to affect the economic and achievable potential study results at a significant level. According to the same LBNL study, median commissioning costs of 27 cents per square foot resulted in payback times of 0.7 years. NRDC/SACE Witness Mosenthal discusses why the short payback period should not disqualify this measure from consideration in the achievable potential. He discusses why this type of measure is ideal for a utility-led efficiency program to encourage and assist with, even if the utility offers minimal financial incentives to the building manager.

Q. What evidence supports your assertion that the study should have considered additional high efficiency air-source heat pump measures as meeting the criteria for inclusion in the technical potential study?

A. Air-source heat pumps with a 19 SEER (or 18+ SEER) rating appear to available in the market from Carrier (Infinity), Trane, Friedrich, Fujitsu, Samsung and Lennox according to market inquiries conducted by SACE staff. Although NRDC and SACE recommended that this measure be studied by Itron, no air-source heat pump above a 17 SEER rating was included in the residential measure list and no explanation for its omission was offered.

The additional measure savings that can be attributed to a 19 SEER unit as compared to the 17 SEER unit included in the technical potential study is a straightforward calculation based on the SEER standard definition and the potential savings data reported by Itron for the 17 SEER unit. Considering the wide availability of 19 SEER units from multiple manufacturers, other required measure data should be feasible to acquire for modeling purposes.

Q. What evidence supports your assertion that the study should have considered variable-speed pool pumps as meeting the criteria for inclusion as a commercial measure in the technical potential study?

A. Residential applications of this measure were considered by the study, but the measure was not included for commercial pools such as lodgings. (Therefore, Itron had access to measure cost and performance data for the relevant equipment.) According to the Florida Swimming Pool Association, there are over 37,000 public and commercial swimming pools and over 1 million residential pools.[42] The residential pool category includes pools at small apartment and condominium units which would be classified as commercial electricity customers for purposes of the technical potential study.

Using the Itron measure savings data for residential pools and some simple assumptions, it is straightforward to calculate an estimated technical potential for this measure.

Q. What evidence supports your assertion that the study should have considered LED luminaries as meeting the criteria for inclusion in the technical potential study?

A. Itron initially agreed that one type of LED luminary, replacements for downlighting applications, could be included in the study. According to Itron, from a technical potential perspective, these sources compete with Compact Fluorescent Lights (CFLs) for more or less the same amount of unit savings relative to the incandescent bulbs they replace. In addition to substantial direct savings in electricity, LEDs reduce electricity use by cooling systems through a lower heat load. Itron noted that for economic and achievable potential, the presumed difference in lifecycle costs between CFL and LED downlights may produce significantly different adoption forecasts. Itron advised us that the schedule constraints would be likely to preclude the inclusion of LED luminary lights in the technical potential study, but that Itron would attempt to gather further cost data development for the economic and achievable potential

[42] Jennifer Hatfield, Florida Swimming Pool Association, private communication with SACE staff, June 30, 2009.

forecasts.[43] Subsequent to this communication, we have not received any further information regarding this measure.

LED lighting is being promoted by the US Department of Energy in its five-year solid state lighting commercialization support program, which will be complete during the time period covered by the FEECA goals. Some of the major firms in the LED lighting market, as cited by the Lighting Research Center at Rensselaer Polytechnic Institute, include Cree, Sylvania, Philips, and Lightolier. According to the Pacific Northwest National Laboratories, LED output per watt in the past 5 years has improved by 35 percent per year while the cost per lumen has decreased 20 percent per year; costs per LED lumen ". . . are predicted to drop to $3/klm by 2015, which will make solid state lighting less expensive than compact fluorescents on a first-cost basis."

However, since LED luminary lamps are primarily an opportunity for lifetime cost savings, and not additional energy savings, I do not recommend any adjustment to the technical potential study results for this measure.

Q. Rather than assuming no efficiency potential from the measures you have described, what level of efficiency potential might the Commission reasonably assume could be attributed to each measure?

A. Based on the limited data we have been able to accumulate, the Commission might reasonably assume 10,596 GWh additional technical potential from the four measures that we believe should have contributed additional energy savings to the technical potential study.

Energy Efficiency Measure Overlooked	Estimated Additional Statewide Energy Savings Potential (GWh)
Building Commissioning - Commercial	9,248

[43] Michael Ting, e-mail dated September 15, 2008.

Energy Efficiency Measure Overlooked	Estimated Additional Statewide Energy Savings Potential (GWh)
High Efficiency Air-Source Heat Pump – 19 SEER – Residential	689
Variable-Speed Pool Pumps - Commercial	660
LED Luminaries – Residential/Commercial	Do not recommend additional technical potential.
Total	**10,596**

Q. By what amount might the Commission reasonably adjust the findings of the technical potential study to account for the excluded sectors and additional measures that you have shown meet the study criteria?

A. A reasonable estimate of the additional technical potential that the Commission might reasonably add to the findings of the technical potential study is 12,700 GWh, including 3,400 GWh savings from the excluded end-use sectors and 10,600 GWh from the overlooked measures, of potential energy savings.[44] This represents an increase of approximately 8 percent, or a total statewide technical potential of 42 percent rather than the 34 percent reported by Itron.

I have not performed a similar analysis for potential load reduction (MW) savings because the necessary load shapes, etc. were not available to SACE at the time that this research was conducted.

Q. What is the general conclusion of NRDC and SACE and its recommendation to the Commission?

A. Based upon my testimony and that of the other NRDC-SACE witnesses, it appears that the FEECA utilities have substantially underestimated the opportunity for cost-effective energy efficiency in the public interest. Our testimony describes several problems that lead to this underestimate, but the most substantial problems are an underestimate of the technical potential by at least 8 percent, the improper

[44] Figures rounded from calculated values.

use of the Participant Cost Test, the use of the RIM test in the face of clear direction from the Legislature to the contrary, and the imposition of an additional reverse cost-effectiveness test in the form of excluding the most cost-effective measures with less than a 2 year payback from proposed goals.

The Commission should reject the FEECA utilities' proposed goals and adopt the interim percentage savings recommended by NRDC-SACE witness Steinhurst in this testimony. The Commission should direct further study to address the several errors and missed opportunities in this study as recommended by NRDC-SACE witnesses. The Commission should clearly direct that the FEECA utilities adopt the cost-effectiveness tests and analytic perspective directed by statute, as explained in testimony by NRDC-SACE witnesses. The Commission should adopt goals for demand-side renewable energy taking into consideration the several policies and broad direction indicating that the Legislature has found that some significant level of renewable energy development should be pursued through the FEECA process, as I and other NRDC-SACE witnesses have testified. The Commission should not close this docket, or alternatively it should open a new docket, in the interest of resolving the issues that cannot be fully addressed at this time.

Q. Does this conclude your testimony?

A. Yes, it does.

Docket No. 08407-EG to 08413-EG
Estimate of Annual Incremental
Energy Savings for FPL from 2001-2008
Exhibit JDW-1, Page 1 of 1

Estimate of Annual Incremental Energy Savings for FPL from 2001 to 2008 (GWh)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	Cumulative
RES savings	124	107	119	85	91	92	100	56	104	877
C&I savings	65	104	88	112	70	93	100	153	57	841
Total savings	189	211	207	196	161	184	200	210	160	1,718
RES consumption	46,320	47,588	50,865	53,485	52,502	54,348	54,570	55,138	53,229	468,045
C&I consumption	40,769	42,051	44,086	45,429	46,028	47,381	48,523	49,695	49,148	413,110
Total consumption	87,960	90,212	95,523	99,496	99,095	102,296	103,659	105,415	102,919	886,575
Res savings (% of sales)	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%
C&I savings (% of sales)	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.1%	0.2%
Total savings (% of sales)	0.21%	0.23%	0.22%	0.20%	0.16%	0.18%	0.19%	0.20%	0.16%	0.19%

Sources:
Exhibit JRH-8 and JRH-9
FPL Ten Year Site Plan 2009

Docket No. 08407-EG to 08413-EG
Estimate of FPL Planned Annual
Incremental Energy Savings from 2010-2019
Exhibit JDW-2, Page 1 of 1

Estimate of FPL Planned Annual Incremental Energy Savings from 2010 to 2019 (GWh)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Cumulative	Relative to 2000 - 2008
Residential	33	33	33	33	33	33	33	33	33	33	328	
C&I	41	41	44	45	54	55	60	63	71	75	550	
Total	74	74	77	78	87	87	92	96	104	108	878	
FPL Sales Forecast	101,029	102,514	105,177	106,461	108,375	110,188	112,401	114,752	117,644	119,603	1,098,144	
Savings as % of Sales	0.07%	0.07%	0.07%	0.07%	0.08%	0.08%	0.08%	0.08%	0.09%	0.09%	0.08%	41.27%

Source: Exhibit JRH-16 FPL Goals vs AP (2), FPL Ten Year Site Plan

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Southern Alliance for Clean Energy

Energy Efficiency Program Impacts and Policies in the Southeast

John D. Wilson
Research Director
May 2009

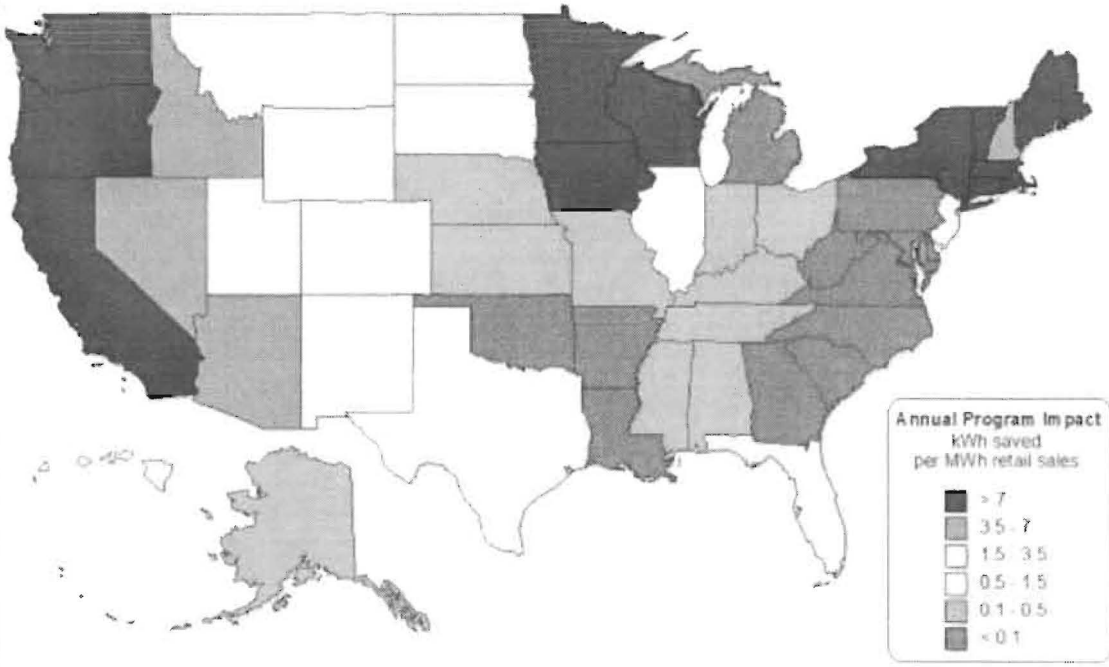
Southeast Lags the Nation: Energy Efficiency Program Impacts

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).

