Energy & Utilities Subcommittee

Wednesday, January 23, 2013
9:00 AM
Webster Hall (212 Knott)

Will Weatherford
Speaker

Clay Ford
Chair

The Florida House of Representatives

Regulatory Affairs Committee

Energy & Utilities Subcommittee

Will Weatherford
Speaker

Clay Ford
Chair

AGENDA

January 23, 2013
9:00 a.m. – 11:00 a.m.
212 Knott Building (Webster Hall)

Opening Remarks by Chair Ford

Presentation by the Public Service Commission relating to a **Report On Electric Vehicle Charging**

- Mark Futrell, Director
  Office of Industry Development and Market Analysis
  Florida Public Service Commission

Presentation regarding an **Evaluation of Florida's Energy Efficient and Conservation Act**

- Theodore Kury, Public Utility Research Center
- Edward Regan, P.E., Public Utility Research Center
- Jennison Kipp, Program for Resource Efficient Communities
  University of Florida

- Susan Glickman, Lobbyist & Consultant
  Southern Alliance for Clean Energy

- Thomas C. Larson, Florida Energy Policy Manager
  Southern Alliance for Clean Energy

- Robert Scheffel "Schef" Wright
  Gardner Bist Wiener Wadsworth Bowden Bush Dee LaVia & Wright, P.A.
  Florida Retail Federation

Closing Remarks by Chair Ford

Adjournment

303 House Office Building, 402 South Monroe Street, Tallahassee, Florida 32399-1300
(850) 717-4870 FAX (850) 413-0419

Mark Futrell
Public Service Commission

Report on Electric Vehicle Charging

Presentation to the

House of Representatives
Energy and Utilities Subcommittee

Mark Futrell
Florida Public Service Commission Staff
January 23, 2013

Recent Legislative Direction on Electric Vehicles

Chapter 2012-117, Laws of Florida

- Required the FPSC to submit a report on electric vehicle (EV) charging by December 31, 2012.
  - Potential effects of charging stations on energy consumption and the impact on the electric grid.
  - Investigate feasibility of using off-grid solar photovoltaics as a source of EV charging.
- Exempted non-utility providers of EV charging from FPSC rate authority.
- Required the DACS to adopt rules on definitions, methods of sale, labeling and price posting requirements for EV charging stations.
- Established traffic infraction for parking a non-EV vehicle in a space designated for EV charging.

Electric Vehicle Charging Study

- The FPSC gathered data and information:
  - Public workshop on September 6, 2012. Participants included EV industry representatives, policy experts, and representatives from Florida's electric utilities.
  - Data request to Florida's electric utility industry.
  - Conducted an extensive literature review.
- The report was submitted to the Governor and the Legislature on December 31, 2012.

Electric Vehicle Basics

- Plug-in Hybrid Electric Vehicle
  - Operates on electricity from batteries and gasoline.
  - Range on electricity 38-62 miles; gasoline 300 miles.
  - Examples include Chevrolet Volt and Toyota Prius EV.
- All Electric Vehicle
  - Operate solely on electricity from batteries.
  - Range: 92-300 miles.
  - Examples include Nissan Leaf and Tesla Roadster.
- Many manufacturers are testing or releasing models for public sale.
- California is the largest market for EVs, due to state laws that favor low-emission vehicles and state incentives.
- Federal Tax Credit for EVs: $7,500.




Electric Vehicle Chargers (Level 1)

- Level 1 chargers are generally limited to home use. These chargers plug into a standard wall outlet, and are supported by nearly all EV models.
- These chargers draw about 1.1-1.8 kilowatts (kW), about the same as a typical hairdryer, but require at least 8-10 hours to charge an EV.
- 665 Level 1 chargers in Florida.

FLORIDA PUBLIC SERVICE COMMISSION
STATE OF FLORIDA

Electric Vehicle Chargers (Level 2)

- Level 2 chargers are suited either to home or public use.
- Require a 240 volt outlet, similar to what is required for an electric clothes dryer.
- Draw 3.3 kW, and can charge most EVs in 4-5 hours.

Electric Vehicle Chargers (Level 2+)

- Level 2+ chargers can draw up to 20 kW, which can charge an EV in 1-2 hours.
- Only certain EV models can be charged from these high capacity systems.
- Many public Level 2 and 2+ chargers installed in Florida were funded by grants from the American Recovery and Reinvestment Act.
- 794 Level 2 and 2+ chargers in Florida.

Effect on Energy Consumption

- EV charging will increase electricity consumption and lower petroleum-based fuel consumption.
- Both effects are expected to be very limited during the ten-year planning horizon.
- The charging profile of EVs and the projected growth in electricity sales will not impact generation adequacy.
- EV charging is projected to occur primarily at night and thus at the end of the utility’s peak demand period.
  - Time-of-use rates could mitigate any potential increase in peak demand.

Impact on the Electric Grid

- Public and Private EV chargers are expected to have little impact on grid reliability.
- Clustering of EVs in residential neighborhoods could potentially require upgrades to distribution system equipment.
- Higher voltage EV chargers, which may draw up to 20 kW, may also require larger capacity distribution facilities.
- Public “quick-charge” stations may require an electric demand of 50 kW or more, may operate during times of peak demand and feature charge times of 15-30 minutes.
  - None have been installed in Florida at present.

Feasibility of Solar PV for Off-Grid Charging

- Off-grid solar photovoltaic (PV) energy for EV charging is feasible, but does not appear to be a practical option except in remote locations.
- Grid-tied solar PV allows customers to reduce their purchases of electricity, but ensure reliable service during times when solar PV is reduced or unavailable.
- Solar production times do not align with EV charging at night times.

Feasibility of Solar PV for Off-Grid Charging

- Energy storage has the potential to make off-grid solar PV charging more practical.
- Currently, costs for energy storage are estimated at roughly $10,000 for a battery that can charge one car per day.
- The cost of energy storage will generally exceed the cost of interconnecting a solar PV system to the electric grid.
- Off-grid solar PV may be practical in the most remote parts of the state, if there are no convenient connections to the grid.

Other State EV Initiatives

- California's Zero-Emission Vehicle initiative requires automakers to meet percentage sales goals of zero-emission vehicles, primarily EVs.
  - State EV tax credit: $2,500.
- North Carolina has initiated studies to determine the impact of EVs and to develop plans to accommodate growth.
- California and Virginia, like Florida, have exempted any non-utilities that sell electricity to charge an EV from utility regulation.
- Several states also offer rebates, income tax credits, free parking, or the use of high-occupancy vehicle lanes to EV owners. A number of states also require or encourage state agencies to add EVs to their vehicle fleets.

Conclusions

- EVs are a niche product and any effects will be dependent on the growth of EV sales.
- EV charging is expected to marginally increase electricity consumption.
- EVs are estimated to have reduced motor gasoline consumption by 2 million gallons in 2012.
- EVs are not expected to significantly increase electric demand or contribute to a need for new generation.
- EV charging could require upgrades to electric distribution equipment in limited instances.
- Off-grid solar PV for EV charging is technically feasible, but it may only be practical in unique circumstances.

FPSC's Report on EV Charging:

http://www.floridapsc.com/utilities/electricgas/electricvehicles/09_06_2012/Electric_Vehicle_Charging_Report.pdf

Evaluation of the Florida Energy Efficiency and Conservation Act

Summary of Findings and Recommendations

January 23, 2013

Prepared by the:
University of Florida's Public Utility Research Center and
Program for Resource Efficient Communities
and the
National Regulatory Research Institute

UF Public Utility Research Center
Warrington College of Business Administration
UNIVERSITY of FLORIDA

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Program for Resource Efficient Communities

Presentation Outline

- Purpose of Evaluation
- Methodology
- Findings and Recommendations
- Supplemental Information
  - The Evaluation Team
  - FEECA Covered Utilities

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Purpose of Evaluation

- Determine if FEECA remains in public Interest
- Identify possible improvements and alternatives
- Criteria
  - Costs to ratepayers
  - Incentives and disincentives in FEECA
  - Undue burdens on customers
  - Models and methods used to determine goals

Methodology

- Review legislative and regulatory history
- Examine methods, models, data and assumptions
- Conduct sensitivity analysis
- Perform impact analysis
- Make cross-state comparisons of policies and performance
- Review building codes and appliance efficiency standards
- Hold stakeholder focus groups

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Focus Groups

- Three workshops
  - Utilities; Commercial Vendors; Consumer and Environmental Groups
- Brainstorming on public interest, perceptions on FEECA, alternatives to FEECA
- Affinity sort on opinions, concerns, ideas and alternatives
- Survey on FEECA impact and alternatives

Findings Regarding Public Interest

- Based on available information, FEECA is in public interest
  - Concerns about data quality
  - Assessment focused on aggregate outcomes, not individual programs

Reasons for Public Interest Finding

- FEECA programs are cost effective
  - Benefits exceed costs
  - Florida effectiveness in line with similarly situated states
- FEECA programs compensate for lack of price signals
  - Electricity prices are below costs at certain times
- Customers are not burdened
  - FPSC uses accepted benefit-cost tests
  - Customer participation is voluntary
- FEECA supported by stakeholders

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Areas for Improvement: Clarify Criteria in Goal Setting

- Economic criteria for setting goals decided at end of goal setting process
  - Recent occurrence
  - Added costs to goal setting process
- Recommendation
  - Identify criteria prior to development of studies and filings

Areas for Improvement (cont.): Data Quality and Accessibility

- Data difficult to access and use
  - Filings extensively on paper, some nearly illegible, and contained gaps and inconsistencies
  - Increases costs of assembling and evaluating models and proposals
  - Some stakeholders cited as problem
- Recommendation
  - Require electronic data submittals with greater uniformity
  - Funding needed for systems development and analysis capability

Areas for Improvement (cont.): Cost Effectiveness Tests

- Current tests
  - Focus on participant net benefits and non-participant rate impacts
  - Omit broader impacts on Florida economy
- Recommendation
  - Cost effectiveness criteria should
    - Continue to include participant net benefits
    - Incorporate net benefits to Florida as a whole
      - May lead to rate increases

Areas for Further Study

- Best practices for education and promotion
  - Increased effectiveness
- Portfolio approach
  - Greater flexibility
- Improved rate design
  - Increases efficiency of electricity use
- Standards for tenant-occupied dwellings
  - Improved efficiency incentives
- Implement utility incentive system
  - Improved effort and investment

Questions?

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Supplemental Information:
The Evaluation Team

- PURC - Public Utility Research Center, Warrington School of Business, University of Florida
  - Highly experienced in Florida, national, and international utility regulation and economics
  - Strong research, data analysis, and financial modeling capabilities
  - Experienced in engaging disparate interest groups in meaningful dialog
- PREC - Program for Resource Efficient Communities, University of Florida Institute of Food and Agricultural Sciences (IFAS), University of Florida
  - Supports IFAS Energy Extension Energy Extension, experienced in energy conservation program impact evaluation, measurement, and verification
- NRRI - National Regulatory Research Institute
  - Supported by and serves needs of state utility regulators in the US

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Supplemental Information:
Electric Utilities Subject to FEECA Requirements

- Florida Power & Light (investor owned)
- Progress Energy Florida Inc. (investor owned)
- Tampa Electric Company (investor owned)
- Gulf Power Company (investor owned)
- Florida Public Utilities Company (investor owned)
- JEA (formerly Jacksonville Electric Authority, municipally owned)
- Orlando Utilities Commission (municipally owned)

Susan Glickman
Southern Alliance for Clean Energy

The Economist

Science and technology

Sunny uplands

Alternative energy will no longer be alternative

Nov 21st 2012 | from The World In 2013 print edition

Rebranding is always a tricky exercise, but for one field of technology 2013 will be the year when its proponents need to bite the bullet and do it. That field is alternative energy. The word “alternative”, with its connotations of hand-wringing greenery and a need for taxpayer subsidy, has to go. And in 2013 it will. “Renewable” power will start to be seen as normal.

Wind farms already provide 2% of the world’s electricity, and their capacity is doubling every three years. If that growth rate is maintained, wind power will overtake nuclear’s contribution to the world’s energy accounts in about a decade. Though it still has its opponents, wind is thus already a grown-up technology.

But it is in the field of solar energy, currently only a quarter of a percent of the planet’s electricity supply, but which grew 86% last year, that the biggest shift of attitude will be seen, for sunlight has the potential to disrupt the electricity market completely.