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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

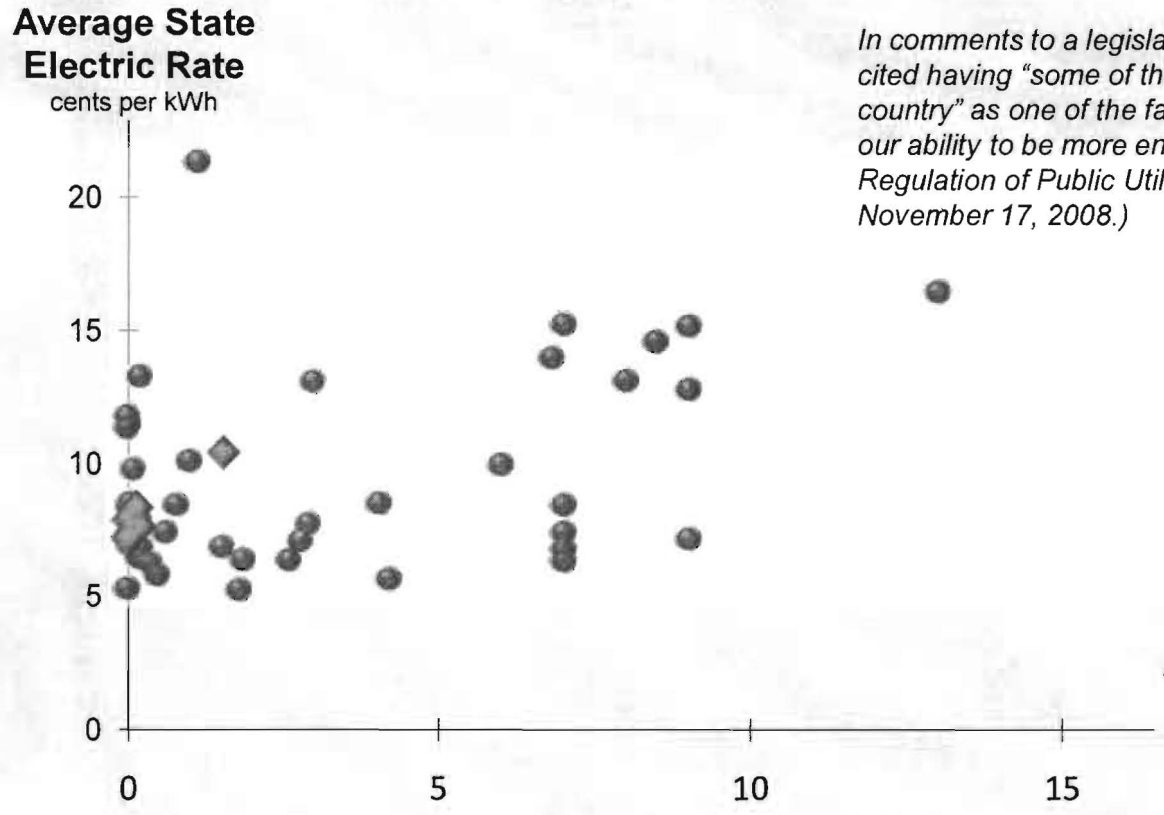
Why Does the Southeast Lag Other Regions in Energy Efficiency?

- **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



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.)

◆ Southeast States

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

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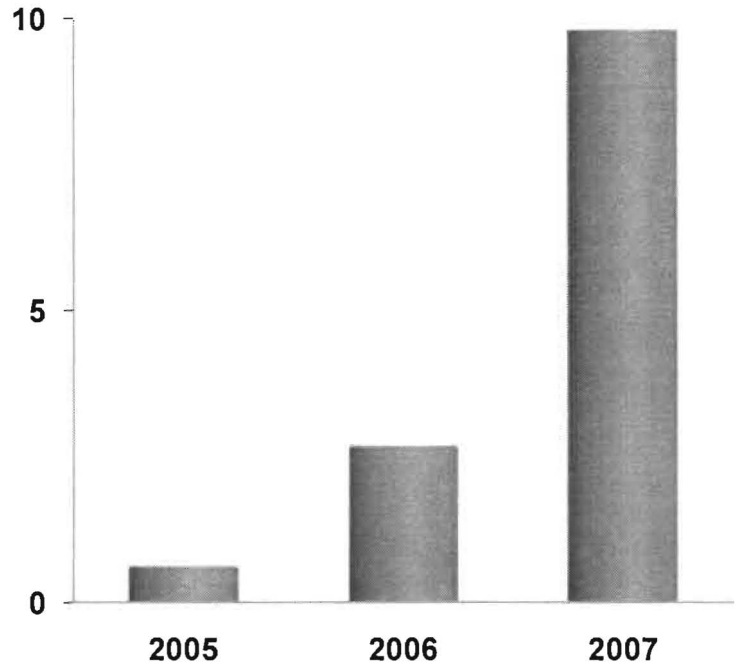
Southeast Success Story: Reedy Creek Improvement District

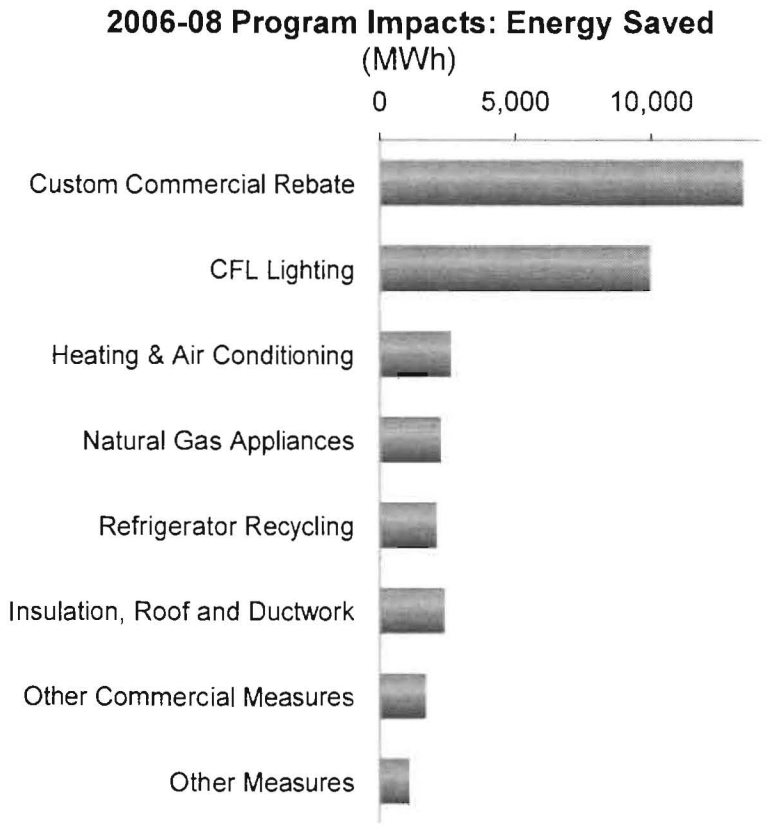
- **Reedy Creek Improvement District provides energy & energy services to Walt Disney World** (Orlando, FL)
- **From 1996 to 2006, Disney saved**
  - 100 GWh of electricity
  - 1 million therms of natural gas
- **Disney reports a 53% internal rate of return for efficiency programs**
- **Impacts increased 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

Reedy Creek Efficiency Programs Impact
kWh saved per MWh retail sales



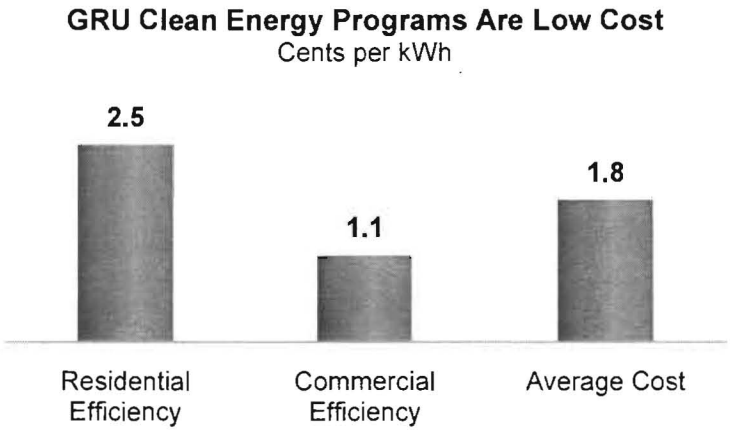
Source: EIA Form 861. Allen, P J, *Walt Disney World Resort's Energy Management Program*, 2006.

Southeast Success Story: Gainesville Regional Utilities



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.



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.

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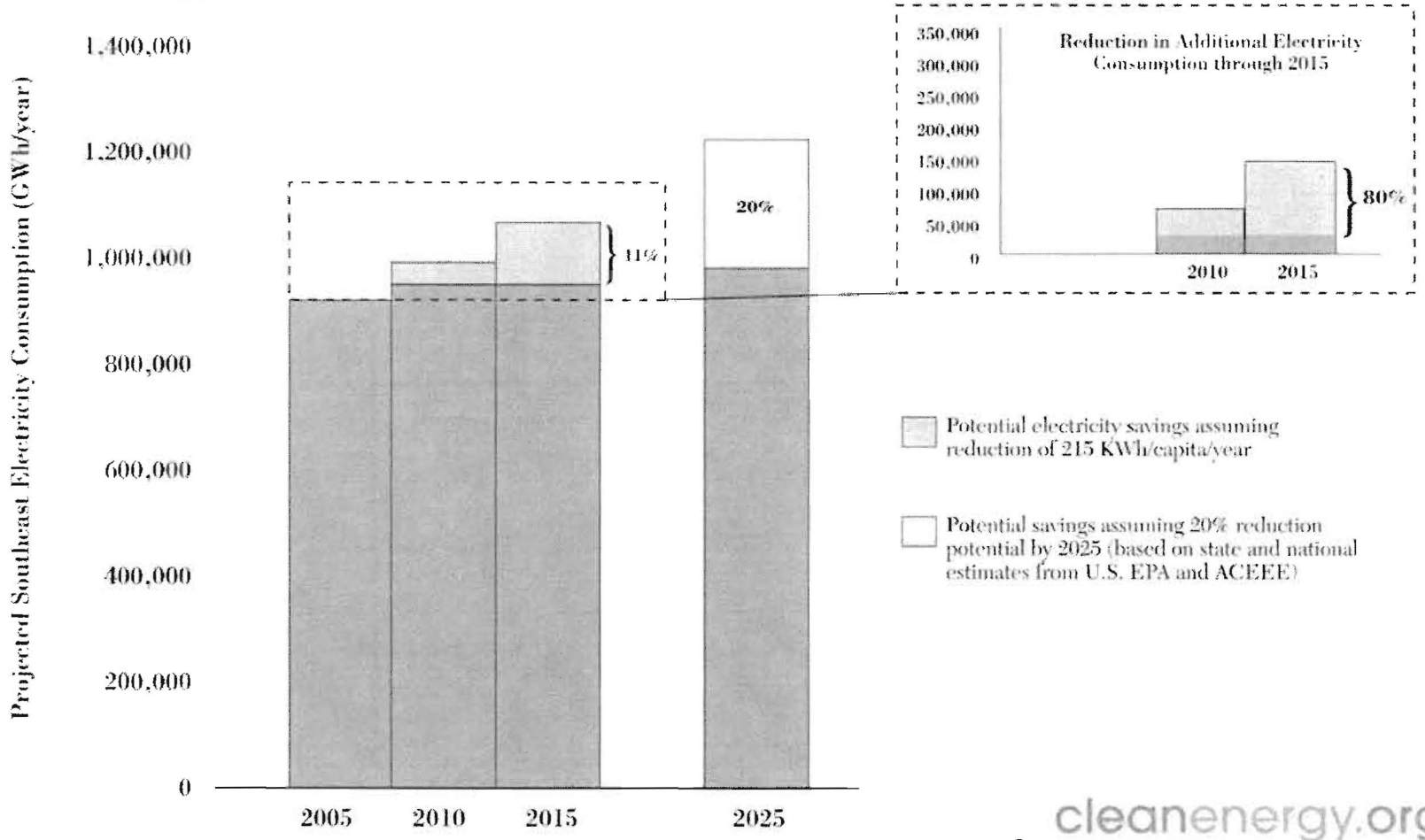
Efficiency Can Meet Most Future Power Demand