The underlying cause of this disruption is a phenomenon that solar's supporters call Swanson's law, in imitation of Moore's law of transistor cost. Moore's law suggests that the size of transistors (and also their cost) halves every 18 months or so. Swanson's law, named after Richard Swanson, the founder of SunPower, a big American solar-cell manufacturer, suggests that the cost of the photovoltaic cells needed to generate solar power falls by 20% with each doubling of global manufacturing capacity. The upshot (see chart) is that the modules used to make solar-power plants now cost less than a dollar per watt of capacity. Power-station construction costs can add $4 to that, but these, too, are falling as builders work out how to do the job better. And running a solar power station is cheap because the fuel is free.

Coal-fired plants, for comparison, cost about $3 a watt to build in the United States, and natural-gas plants cost $1. But that is before the fuel to run them is bought. In sunny regions such as California, then, photovoltaic power could already compete without subsidy with the more expensive parts of the traditional power market, such as the natural-gas-fired "peaker" plants kept on stand-by to meet surges in demand. Moreover, technological developments that have been proved in the laboratory but have not yet moved into the factory mean Swanson's law still has many years to run.

Running a solar power station is cheap because the fuel is free

Comparing the cost of wind and solar power with that of coal- and gas-fired electricity generation is more than just a matter of comparing the costs of the plant and the fuel, of course. Reliability of supply is a crucial factor, for the sun does not always shine and the wind does not always blow. But the problem of reliability is the subject of intensive research. Many organisations, both academic and commercial, are working on ways to store electricity when it is in surplus, so that it can be used when it is scarce.

Progress is particularly likely during 2013 in the field of flow batteries. These devices, hybrids between traditional batteries and fuel cells, use liquid electrolytes, often made from cheap materials such as iron, to squirrel away huge amounts of energy in chemical form. “Grid-scale” storage of this or some other sort is the second way, after Swanson’s law, that the economics of renewable energy will be transformed.

One consequence of all this progress is that subsidies for wind and solar power have fallen over recent years. In 2013, they will fall further. Though subsidies will not disappear entirely, the so-called alternatives will be seen to stand on their own feet in a way that was not true in the past. That will give them political clout and lead to questions about the subventions which more traditional forms of power generation enjoy (coal production, for example, is heavily subsidised in parts of Europe).

Fossil-fuel-powered electricity will not be pushed aside quickly. Fracking, a technological breakthrough which enables natural gas to be extracted cheaply from shale, means that gas-fired power stations, which already produce a fifth of the world's electricity, will keep the pressure on wind and solar to get better still. But even if natural gas were free, no Swanson's law-like process applies to the plant required to turn it into electricity. Nuclear power is not a realistic alternative. It is too unpopular and the capital costs are huge. And coal's days seem numbered. In America, the share of electricity generated from coal has fallen from almost 80% in the mid-1980s to less than a third in April 2012, and coal-fired power stations are closing in droves. It may take longer to make the change in China and India, where demand for power is growing almost insatiably, and where the grids to take that power from windy and sunny places to the cities are less developed than in rich countries. In the end, though, they too will change as the alternatives become normal, and what was once normal becomes quaintly old-fashioned.

Geoffrey Carr: science editor, *The Economist*

from The World In 2013 print edition

Forbes

Peter Kelly-Detwiler, Contributor
I write about energy technologies and policies.

ENERGY | 1/15/2013 @ 9:00AM | 2,257 views

New Centralized Nuclear Plants: Still an Investment Worth Making?

(Image credit: Getty Images Europe via @daylife)

Just a few years ago, the US nuclear renaissance seemed at hand. It probably shouldn't have been. Cost overruns from Finland to France to the US were already becoming manifest, government guarantees were in doubt, and shale gas drillers were beginning to punch holes into the ground with abandon.

Then came Fukushima. The latter proved a somewhat astonishing reminder of forgotten lessons about nuclear power risks, unique to that technology: A failure of one power plant in an isolated location can create a contagion in countries far away, and even where somewhat different variants of that technology are in use. Just as Three Mile Island put the kaibosh on nuclear power in the US for decades, Fukushima appears to have done the same for Japan and Germany, at a minimum. It certainly did not help public opinion, and at a minimum, the effect of

Fukushima will likely be to increase permitting and associated regulatory costs.

By contrast, when a gas-fired plant in Connecticut exploded during construction a few years ago, it didn't affect the public perception of other gas plants. But Fukushima and nuclear power is another story. The stakes are so much bigge

Even without Fukushima, the verdict on large centralized US nukes is probably in, for the following reasons:

1) They take too long: In the ten years it can take to build a nuclear plant, the world can change considerably (look at what has happened with natural gas prices and the costs of solar since some of these investments were first proposed). The energy world is changing very quickly, which poses a significant risk for thirty to forty year investments.

2) They are among the most expensive and capital-intensive investments in the world; they cost many billions of dollars, and they are too frequently prone to crippling multi-billion dollar cost overruns and delays. In May 2008, the US Congressional Budget Office found that the actual cost of building 75 of America's earlier nuclear plants involved an average 207% overrun, soaring from $938 to $2,959 per kilowatt.

3) And once the investments commence, they are all-or-nothing. You can't pull out without losing your entire investment. For those with longer memories, WPPS and Shoreham represent $2.25 bn (1983) and $6 bn (1989) wasted investments in which nothing was gained and ratepayers and bondholders lost a good deal.

Some recent investments in centralized nuclear plants in other countries highlight and echo these lessons.

Electricite de France's Flamanville plant has seen its budget explode from 3.3 to 6 bn (July 2011) to 8 bn Euros ($10.5 bn) as of last December, with a delay of four years over original targets. EDF in part blames stricter post-Fukushima regulations for part of the overrun). To the north, Finland's Olkiluoto – being constructed by Areva – has seen delays of nearly five years, and enormous cost overruns. The original turnkey cost of 3.0 bn Euros has skyrocketed beyond all fears, increasing at least 250%. Just last month, Areva's CEO conceded "We estimate that the costs of Olkiluoto are near those of Flamanville."

In the US, recent experience doesn't look much better: Progress Energy (now Duke) first announced the 2,200 MW Levy nuclear project in 2006, with an estimated price tag of $4 to $6 bn and an online date of 2016. The cost estimated increased to $17 bn in 2008. This year, Progress announced the project would cost $24 billion and come online in 2024. The Levy plant currently has a debt in excess of $1.1 bn for which customers had already paid $545 million through 2011. As of now, the utility plans to proceed, with the Executive VP for Power Generation stating "We've made a decision to build Levy...I'm confident in the schedule and numbers."

In Georgia, Vogtle Units 3 and 4 (owned jointly by a number of utilities, including Georgia Power) appear in somewhat better shape, but issues have cropped up there as well. Customers currently pay $10 per month in advance to cover financing associated with the two 1,117 MW units. Georgia Power is allowed by legislation to recover $1.7 bn in financing costs of its estimated $6.1 bn portion of the $14 bn plant during the construction period. However, there have already been some cost problems, and Georgia Power is disputing its responsibility to pay $425 million of overruns resulting from delays in licensing approvals. Total cost excesses to all partners total $875 mn. The two units were expected to come online in 2016 and 2017, but in a Georgia PSC meeting in December, an independent monitor noted that expected delays of fifteen months are largely as a result of poor paperwork related to stringent design rules and quality assurance. Those delays will likely continue to cost more money.

Unfortunately, these experiences are not outliers. From 2007 to 2010, the NRC received 18 nuclear applications (of which only twelve are still active). Of these, the consulting outfit Analysis Group reported that for eight plants where they were able to obtain two or more comparable cost estimate, 7 are over budget (including Levy and Vogtle), with updated numbers "often double or triple initial estimates." This is consistent with an MIT study estimating 'overnight' costs nearly doubling from 2002 to 2007. As utilities management consultant Stephen Maloney was quoted in the Analysis Group study "No one has ever built a contemporary reactor to contemporary standards, so no one has the experience to state with confidence what it will cost. We see cost escalations as companies coming up the learning curve."

Last August, Exelon abandoned plans to construct two facilities in Texas, blaming low natural gas prices. Two months later, Dominion Resources announced that it would shut down its existing Kewaunee station in Wisconsin as a consequence of low gas prices and a lack of buyers. The latter move was particularly eye-opening: building a nuclear plant is supposed to be the expensive part, while operation is expected to be relatively cheap.

So it appears that the nuclear renaissance may be largely over before it started. And yet, many projects have not yet been canceled, with utilities and ratepayers accepting ever more risk in order to rescue sunk costs. In many cases, these costs have soared or will soar into the billions. As risk management expert Russell Walker of the Kellogg School of Management is quoted as saying in the Tampa Bay Times "When the stakes get higher, it gets harder for organizations to walk away…this happens a lot. It's the same problem a gambler has: If I play a little longer, it'll come around."

With low natural gas prices, efficient combined cycled turbines, more efficient renewables and a host of more efficient end-use technologies, that's a bet fewer and fewer seem wiling to take. Unfortunately for ratepayers at some utilities, they are at the table whether they like it or not…

This article is available online at:
http://www.forbes.com/sites/peterdetwiler/2013/01/15/new-centralized-nuclear-plants-still-an-investment-worth-making/