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

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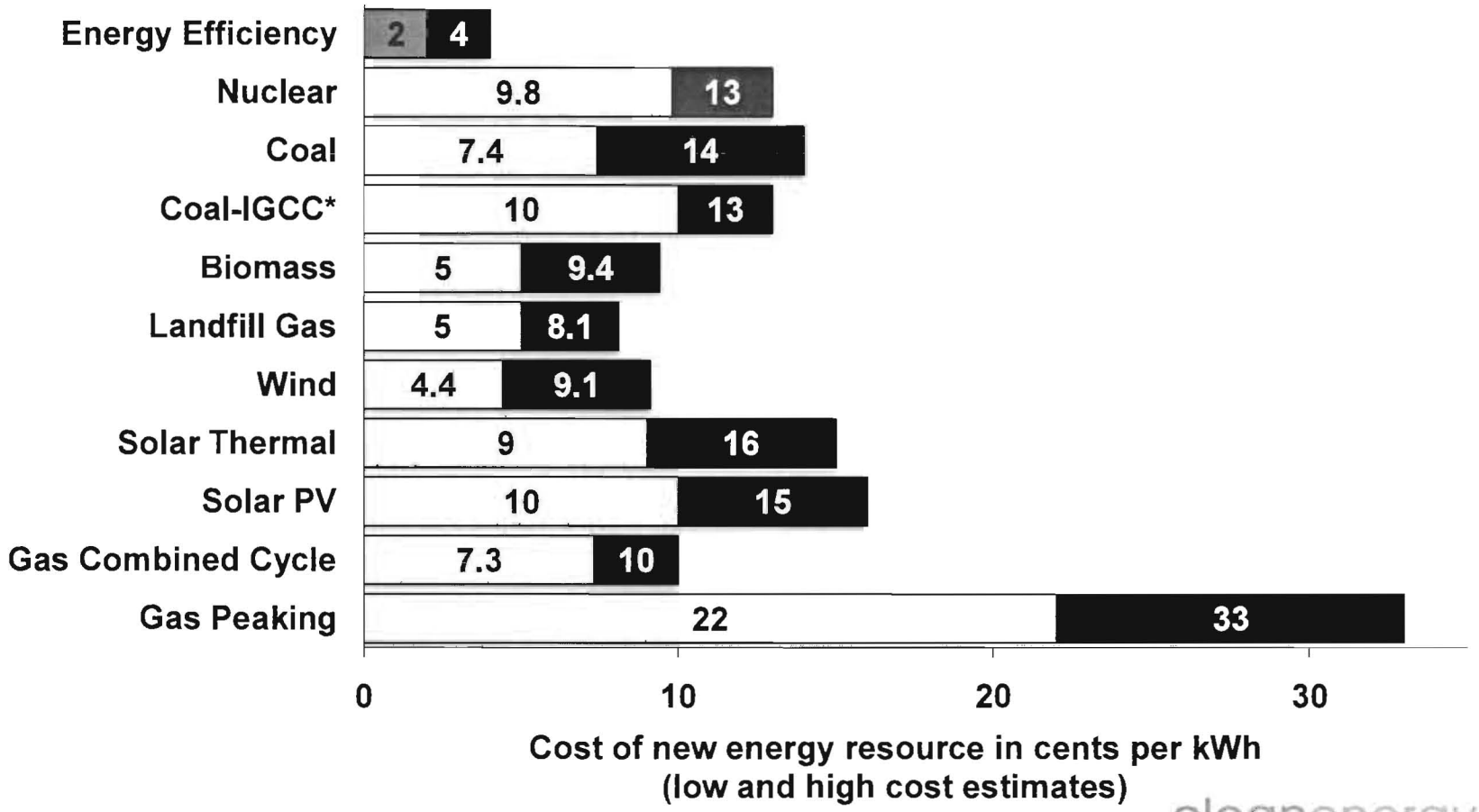
Energy Efficiency Costs Less Than Generating Power



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

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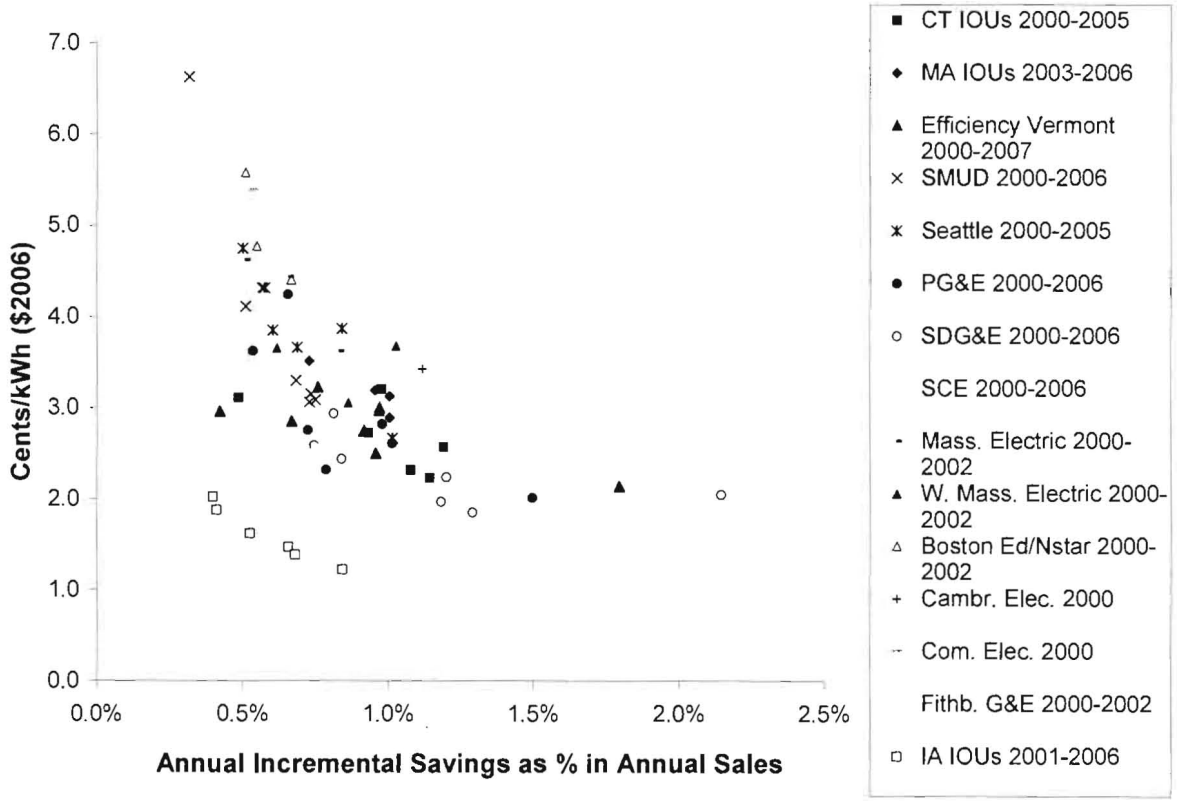
Economy of Scale: Costs Go Down As Market Penetration Increases

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.



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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

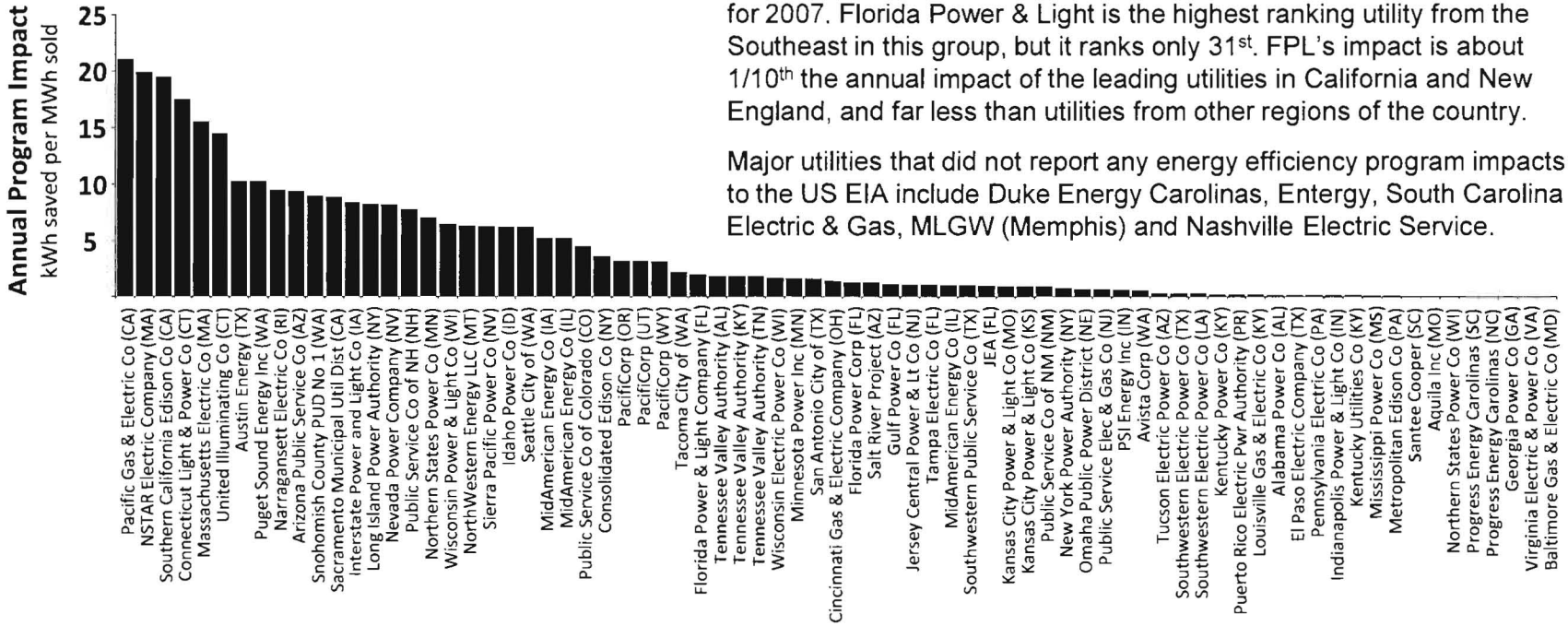
Source: EIA Form 861.

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 31st. FPL's impact is about 1/10th 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.