cleanenergy.org

Southern Alliance for Clean Energy

Florida Energy Efficiency & Conservation Act

FEECA Evaluation Review

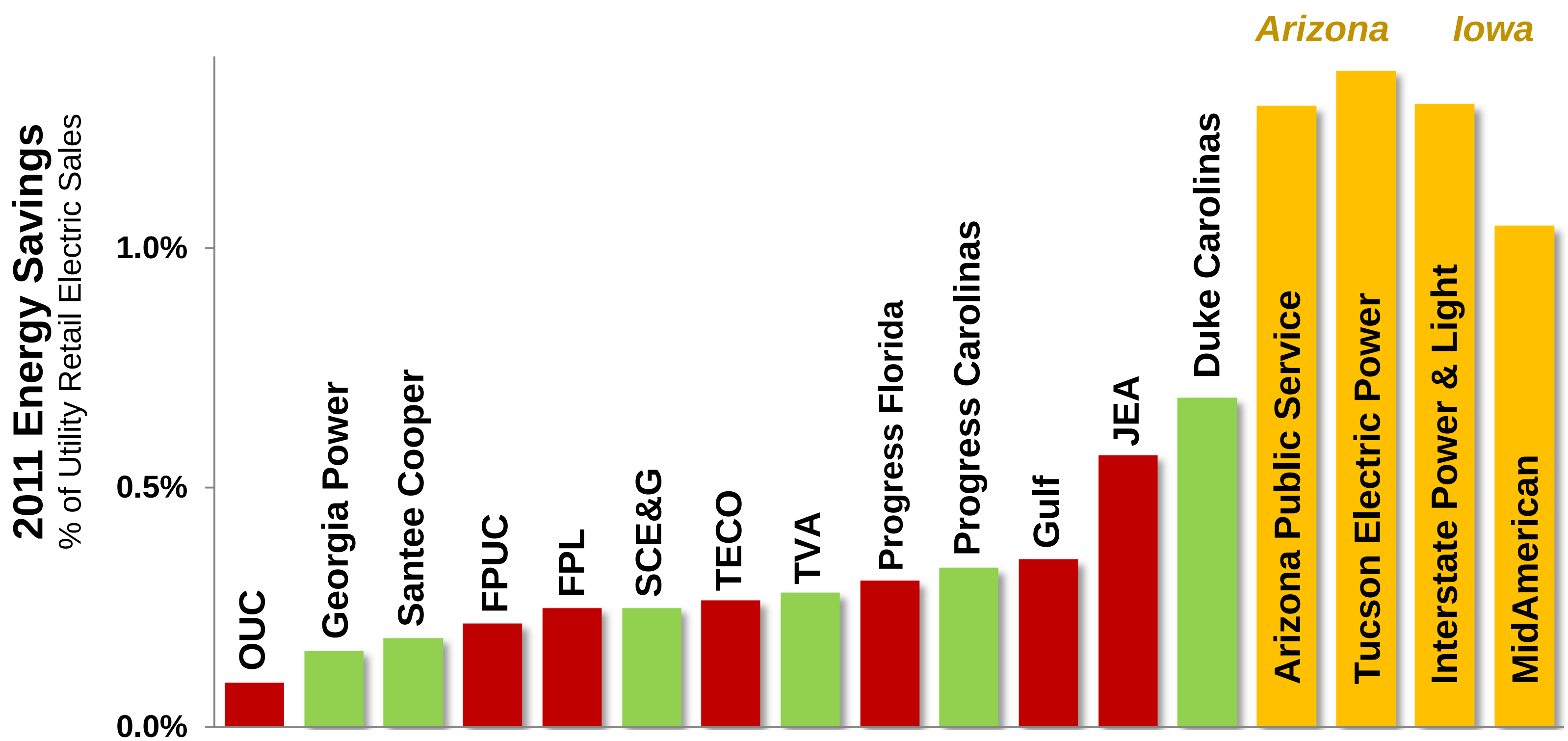
The Opportunity for Least-Cost Planning

January 2013

FEECA Opportunities

- **In setting efficiency goals, Florida should use the Utility Cost Test (UCT) and Total Resource Cost (TRC) cost-effectiveness tests to keep overall system costs low.**
- **Provide more effective oversight of Florida's energy efficiency program costs.**
- **The Florida Public Service Commission should standardize Evaluation, Measurement and Verification and Energy Conservation Cost Recovery (ECCR) reporting.**
- **Moving cost-effective analysis to the portfolio level will streamline the FEECA process, but program-level granularity is still needed in Florida.**
- **The Utility planning process should be least-cost based and consider energy efficiency as a primary resource .**

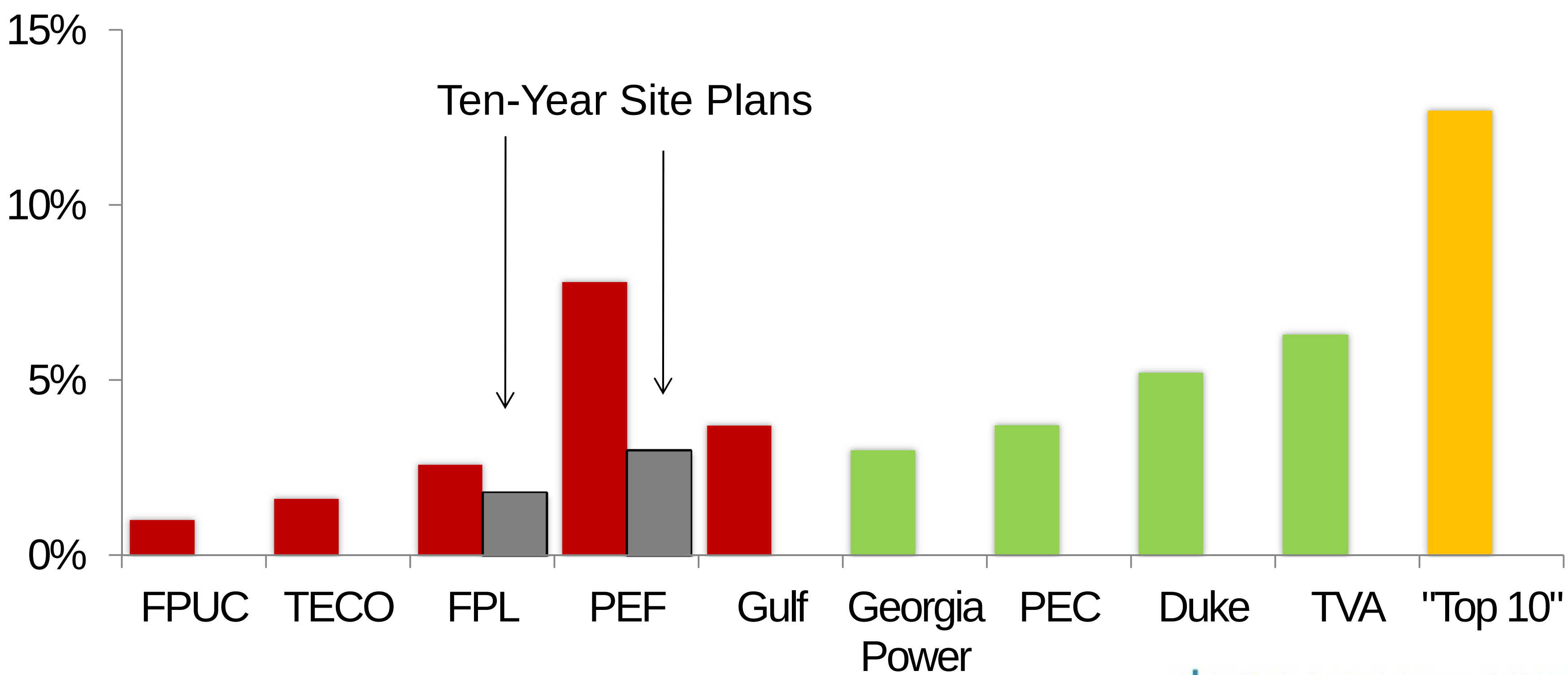
Florida Energy Savings is Low



SACE calculations based on 2011 program cost and energy savings reports filed by each utility.
Utility retail electric sales based on most recent publicly available retail sales data (ideally for 2011).

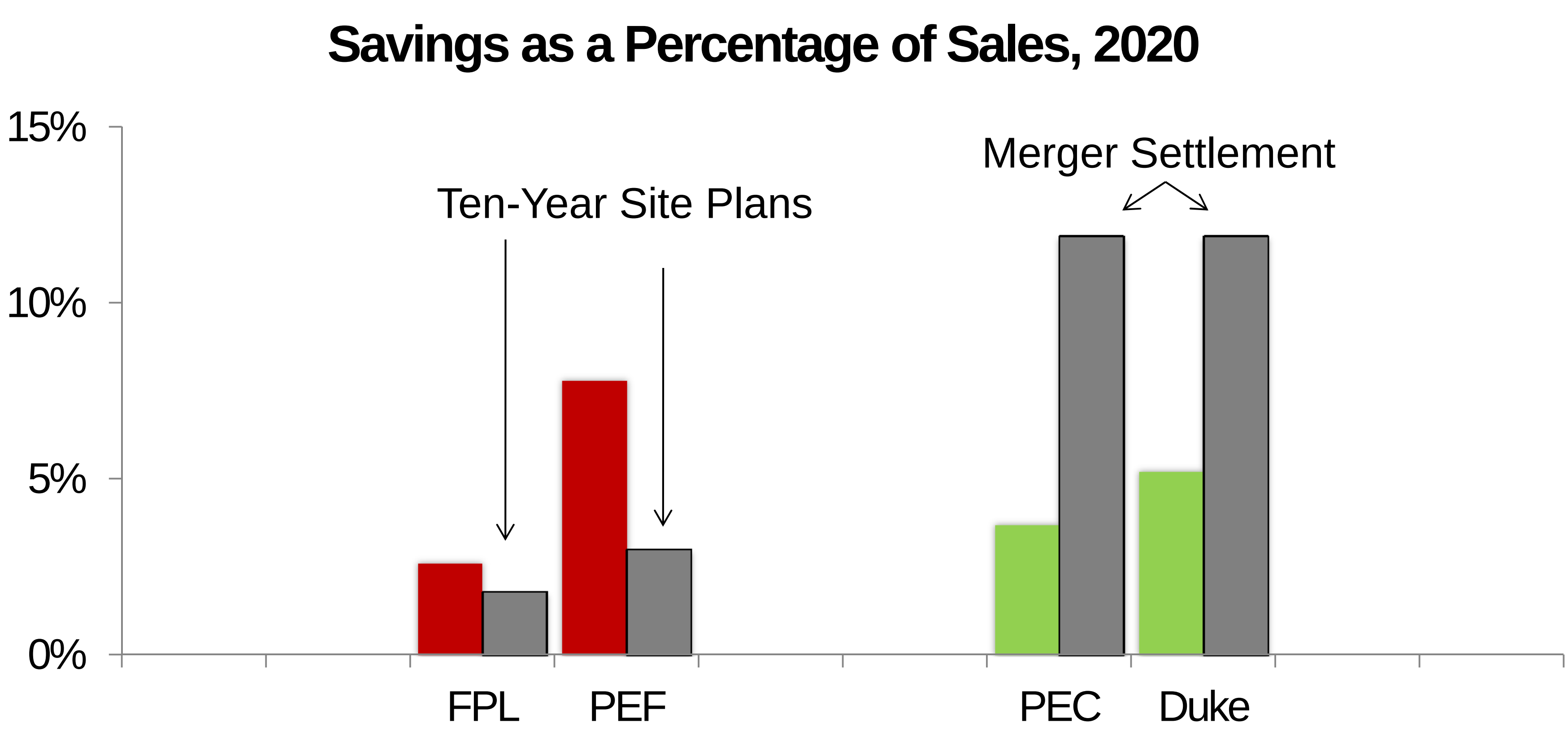
Energy Efficiency Goals in Perspective

Savings as a Percentage of Sales, 2020



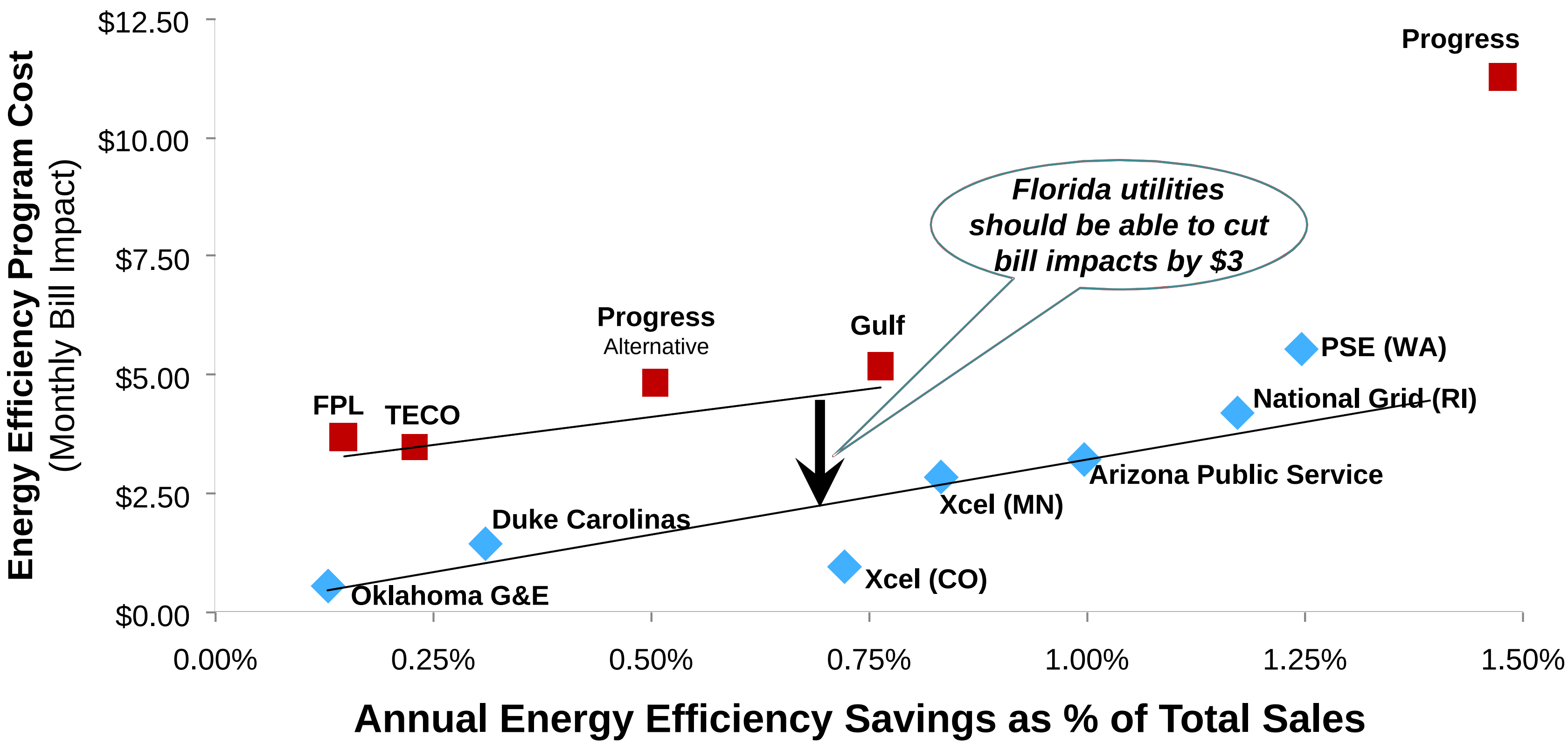
Source: SACE analysis of Florida utility DSM plans, FPL and PEF ten-year site plans, Georgia Power 2010 IRP, PEC 2011 IRP, DEC 2011 IRP, TVA 2010 IRP, ACEEE 2011 State Scorecard