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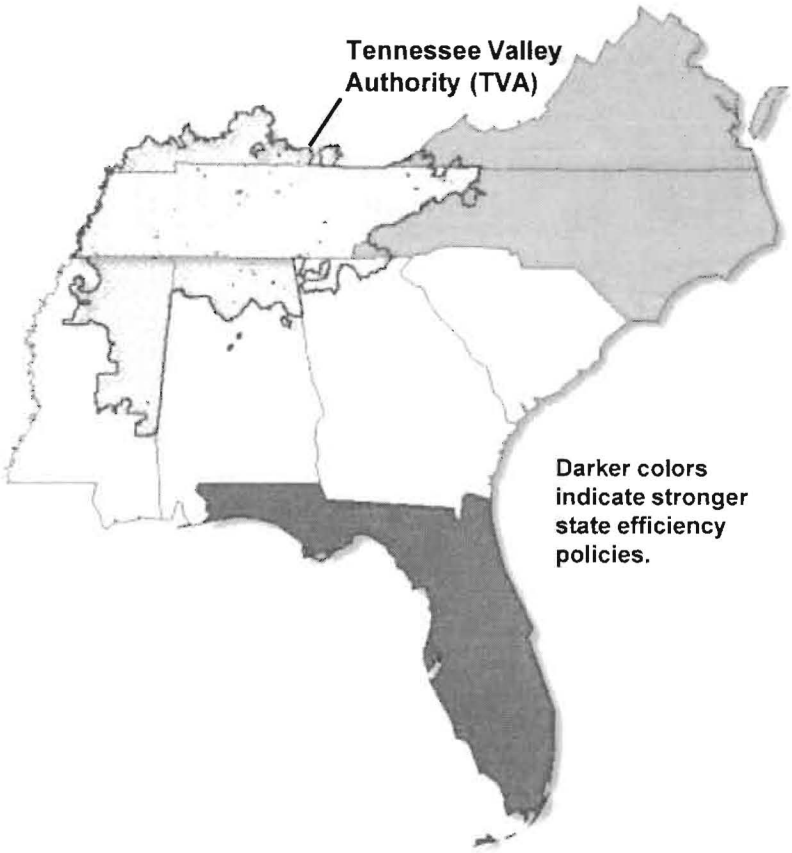
Southeast State Efficiency Policies



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	Most recent pending	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.
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)†	Household Energy Needs Met (equivalent number††)	Energy Savings ($ millions)	Net Jobs Created	CO_2 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
8 SE states	**117,820**	**37,893**	**126**	**70.0**	**13,664,626**	**37,875**	**56,350**	**90.5**
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). † State natural gas savings targets not considered. †† 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.

Docket No. 08407-EG to 08413-EG
Utility Specific Underlying Data for determining states that exceed FPL's annual program impact
Exhibit JDW-4, Page 1 of 5

Utility_Name	State	Energy Efficiency Program Impacts (GWh)	Total Retail Electricity Sales (GWh)	Ratio of Energy Efficiency (kWh) to Retail Sales (MWh)
Pacific Gas & Electric Co	CA	1,676	79,451	21.1
NSTAR Electric Company	MA	198	9,916	20.0
Southern California Edison Co	CA	1,552	79,505	19.5
Connecticut Light & Power Co	CT	281	16,054	17.5
Massachusetts Electric Co	MA	195	12,544	15.6
United Illuminating Co	CT	86	5,917	14.5
Austin Energy	TX	119	11,547	10.3
Puget Sound Energy Inc	WA	222	21,627	10.3
Narragansett Electric Co	RI	65	6,808	9.5
Arizona Public Service Co	AZ	274	29,171	9.4
Snohomish County PUD No 1	WA	61	6,775	9.0
Sacramento Municipal Util Dist	CA	96	10,818	8.9
Interstate Power and Light Co	IA	127	15,086	8.4
Long Island Power Authority	NY	156	18,751	8.3
Nevada Power Company	NV	180	21,873	8.2
Public Service Co of NH	NH	59	7,586	7.8
Northern States Power Co	MN	230	32,491	7.1
Wisconsin Power & Light Co	WI	71	10,844	6.5
NorthWestern Energy LLC	MT	37	5,876	6.3
Sierra Pacific Power Co	NV	52	8,245	6.3
Idaho Power Co	ID	87	13,848	6.3
Seattle City of	WA	60	9,600	6.2
MidAmerican Energy Co	IA	99	18,801	5.3
MidAmerican Energy Co	IL	52	9,821	5.3
Public Service Co of Colorado	CO	127	28,086	4.5
Consolidated Edison Co-NY Inc	NY	92	25,315	3.6
PacifiCorp	OR	45	14,077	3.2
PacifiCorp	UT	72	22,352	3.2
PacifiCorp	WY	28	8,522	3.2
Tacoma City of	WA	12	5,209	2.2

Docket No. 08407-EG to 08413-EG
Utility Specific Underlying Data for determining states that exceed FPL's annual program impact
Exhibit JDW-4, Page 2 of 5

Florida Power & Light Company	**FL**	**210**	**105,275**	**2.0**
Tennessee Valley Authority	AL	12	6,442	1.8
Tennessee Valley Authority	KY	28	15,437	1.8
Tennessee Valley Authority	TN	17	9,076	1.8
Wisconsin Electric Power Co	WI	44	25,955	1.7
Minnesota Power Inc	MN	15	9,001	1.6
San Antonio City of	TX	31	18,892	1.6
Cincinnati Gas & Electric Company	OH	30	21,150	1.4
Florida Power Corp	**FL**	**52**	**39,282**	**1.3**
Salt River Project	AZ	36	27,694	1.3
Gulf Power Co	**FL**	**13**	**11,521**	**1.1**
Jersey Central Power & Lt Co	NJ	20	18,323	1.1
Tampa Electric Co	**FL**	**21**	**19,533**	**1.1**
MidAmerican Energy Co	IL	10	9,821	1.1
Southwestern Public Service Co	TX	14	13,136	1.0
JEA	**FL**	**13**	**12,844**	**1.0**
Kansas City Power & Light Co	MO	9	8,980	1.0
Kansas City Power & Light Co	KS	6	6,607	1.0
Public Service Co of NM	NM	9	9,372	0.9
New York Power Authority	NY	12	15,618	0.8
Omaha Public Power District	NE	7	10,070	0.7
Public Service Elec & Gas Co	NJ	23	35,165	0.7
PSI Energy Inc	IN	19	29,734	0.6
Avista Corp	WA	3	5,479	0.6
Tucson Electric Power Co	AZ	3	9,634	0.3
Southwestern Electric Power Co	TX	2	7,358	0.3
Southwestern Electric Power Co	LA	2	5,677	0.3
Kentucky Power Co	KY	2	7,115	0.2
Puerto Rico Electric Pwr Authority	PR	4	20,230	0.2
Louisville Gas & Electric Co	KY	2	12,658	0.2
Alabama Power Co	AL	10	56,642	0.2
El Paso Electric Company	TX	1	5,435	0.2

Docket No. 08407-EG to 08413-EG
Utility Specific Underlying Data for determining states that exceed FPL's annual program impact
Exhibit JDW-4, Page 3 of 5

Pennsylvania Electric Co	PA	2	13,820	0.1
Indianapolis Power & Light Co	IN	2	15,328	0.1
Kentucky Utilities Co	KY	2	18,665	0.1
Mississippi Power Co	MS	1	9,368	0.1
Metropolitan Edison Co	PA	2	14,337	0.1
South Carolina Pub Serv Auth	SC	1	11,592	0.1
Aquila Inc	MO	1	8,129	0.1
Northern States Power Co	WI	0	6,229	0.1
Carolina Power & Light Co	SC	0	6,782	0.0
Carolina Power & Light Co	NC	1	37,733	0.0
Georgia Power Co	GA	2	86,084	0.0
Virginia Electric & Power Co	VA	0	75,631	0.0
Baltimore Gas & Electric Co	MD	0	17,675	0.0
Duke Energy Corporation	NC	-	57,009	0.0
Reliant Energy Retail Services	TX	-	56,661	0.0
Detroit Edison Co	MI	-	48,816	0.0
Commonwealth Edison Co	IL	-	48,557	0.0
TXU Energy Retail Co LP	TX	-	48,391	0.0
PECO Energy Co	PA	-	39,273	0.0
Union Electric Co	MO	-	38,827	0.0
PPL Electric Utilities Corp	PA	-	38,235	0.0
Consumers Energy Company	MI	-	36,974	0.0
Entergy Louisiana Inc	LA	-	28,149	0.0
Ohio Power Co	OH	-	27,728	0.0
Los Angeles City of	CA	-	24,317	0.0
Oklahoma Gas & Electric Co	OK	-	22,156	0.0
South Carolina Electric & Gas Co	SC	-	22,117	0.0
Duke Energy Corporation	SC	-	21,991	0.0
Columbus Southern Power Co	OH	-	21,845	0.0
Entergy Arkansas Inc	AR	-	21,371	0.0
Ohio Edison Co	OH	-	21,355	0.0
West Penn Power Co	PA	-	20,548	0.0

Entergy Gulf States Inc	LA	-	19,133	0.0
Public Service Co of Oklahoma	OK	-	17,911	0.0
Appalachian Power Co	WV	-	17,499	0.0
Portland General Electric Company	OR	-	17,462	0.0
Cleveland Electric Illum Co	OH	-	17,404	0.0
Constellation NewEnergy, Inc	TX	-	17,259	0.0
San Diego Gas & Electric Co	CA	-	17,056	0.0
Northern Indiana Pub Serv Co	IN	-	16,904	0.0
Niagara Mohawk Power Corp	NY	-	16,466	0.0
Indiana Michigan Power Co	IN	-	16,436	0.0
Appalachian Power Co	VA	-	16,377	0.0
Entergy Gulf States Inc	TX	-	15,522	0.0
Memphis City of	TN	-	15,256	0.0
Constellation NewEnergy, Inc	IL	-	14,019	0.0
Entergy Mississippi Inc	MS	-	13,539	0.0
Nashville Electric Service	TN	-	12,831	0.0
Dayton Power & Light Co	OH	-	11,778	0.0
Monongahela Power Co	WV	-	10,856	0.0
Wisconsin Public Service Corp	WI	-	10,812	0.0
Kansas Gas & Electric Co	KS	-	10,137	0.0
Westar Energy Inc	KS	-	9,987	0.0
Illinois Power Co	IL	-	9,772	0.0
New York State Elec & Gas Corp	NY	-	9,743	0.0
Direct Energy, LP	TX	-	9,480	0.0
Kenergy Corp	KY	-	9,373	0.0
Toledo Edison Co	OH	-	9,229	0.0
Cleco Power LLC	LA	-	9,217	0.0
Constellation NewEnergy, Inc	MA	-	8,594	0.0
Tractebel Energy Services Inc	TX	-	8,429	0.0
Exelon Energy Company	IL	-	8,294	0.0
Atlantic City Electric Co	NJ	-	8,183	0.0
Potomac Electric Power Co	MD	-	7,941	0.0

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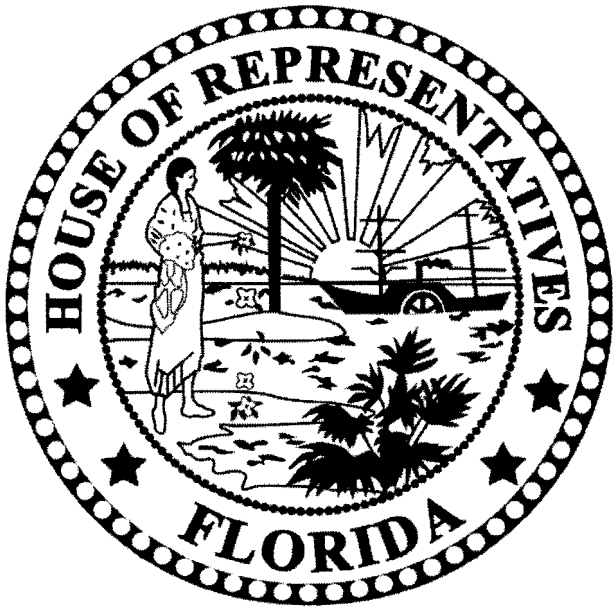
Utility Specific Underlying Data for determining states that exceed FPL's annual program impact
Exhibit JDW-4, Page 5 of 5