Florida vs. Carolinas:
Efficiency Expectations Moving in Opposite Directions



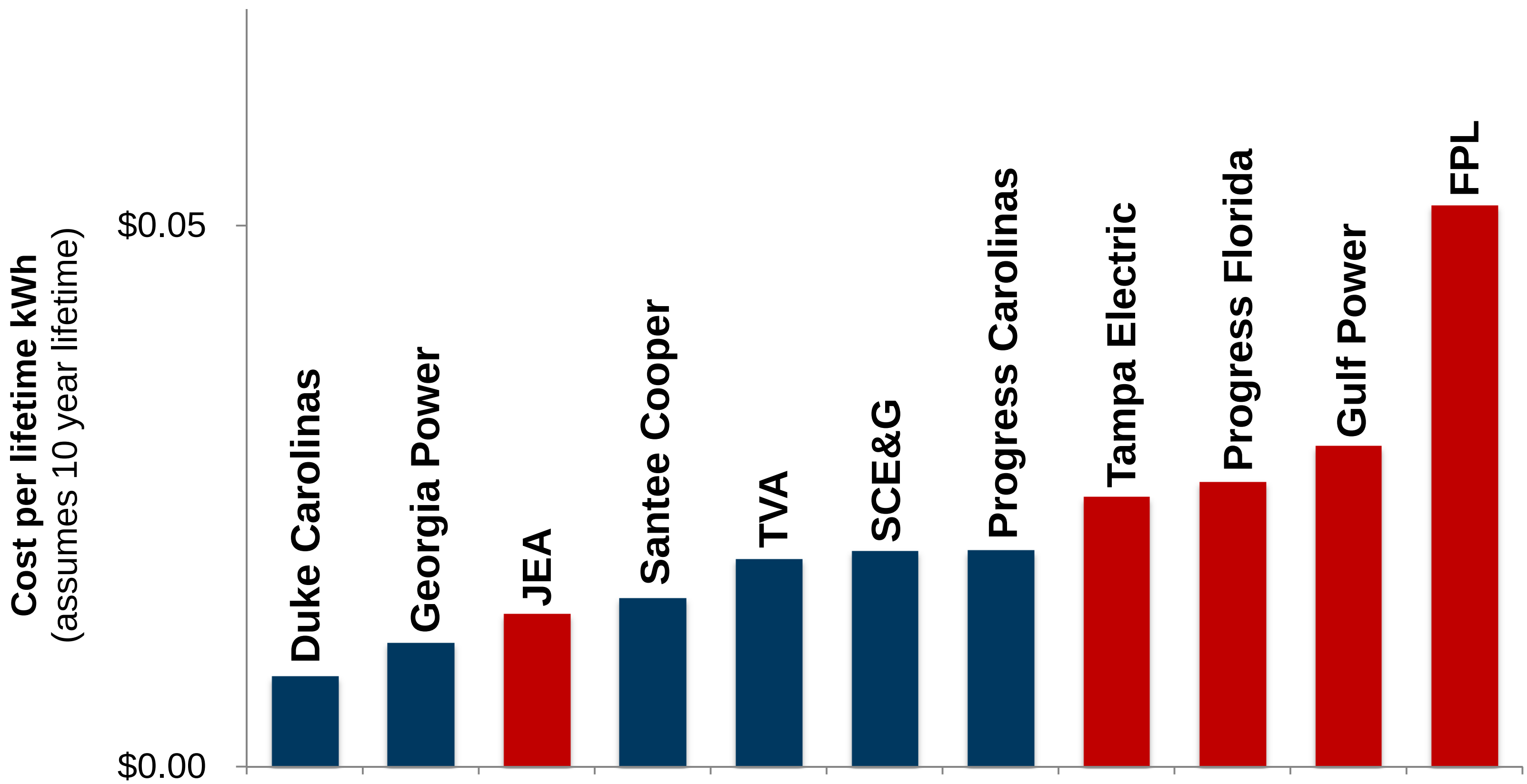
Source: SACE analysis of Florida utility DSM plans, FPL and PEF ten-year site plans, Georgia Power 2010 IRP, PEC 2011 IRP, DEC 2011 IRP, TVA 2010 IRP, ACEEE 2011 State Scorecard

Florida Utilities Efficiency Costs: Higher than National Peers



Source: Southern Alliance for Clean Energy, letter to Office of Regulatory Analysis, Florida Public Service Commission, Docket Nos. 100154-EG, 100155-EG, 100159-EG, and 100160-EG, December 22, 2010.