PEPCO Energy Services	MD	-	7,918	0.0
Strategic Energy LLC	TX	-	7,778	0.0
Hawaiian Electric Co Inc	HI	-	7,675	0.0
Central Illinois Pub Serv Co	IL	-	7,671	0.0
First Energy Solutions Corp	OH	-	7,527	0.0
Amerada Hess Corp	NY	-	6,948	0.0
Consolidated Edison Sol Inc	NY	-	6,713	0.0
Texas General Land Office	TX	-	6,553	0.0
Ameren Energy Marketing Co	IL	-	6,496	0.0
Constellation NewEnergy, Inc	NY	-	6,468	0.0
Duquesne Light Co	PA	-	6,428	0.0
CPL Retail Energy LP	TX	-	6,174	0.0
Knoxville Utilities Board	TN	-	5,976	0.0
Sempra Energy Solutions	IL	-	5,962	0.0
Chattanooga City of	TN	-	5,800	0.0
Southern Indiana Gas & Elec Co	IN	-	5,551	0.0
Orlando Utilities Comm	**FL**	**-**	**5,523**	**0.0**
Middle Tennessee E M C	TN	-	5,350	0.0
Huntsville City of	AL	-	5,312	0.0
Constellation NewEnergy, Inc	MD	-	5,066	0.0
PUD No 1 of Cowlitz County	WA	-	4,896	0.0
Peoples Energy Services	IL	-	4,895	0.0
AGC Division of APG Inc	IN	-	4,894	0.0
Jackson Electric Member Corp	GA	-	4,890	0.0

FLORIDA HOUSE OF REPRESENTATIVES

2008 SESSION SUMMARY



MARCO RUBIO, SPEAKER

MAY 2008

2008 LEGISLATIVE SESSION
END OF SESSION REPORT

This report was compiled by the staff of the Florida House of Representatives upon completion of the 2008 Legislative Session. This information is intended to provide Florida legislators and their constituents with a summary of the bills that passed both legislative chambers. This document is not an in-depth description of the bills noted.

For your convenience, an "Index of Passed Legislation" is included in the back of this report. The index is presented in bill number order. This index also serves as a cross-reference index, which identifies bills passed as components of other bills. As you review this index it will become evident that a House bill number may be listed under a Senate bill number or vice versa, indicating that each bill contains all or a portion of another bill.

The complete text of the bills included in this report and a section-by-section analysis of each bill can be found by accessing the following website:

House Bills: www.myfloridahouse.gov

The website includes both the current (or latest) version of a bill or analysis and all earlier versions.

- **The version of a bill that passed both Chambers and is presented to the Governor is referred to as "Enrolled."**
- **This is the version of the bill that has, or will, become law unless vetoed.**
- **Earlier versions of the bill do not reflect the exact language as passed by both Chambers.**

It should be noted that at the time of publication of this report, May 8, 2008, some Acts have not been presented to the Governor and the time allotted for the Governor to approve or veto an act has not expired. Therefore, some acts identified as "passed" by both Chambers may not have become law. To verify the status of acts passed by the Legislature, visit the Legislature's website or call the Division of Legislative Information at 1-800-342-1827.

HOUSE OF REPRESENTATIVES

Economic Expansion and Infrastructure Council

Representative Dean Cannon, Chair

Representative Dorothy Hukill, Vice Chair

2008 SUMMARY OF PASSED LEGISLATION

Committee on Economic Development

Representative Don Davis, Chair
Representative Dorothy Hukill, Acting Chair
Representative Will Weatherford, Vice Chair

Committee on Ethics & Elections

Representative Pat Patterson, Chair
Representative Peter Nehr, Vice Chair

Committee on Infrastructure

Representative Richard Glorioso, Chair
Representative Gary Aubuchon, Vice Chair

Committee on Tourism & Trade

Representative William Proctor, Chair
Representative Doug Holder, Vice Chair

to operate the business of the electric utility in the affected municipal utility. If a majority of the retail electric customers vote in favor of creating the authority, the municipal electric utility must provide each Legislative member whose district includes any part of the utility's service territory a proposed charter that transfers the utility's operations to a duly-created authority.

- **Energy Efficiency and Conservation (ss. 366.81 and 366.82, F.S.)** - Revises the Florida Energy Efficiency and Conservation Act (FEECA), to explicitly allow efficiency and conservation investments across generation, transmission, and distribution as well as efficiencies within the user base; to encourage the development of demand-side renewable energy; and to provide criteria the Public Service Commission (PSC) is to consider when evaluating proposed conservation and efficiency measures. The criteria the PSC is required to consider include the following:
    - The costs and benefits to customers participating in the measure (Participants test).
    - The costs and benefits to the general body of ratepayers as a whole, including both utility incentives and participant contributions (similar to a Total Resource Cost test or TRC test but including the costs of incentives).
    - The need for incentives to promote both customer-owned and utility-owned energy efficiency and renewable energy systems.
    - The costs imposed by state and federal regulations on the emissions of greenhouse gases.
    - The bill further provides budget authority for the PSC to expend up to $250,000 from the Florida Public Service Regulatory Trust Fund to obtain technical consulting assistance. The newly-created Florida Energy and Climate Commission must be included in the proceedings to adopt goals and must file with the PSC comments on the proposed goals.
    - The PSC may require modifications or additions to a utility's plans and programs when there is a public interest consistent with conservation, energy efficiency, and demand-side renewable energy system measures. The bill grants the PSC flexibility to modify or deny plans and programs that would have an undue impact on the costs passed on to ratepayers.
    - The bill also grants the PSC authority, for those utilities over which it has rate-setting authority, to provide financial rewards for utilities which exceed their goals and financial penalties for utilities which fail to meet their goals, including but not limited to the sharing of generation, transmission, and distribution cost savings associated with conservation, energy efficiency, and demand-side renewable energy system additions. In addition, the bill authorizes the PSC to allow an investor owned electric utility an additional return on equity of up to 50 basis points for exceeding 20 percent of their annual load growth through energy efficiency and conservation measures. The additional return on equity is to be established by the PSC through a limited proceeding.
- **Environmental Cost Recovery (s. 366.8255, F.S.)** - Revises the definition of "environmental compliance costs" to include the costs or expenses prudently incurred for the quantification, reporting, and third party verification as required for participation in greenhouse gas emission registries for greenhouse gases as defined in s. 403.44, F.S.; and costs or expenses prudently incurred for scientific research and geological assessments of carbon capture and storage conducted in Florida for the purpose of reducing an electric utility's greenhouse gas emissions when such costs or expenses are incurred in joint research projects with State of Florida government agencies and State of Florida universities.
- **Net Metering (s. 366.91, F.S.)** - Expands the term "biomass" to include waste, byproducts or products from agricultural and orchard crops, waste or co-products from livestock and poultry

operations, and waste or byproducts from food processing.

- Requires investor-owned utilities to develop a standardized interconnection agreement and net metering program for customer-owned renewable generation on or before January 1, 2009, and directs municipal electric utilities and rural electric cooperatives that sell electricity at retail to develop a standardized interconnection agreement and net metering program for customer-owned renewable generation, as well. Directs each governing authority to establish requirements relating to such.
- Requires that if a utility is purchasing power generated from biogas produced by the anaerobic digestion of agricultural waste, including food waste and other agricultural byproducts, that net metering be available at a single metering point or be available as a part of conjunctive billing of multiple points for a customer at a single location on the condition that the provision of such service is not projected to result in higher costs of electric services to the general body of ratepayers or adversely affect the adequacy or reliability of electric service to all customers.

- **Renewable Portfolio Standard (s. 366.92, F.S.) -** Directs the Public service Commission (PSC) to adopt a rule for a renewable portfolio standard (RPS) requiring each provider, which includes an investor-owned utility, but not a municipal electric utility or a rural electric cooperative, to supply renewable energy to its customers, either directly, by procuring, or indirectly providing through the purchase of Renewable Energy Credits (RECs). Requires the rule to provide for the following:
  - Methods of managing the cost of compliance with the RPS whether through direct supply, procurement of renewable power, or through the purchase of RECs.
  - Appropriate compliance measures and the conditions under which noncompliance can be excused due to a determination by the commission that the supply of renewable energy or RECs was not adequate to satisfy the demand for such energy, or that the cost of securing renewable energy or RECs was cost prohibitive.
  - An appropriate period of time for which renewable energy credits may be used for purposes of compliance with the RPS.
  - The monitoring of compliance with and enforcement of the requirements of this section.
  - A means of ensuring that energy credited toward compliance with the provisions of the RPS not be credited toward any other purpose.
  - Development of procedures to track and account for RECs, including ownership of RECs that are derived from a customer-owned renewable energy facility as a result of any action by a customer of an electric power supplier that is independent of a program sponsored by that supplier.
  - Conditions and options for the repeal or alteration of the rule in the event that new provisions of Federal law supplant or conflict with the rule.
  - Provides that the rule may give added weight to energy provided by wind and solar photovoltaic over other forms of renewable energy. Requires the PSC to present the draft rule for legislative consideration by February 1, 2009, and prohibits the rule from being implemented until ratified by the Legislature.
  - Provides rulemaking authority to the PSC for providing annual cost recovery and incentive-based adjustments to authorized rates of return on common equity to providers to incentivize renewable energy. Authorizes the PSC to approve projects and power sales

agreements with renewable power producers, and the sale of renewable energy credits which are needed to comply with the RPS. Provides that if there is a conflict between this provision and s. 366.91(3) and (4), F.S., the RPS section will supersede s. 366.91(3) and (4), F.S., in terms of paying more than avoided costs. Provides that nothing in the section shall impede or impair terms and conditions in existing contracts.

- Directs the PSC to provide for full cost recovery under the environmental cost-recovery clause of all reasonable and prudent costs incurred by a provider for renewable energy projects that are zero greenhouse gas emitting at the point of generation, up to a total of 110 MW statewide. Provides conditions and a July 1, 2009, deadline for filing for such cost recovery. Directs municipal electric utilities and rural electric cooperatives to develop standards for the promotion, encouragement, and expansion of the use of renewable energy resources and energy conservation and efficiency measures.

- **Alternative Cost Recovery Mechanisms for Nuclear Power Plants (s. 366.93, F.S.)** - Specifies that the advanced cost recovery requirement consists of the costs incurred in the siting, design, licensing, construction, or operation of new, expanded, or relocated electric transmission lines and facilities that are necessary to serve a nuclear power plant. Furthermore, the bill allows utilities to recover preconstruction and construction costs associated with such electrical transmission lines and facilities incurred after the issuance of a final order granting a determination of need for a nuclear power plant, rather than at the time that the nuclear power plant commences operation. In the event that the utility elects not to complete or is precluded from completing construction of any new, expanded, or relocated electrical transmission lines or facilities of a nuclear power plant, the utility may recover all prudent costs incurred after the issuance of the final order granting the determination of need for the nuclear power plant. This is intended to lower capital costs by reducing financial risk and allowing utilities to begin recovering costs prior to operation, and therefore shortening the required financing period.
- **Florida Energy and Climate Commission (ss. 377.601 - 377.806 and 377.901, F.S.)** - Provides for a transfer of the Florida Energy Commission from the Office of Legislative Services (and authorizes 4 FTEs) and the State Energy Program from the Department of Environmental Protection (DEP) to the Florida Energy and Climate Commission (commission) in the Executive Office of the Governor and repeals the Florida Energy Commission. The bill provides for the following:
    - The FECC is to be comprised of nine (9) members, seven (7) of which are appointed by the Governor, for 3-year terms. The other two positions are to be appointed, one each, by the Commissioner of Agriculture (Commissioner), and the Chief Financial Officer (CFO). Provides for staggered terms.
    - The Governor is to select from three people nominated by the Florida Public Service Commission Nominating Council (Nominating Council) for each seat on the commission. In addition, the Commissioner and the CFO are each to select from three people nominated by the Nominating Council.
    - The Nominating Council is to submit the nominations by September 1 of those years in which the terms are to begin the following October, or within 60 days after a vacancy occurs for any reason other than the expiration of the term.
    - The Governor, the Commissioner, and the CFO may proffer names to be considered by the Nominating Council.
    - The Governor is to select a chair from one of the nine people appointed to the FECC.
    - If the Governor, Commissioner, or the CFO does not make an appointment within 30 days of receiving the Nominating Council's recommendations or if the Senate fails to

confirm the Governor's appointment to the commission, the Nominating Council is to initiate the nominating process within 30 days.
    - The Governor or his or her successor can recall an appointee.
    - A commission member must be an expert in specified fields.
    - The chair may designate specified ex-officio, non-voting members to provide information and advice to the commission.
    - The commission must meet at least six times a year and may employ staff and counsel, as needed. The commission is directed to perform specific duties that are enumerated in the section.
    - The commission must submit an annual report to the Governor and Legislature reflecting its activities and making recommendations of policies for improvement of the state's response to energy supply and demand and its effect on the health, safety, and welfare of citizens.
  - Clarifies that the definition of "energy resources" includes "energy converted from solar radiation, wind, hydraulic potential, tidal movements, geothermal sources, biomass, and other energy sources the commission determines to be important to the production or supply of energy."
  - Expands the requirement of the Department of Management Services to furnish data on agencies' energy consumption to include their emissions of greenhouse gases.
  - Renames the "Florida Renewable Energy Technologies and Energy Efficiency Act," as the "Florida Energy and Climate Protection Act." Renames the "Renewable Energy Technologies Grants Program," as the "Renewable Energy and Energy-Efficient Technologies Grants Program," and adds "innovative technologies that significantly increase energy efficiency for vehicles and commercial buildings" to the list of projects for which the program will provide renewable energy matching grants.
- **Florida Green Government Grants Act (s. 377.808, F.S.)** - Creates the "Florida Green Government Grants Act," to provide that the newly-created Florida Energy and Climate Commission (FECC) award grants to assist local governments, including municipalities, counties, and school districts, to develop programs that achieve green standards. Authorizes the FECC to provide necessary administrative expenses to local governments from the grants. Requires "green standards" to be determined by the FECC to provide cost-efficient solutions that reduce greenhouse gas emissions, improve the quality of life, and strengthen Florida's economy.
- **Florida Climate Protection Act (Cap and Trade Regulatory Program) (s. 403.44, F.S)** - Authorizes Department of Environmental Protection (DEP) to adopt rules for a cap-and-trade regulatory program to reduce greenhouse gas emissions by electric utilities. Provides for methodologies, reporting periods, and reporting systems that must be used when electric utilities report to the Climate Registry. Requires the DEP to consult with the Florida Energy and Climate Commission and the Public Service Commission (PSC) when developing the rules. Requires the Florida Energy and Climate Commission (FECC) to review the draft rule and report to the Legislature on the design, cost, and economic impact factors. Provides that the rule may not become effective until ratified by the Legislature and not until after January 1, 2010.
- **Electrical Power Plant and Transmission Line Siting Act (ss. 403.502 - 403.5365, F.S.)** - Revises various provisions of the Power Plant Siting and Transmission Line Siting Acts to create greater efficiency in the siting process and facilitate the need for expanded power generation. Creates an alternate corridor proposal process within the Power Plant Siting Act that mirrors the same process currently in the Transmission Line Siting Act, and allows electric utilities constructing a

HOUSE OF REPRESENTATIVES STAFF ANALYSIS

BILL #: HB 7135 PCB ENRC 08-01 Energy
SPONSOR(S): Environment & Natural Resources Council, Mayfield and Kreegel
TIED BILLS: None. **IDEN./SIM. BILLS:** CS/CS/CS/SB 1544

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR
Orig. Comm.: Environment & Natural Resources Council	17 Y, 0 N	Blalock, Larson, Whittier, Perkins	Dixon / Hamby
Committee on Energy	13 Y, 0 N	Blalock, Larson, Whittier	Collins
2)			
3)			
4)			
5)			

SUMMARY ANALYSIS

During the 2007 Legislative Session, the Legislature enacted comprehensive legislation to promote energy security and affordability by encouraging energy efficiency and diversity. Although this legislation was vetoed, approximately $62 million in funds were made available to address energy goals. During the Summer of 2007, Governor Crist issued three executive orders addressing issues related to global climate change. The executive orders established reduction targets for greenhouse gas (GHG) emissions, directed the Department of Environmental Protection (DEP) to develop a regulatory rule to cap electric utility GHG emissions, and created the Governor's Action Team on Energy and Climate Change. The Action Team's initial report includes numerous recommendations, including the development of a "cap and trade" program to reduce GHG emission. The Florida Energy Commission, created by the 2006 Legislature, has also issued a series of recommendations addressing energy reliability, efficiency, affordability, and diversity and climate change.

In response to these developments, the Environment & Natural Resources Council and the Committee on Energy conducted a symposium on the "Science and Economics of Climate Change" and a series of workshops to discuss the interrelated issues of energy reliability, efficiency, affordability, and diversity and global climate change. These discussions focused on international, national and state options to mitigate climate change and their potential costs and benefits. This bill builds on last year's legislation and includes policies developed through these discussions, including:

- Creating a 9-member Florida Energy and Climate Commission.
- Creating the Florida Energy Systems Consortium with participation from five state universities.
- Authorizing the DEP to adopt rules for a Cap-and-Trade Regulatory Program to address GHG emissions from electric utilities, subject to legislative ratification and not prior to the 2010 Legislative Session.
- Revising the State Comprehensive Plan to include goals and policies addressing low carbon electricity generation.
- Authorizing the Public Service Commission to adopt a Renewable Portfolio Standard for public utilities.
- Requiring the PSC to adopt goals to increase and promote cost-effective demand-side and supply-side efficiency and conservation programs and renewable energy systems.
- Revising laws governing state lands and power plant and power line siting to facilitate expanded power generation.
- Providing for standardized interconnection agreements and net metering for all electric utilities.
- Reauthorizing an ad valorem tax exemption for renewable energy source devices.
- Extending the Public Service Commission's jurisdiction to municipal utilities meeting certain criteria.
- Creating a Renewable Fuel Standard requiring that beginning on December 31, 2010, all gasoline sold in Florida contain, at a minimum, 10 percent ethanol, by volume.
- Adopting energy standards for the construction of new state, county, municipal, school district, state university, community college, state court, and water management district buildings.
- Requiring all new construction and renovation of state agency buildings to meet increased energy standards.
- Revising current law governing guaranteed energy, water, and wastewater performance savings contracting.
- Adopting Climate Friendly Public Business requirements for the use of "green" products, lodging, vehicles, and fuel.

See Fiscal Analysis and Economic Impact Statement section of analysis for government and private sector impacts.

electric customers as of September 30, 2007, and does not have a service territory that extends beyond its home county as of September 30, 2007, to conduct a referendum election of all its retail electric customers concurrent with the next regularly scheduled general election to vote "yes" or "no" on the following question:

"Should a separate electric utility authority be created to operate the business of the electric utility in the affected municipal electric utility?"

The bill also provides that the notice provisions in the Election Code must be followed, and cost of the referendum election must be paid by the affected municipal electric utility. If a majority of the retail electric customers vote "yes" on the question posed in the referendum, then the municipal electric utility must transfer operations of its electric utility business to a duly-created authority on or before July 1, 2009. The electric utility authority created must consist of a governing body with a membership that is proportionally representative of the number of county and city ratepayers, and has jurisdiction over electric, water, and sewer utilities.

FLORIDA ENERGY EFFICIENCY AND CONSERVATION ACT (FEECA) (ss. 366.81-366.82, F.S.)

Present Situation

Under the Florida Energy Efficiency and Conservation Act (FEECA),[54] the Florida Public Service Commission (PSC) is directed by the Legislature to develop and adopt overall goals. The PSC is authorized to require each utility to develop plans and implement programs for increasing energy efficiency and conservation within its service area, subject to the approval of the PSC. The Legislature intends that the use of solar energy, renewable energy sources, highly efficient systems, cogeneration, and load-control systems be encouraged. Accordingly, in exercising its jurisdiction, the PSC may not approve any rate or rate structure that discriminates against any class of customers on account of the use of such facilities, systems, or devices. However, this expression of legislative intent is not to be construed to preclude experimental rates, rate structures, or programs.

The PSC is required to adopt appropriate goals for increasing the efficiency of energy consumption and increasing the development of cogeneration, specifically including goals designed to increase the conservation of expensive resources, such as petroleum fuels; to reduce and control the growth rates of electric consumption; and to reduce the growth rates of weather-sensitive peak demand. Currently, the Executive Office of the Governor must be a party in the proceedings to adopt goals. The PSC may change the goals for reasonable cause. The time period to review the goals, however, may not exceed five years. After the programs and plans to meet those goals are completed, the PSC must determine what further goals, programs, or plans are warranted and, if any, must adopt them.

Following adoption of the goals, the PSC must require each utility to develop plans and programs to meet the overall goals within its service area. If the PSC disapproves a plan, it must specify the reasons for disapproval, and the utility whose plan is disapproved must resubmit its modified plan within 30 days. Prior approval by the PSC is required to modify or discontinue a plan, or part thereof, which has been approved. If any utility has not implemented its programs and is not substantially in compliance with the provisions of its approved plan at any time, the PSC must adopt programs required for that utility to achieve the overall goals.

Section 366.82, F.S., requires utility conservation programs to be cost-effective. To comply with the statute, the PSC adopted Rule 25-17.008, F.A.C., which codifies the cost-effectiveness methodologies and cost/benefit information submitted by the utilities to the PSC. In order to obtain cost recovery for implementing conservation and energy efficiency programs, utilities must provide a cost-effectiveness analysis of each program using three tests:

- Participant test: Reviews costs and benefits from a demand-side management (DSM) program participant's point of view and ignores the impact on the utility and other ratepayers not participating in the program. Customers pay equipment and maintenance costs under the

[54] Sections 366.80-366.85, F.S. (FEECA)

participant test. Benefits include incentives that are paid by the utility to the customers and a reduction in customer bills.

- Rate Impact Measure (RIM test): Includes the costs associated with incentive payments to participants and decreased revenues to the utility which typically must be recovered from the general body of ratepayers at the time of a rate case. In particular, the RIM test ensures that all ratepayers benefit from a proposed DSM program, not just the participants. Because all customers ultimately pay the costs of DSM programs, the RIM test ensures that rates to all customers are lower than they otherwise would have been without the DSM program.
- Total Resource Cost (TRC test): Measures the overall economic efficiency of a DSM program from a societal perspective. This test measures the net costs of a DSM program based on its total cost, including both the participant's and utility's costs. Unlike the RIM test, however, incentives and decreased revenues are not included as costs in the TRC; instead, these factors are treated as transfer payments among ratepayers.[55]

The PSC must require periodic reports from each utility and provide the Legislature and the Governor with an annual report of the goals it has adopted and its progress toward meeting those goals. The PSC must consider the performance of each utility to FEECA when establishing rates for those utilities over which the PSC has rate-setting authority.

The PSC must also require each utility to offer, or to contract to offer, energy audits to its residential customers, as provided by statute. The PSC may extend this requirement to some or all commercial customers.

The PSC is the responsible legislative agency for performing, coordinating, implementing, or administering functions related to consumption, utilization, or conservation of electrical energy which are required or authorized under s. 377.703, F.S. The Governor is required to file with the PSC comments on the proposed goals including, but not limited to: an evaluation of load forecasts, including an assessment of alternative supply and demand-side resource options; and an analysis of various policy options that can be implemented to achieve a least-cost strategy.

The PSC is required to establish all minimum requirements for energy auditors used by each utility and to contract with any agency or other person to provide training, testing, evaluation or other steps necessary to fulfill those requirements.

Effect of Proposed Changes

The bill produces the following changes in legislative intent:

- Declares that it is critical to utilize the most efficient and cost-effective demand-side renewable energy and conservation systems.
- Finds that the PSC is the appropriate agency to adopt goals and approve plans related to the promotion of demand-side renewable energy systems.
- Directs the PSC to require each utility to develop plans and implement programs that include demand-side renewable energy systems.
- Encourages the development of demand-side renewable energy systems.

The bill defines the term "demand-side renewable energy system" as thermal or electric energy produced and consumed at a customer's premises.

In developing goals, which include encouraging development of demand-side renewable energy resources, the PSC may allow efficiency investments across generation, transmission, and distribution as well as efficiencies within the user base. When establishing goals, the PSC is required to evaluate the full technical potential of all available demand-side and supply-side conservation and efficiency

[55] Annual Report on Activities Pursuant to the Florida Energy Efficiency and Conservation Act, by the PSC, February 2008.

measures. The bill provides that in developing these goals, the PSC is required to take into consideration the following:

- The costs and benefits to customers participating in the measure. (Participants test)
- The costs and benefits to the general body of ratepayers as a whole, including both utility incentives and participant contributions. (similar to a Total Resource Cost test or TRC test but including the costs of incentives)
- The need for incentives to utilities to promote energy efficiency and renewable energy systems.
- The costs imposed by state and federal regulations on the emissions of greenhouse gases.

The bill further provides budget authority for the PSC to expend up to $250,000 from the Florida Public Service Regulatory Trust Fund to obtain technical consulting assistance.

The newly-created Florida Energy and Climate Commission, rather than the Executive Office of the Governor, must be included in the proceedings to adopt goals and file with the PSC comments on the proposed goals to include:

- An evaluation of utility load forecasts, including an assessment of alternative supply and demand side-side resource options.
- An analysis of implementable policy options that achieve a least-cost strategy, including non-utility programs targeted at reducing and controlling the per capital use of electricity in the state.
- An analysis of the impact of state and local building codes and appliance efficiency standards on the need for utility-sponsored conservation and energy efficiency programs.

Following the adoption of goals, the PSC may require modifications or additions to a utility's plans and programs when there is a public interest consistent with conservation, energy efficiency, and demand-side renewable energy system measures. In approving plans and programs for cost recovery, the PSC is granted the flexibility to modify or deny plans and programs that would have an undue impact on the costs passed on to ratepayers.

The bill also provides that the PSC may authorize financial rewards for those utilities over which it has rate-setting authority which exceed their goals and financial penalties for those utilities which fail to meet their goals, including but not limited to the sharing of generation, transmission, and distribution cost savings associated with conservation, energy efficiency, and demand-side renewable energy system additions.

ENVIRONMENTAL COST RECOVERY (s. 366.8255, F.S.)

Present Situation

Section 366.8255(1)(d), F.S., provides that "environmental compliance costs" includes all costs or expenses incurred by an electric utility in complying with environmental laws or regulations, including:

- In-service capital investments, including the electric utility's last authorized rate of return on equity thereon;
- Operation and maintenance expenses;
- Fuel procurement costs;
- Purchased power costs;
- Emission allowance costs;
- Direct taxes on environmental equipment; and
- Costs or expenses prudently incurred by an electric utility pursuant to an agreement entered into, on, or after the effective date of this act and prior to October 1, 2002, between the electric utility and the Florida Department of Environmental Protection or the United States Environmental Protection Agency for the exclusive purpose of ensuring compliance with ozone ambient air quality standards by an electrical generating facility owned by the electric utility.

Presentation to the Senate Committee on Environmental Preservation and Conservation

Florida Public Service Commission

February 21, 2008

Bob Trapp
Division of Economic Regulation

Topics of Discussion

- FPSC Proposed Interconnection and Net Metering Rule
- FPSC Exploration of a Florida Renewable Portfolio Standard (RPS)
- Conservation Cost-Effectiveness Tests

FPSC Efforts to Encourage Renewables

Customer-Owned Generation

- January 2007 Commission workshop to explore opportunities for further development of renewable energy in Florida.
- FPSC identified net metering and expedited interconnection as opportunities to further encourage renewable generation by retail customers.
- Informational and rule development workshops held in April, August, and October 2007.
- FPSC proposed rule amendments on December 18, 2007.
- Comments were filed by the IOU's and one private citizen.
- FPSC will consider comments at the March 4, 2008 Agenda.

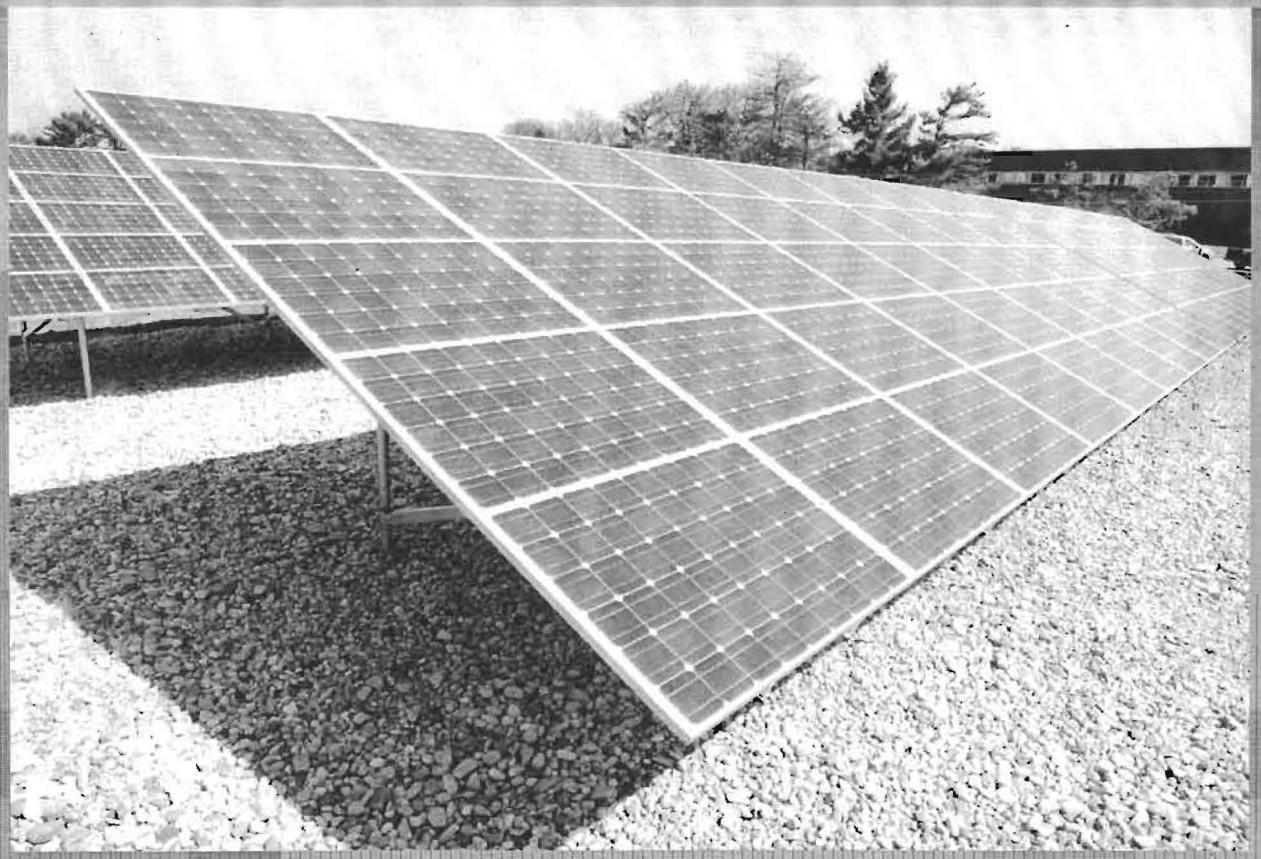
FPSC Proposed Interconnection and Net Metering Rule

- For customer-owned renewable generation that is primarily designed to offset part or all of a retail customer's electricity requirements.
- The FPSC has separate rules on the interconnection and payment for energy to non-utility generators.
- Applicable to the investor-owned utilities and their customers.
- Municipal and cooperative utilities to report interconnection and net metering activity.
- Individual system size: 2,000 kilowatts (kW) or less.
- Renewable systems as defined by Section 377.803, F.S., are eligible. Examples include solar, wind, biomass, etc.

Residential Solar Applications

Residential Solar and Small Wind Applications

Commercial Solar Applications



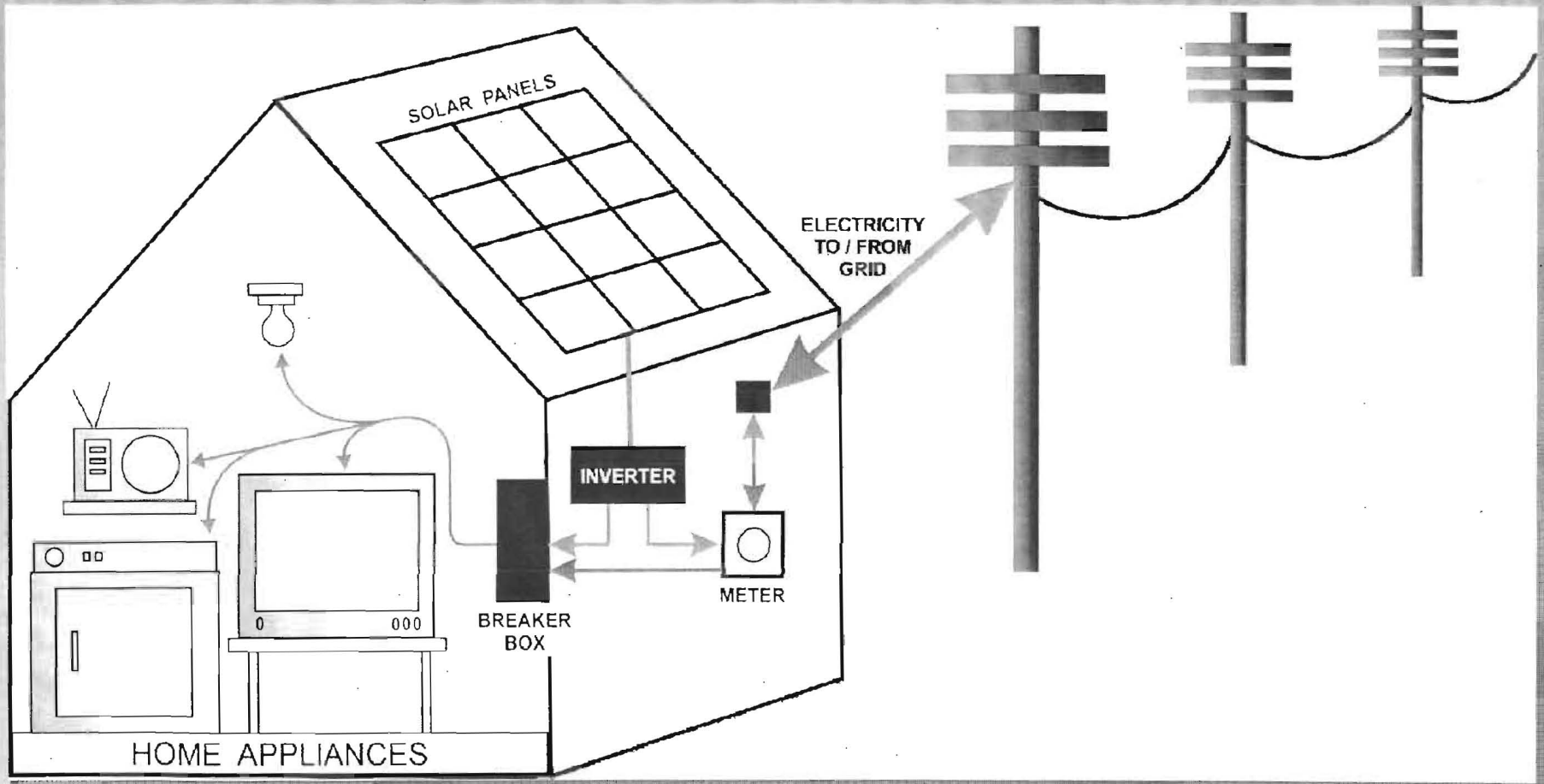
Proposed Interconnection Provisions

- Interconnection: the physical relationship between the customer's renewable generation system and the utility's electric distribution system.
- Utility must submit a standard interconnection agreement for FPSC approval and the agreement must be made readily available to customers.
- Renewable systems and the interconnection must comply with national safety standards (e.g. IEEE, UL).
- Establishes deadlines which the utility and the customer must meet to ensure interconnection is completed in an expedited manner.

Other Proposed Rule Provisions

- Intended to minimize interconnection costs for those systems that may have little impact on a utility's grid.
- Allows utilities to ensure that larger systems will not adversely impact the electrical grid absent the installation of additional facilities.
- Small systems, less than or equal to 10 kW, would be exempt from interconnection fees, studies and insurance requirements..
- Larger systems, greater than 100 kW and no more than 2,000 kW, may be subject to application fees, may require an interconnection study and must carry liability insurance.

Customer Renewable Generation System

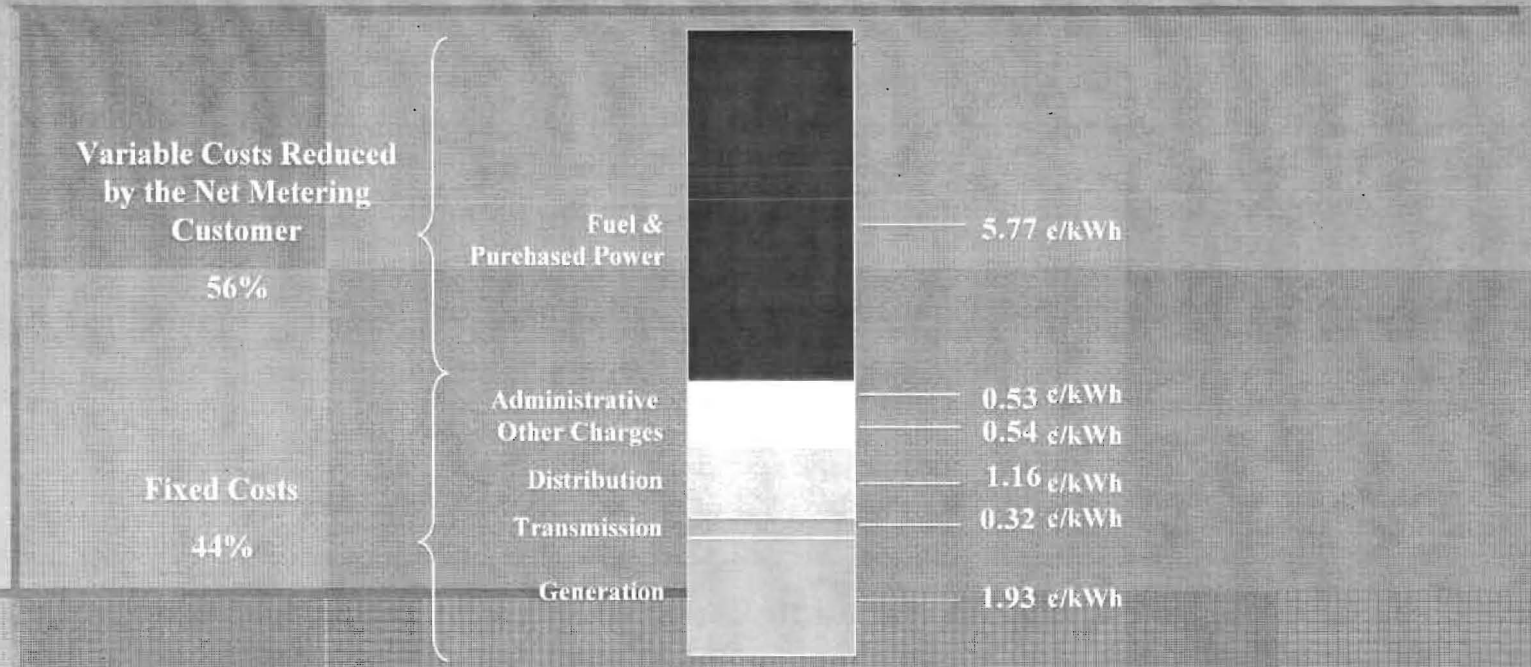


Proposed Net Metering Provisions

- Customers with renewable generation first benefit by reducing purchases from the host utility, thereby avoiding paying the retail rate.
- Proposed net metering rule treats customer renewable generation as a conservation measure.
- The amount of energy generated by the customer, and sent to the grid in excess of utility purchases, is carried forward to the next month as a credit.
- Any credit is used to reduce future utility bills, effectively at the retail rate.
- At the end of the calendar year, any remaining credit is paid to the customer at the utility's cost of producing energy.
- Utility responsible for installing, at their expense, any meters required to enable net metering of excess energy.

Typical Residential Rate Components

Total = 10.25 cents per kWh



Other Charges: Conservation (.145 cents/kWh), Environmental (0.04 cents/kWh), Storm Recovery (0.098 cents/kWh), Taxes (.256 cents/kWh).

Questions

Interconnection and Net Metering

FPSC Exploration of a Florida Renewable Portfolio Standard (RPS)

- Commission workshop in July, 2007 to explore whether a Renewable Portfolio Standard (RPS) would be appropriate for Florida.
- It became clear that there were a number of complex issues that needed to be explored in more depth. The Commission directed staff to hold a series of workshops to develop additional information.
- Workshops on RPS design were held on August 23, September 27, and December 6, 2007.
- Wide range of stakeholder participation including renewable generators, utilities, environmental advocates, electric consumers, and other state agencies.
- Also received assistance from the U.S. Environmental Protection Agency (EPA), which provided subject matter speakers for each workshop.

FPSC Exploration of a Renewable Portfolio Standard (RPS)

- *Major Factors Affecting RPS Design* -

- Clear identification of policy objectives.
- Coordination with State and Federal legislation, policies, and regulations governing green house gas emissions (such as cap-and-trade).
- Incentive mechanisms for higher cost clean technologies (such as goal multipliers, set asides, ratepayer subsidies, Public Benefit Fund).
- Impact on electric customer rates.

FPSC Exploration of a Renewable Portfolio Standard (RPS)

- Other Important Factors -

- Compliance strategy
  - (mandatory vs. aspirational goals; rewards and penalties)
- Timing of goals
- Eligibility requirements
  - (definition of renewable)
- Applicability to municipal electric utilities and rural electric cooperatives

FPSC Exploration of a Renewable Portfolio Standard (RPS)

- *Jurisdiction* -

- Section 366.92, F.S., authorizes the FPSC to adopt goals for increasing renewable energy resources.
- The FPSC has statutory authority to establish rewards and penalties for IOUs who exceed or fall short of the adopted goals.
- The Florida Energy Commission and Governor's Action Team have recommended establishing green house gas (GHG) emission reduction targets.
- If tradable GHG emissions allowances are established this will facilitate the development of an RPS for the state.

Questions

Renewable Portfolio Standards

Florida Energy Efficiency and Conservation Act (FEECA)

Section 366.80-.82, Florida Statutes

- Enacted in 1980
- Emphasis on reducing the growth rates of peak demand, reducing and controlling the growth rates of electricity consumption
- Required the PSC to adopt goals related to the conservation of electric energy
- Authorized the PSC to require each utility to develop plans and implement cost-effective programs for increasing energy efficiency and conservation within its service area
- Provides for recovery of program costs

Cost-Effectiveness Tests

- A utility may serve customer load with:
  - Supply-Side Resources:
    - Generation
    - Purchased Power
  - Demand-Side Resources:
    - Energy Efficiency Programs
    - Load Management Programs
- Each option has associated costs that must be borne by ratepayers
- How to analyze the benefits and costs of Demand-Side Management (DSM) Programs?

Cost-Effectiveness Tests

- Cost-effectiveness tests analyze the economics of DSM programs from different perspectives:
  - DSM program participants
  - Non-participants
  - All ratepayers
  - Society
- The FPSC considers the results of all three tests in its decision making on DSM goals and program cost-effectiveness
  - Participant Test
  - Rate Impact Measure Test
  - Total Resource Cost Test

Participant Test

- Will the customer be better off by participating in the program?
  - Are the bill savings greater than the cost of participating?

Benefits	Costs
Reduction in Customer Bills	Out of Pocket Expenses to Participate in the Program:
Incentive Paid by the Utility (ratepayers)	- Equipment Costs - Maintenance Costs

Rate Impact Measure (RIM) Test

Benefits	Costs
Avoided Supply Costs (Capital and O&M) - Generation - Transmission - Distribution Net Fuel Impact	Program Costs - Equipment, Administration Program Incentives Decreased Revenues

Rate Impact Measure (RIM) Test

- What is the impact of the program on utility revenues (rates) and what is the effect on the non-participating customer?
- Eliminates cross subsidies as participants and non-participants benefit.
- Programs with relatively higher kWh reductions will result in higher revenue losses and reduce the potential to be cost-effective under RIM.

Total Resource Cost (TRC) Test

Benefits	Costs
Avoided Supply Costs (Capital and O&M) - Generation - Transmission - Distribution Net Fuel Impact	Program costs - Equipment, Administration Participant's Out of Pocket Expenses - Equipment Costs - Maintenance Costs

Total Resource Cost (TRC) Test

- Measures the overall economic efficiency of a DSM program from the perspective of all ratepayers.
- Measures the net costs of a DSM program based on total program costs, including both the participants and utility's costs.
- Incentives and revenue losses are not included as costs, and are treated as transfer payments among ratepayers (no net cost).
- Because revenue losses are not included, programs with relatively higher kWh reductions are more likely to be cost-effective under TRC.

RIM vs. TRC

- RIM and TRC calculate benefits identically
- Treatment of costs differ greatly

	Benefits	Costs
RIM	Avoided Supply Costs	Program Costs Incentives Lost Revenues
TRC	Avoided Supply Costs	Program Costs

Cost-Effectiveness Tests

- IOUs must file, at a minimum, cost effectiveness data on a DSM program:
  - Participant Test
  - TRC Test
  - RIM Test
- Tests are filed for:
  - DSM goal setting
  - DSM plan approval
  - DSM program approval
  - DSM program modifications
  - As part of ongoing monitoring of cost-effectiveness
- Historically, the FPSC's focus is to ensure adequate, reliable electric service and at to keep rates low
- DSM programs approved by the PSC have benefited all utility ratepayers