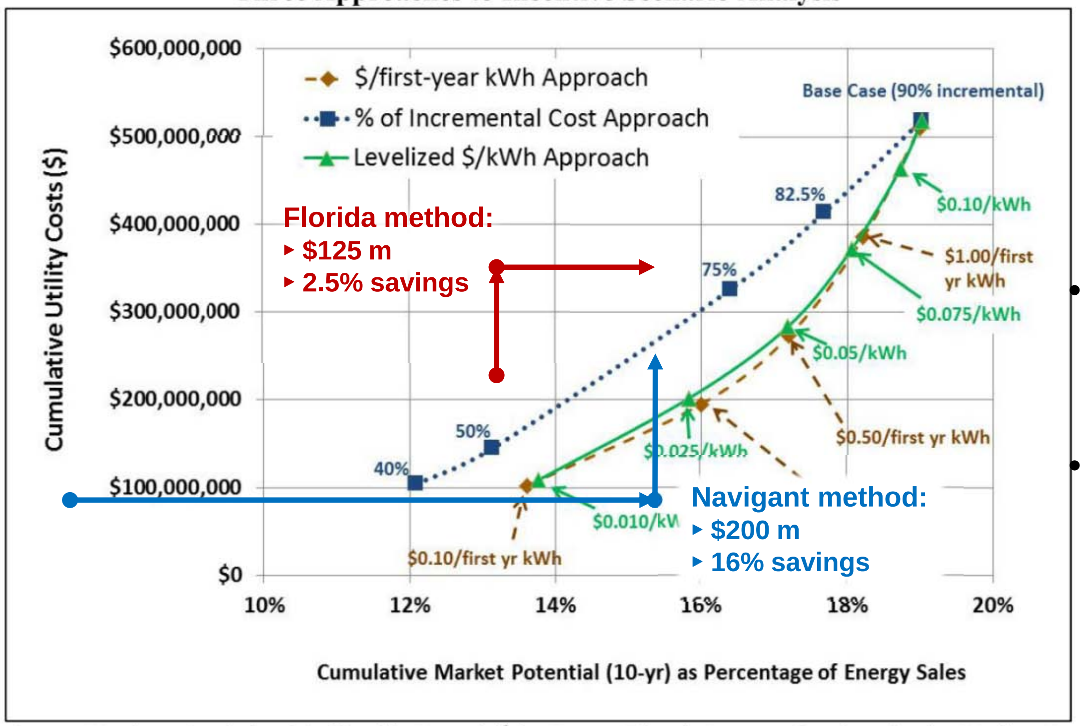
Southeast Utilities Energy Efficiency Costs



SACE calculations based on 2011 program cost and energy savings reports filed by each utility. Cost per kWh saved assumes an average measure life of 10 years. Most Southeastern utilities do not publicly report average measure life or levelized cost values. Where available, average measure lives are typically reported as 7-12 years averaged across the entire portfolio.

Florida Potential Study Methods: Higher Costs, Lower Savings

Figure 1. Cumulative Costs vs. Cumulative Market Potential -- Three Approaches to Incentive Scenario Analysis

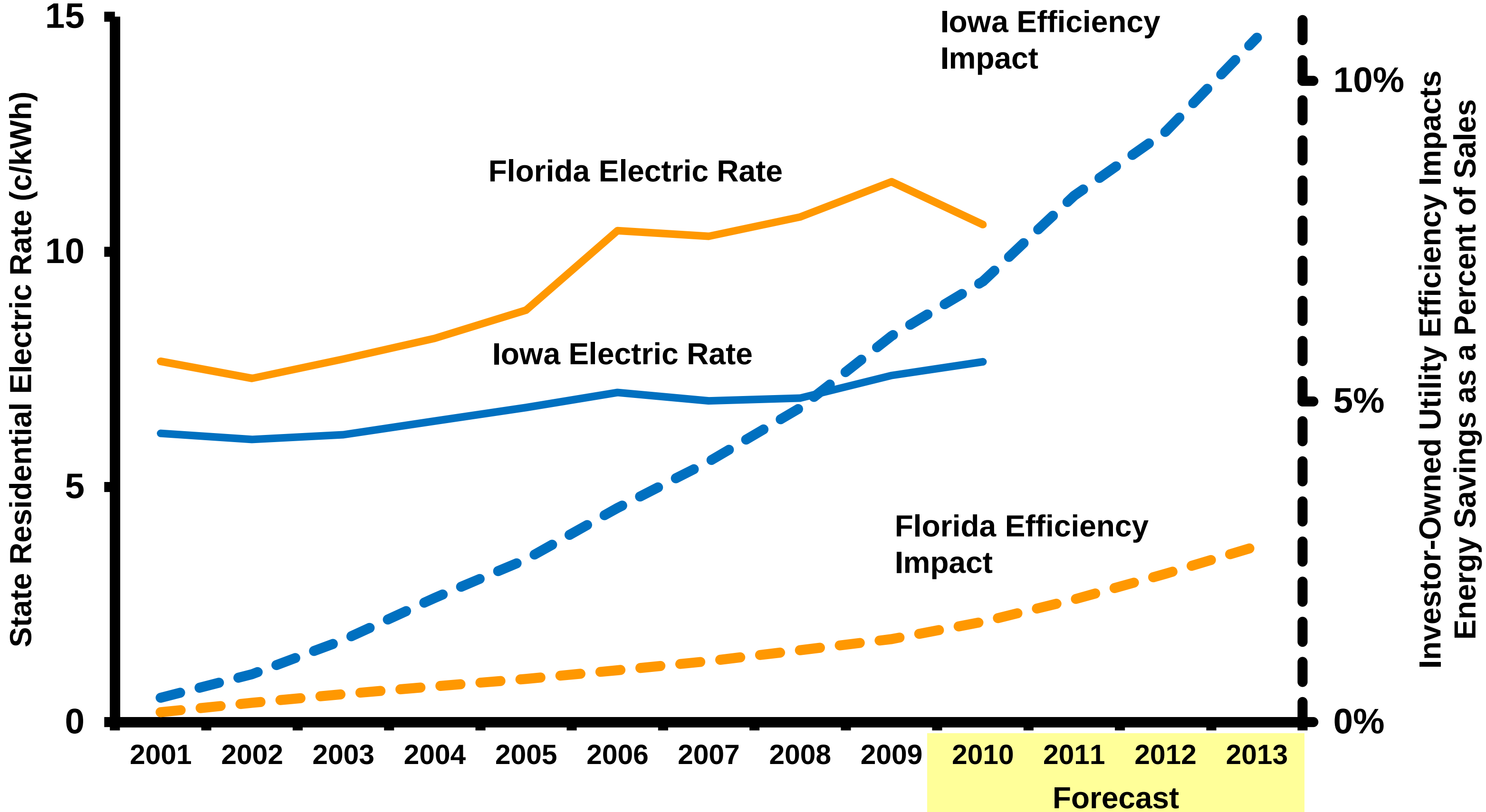


Source: Navigant Analysis of Achievable Potential[6] for Tucson Electric Power – Conducted using Navigant's Demand Side Management Simulator (DSMSim™) Model

Source: Welch, Cory (Navigant Consulting) and Richerson-Smith, Denise (UNS Energy Corporation), "Incentive Scenarios in Potential Studies: A Smarter Approach," *2012 ACEEE Summer Study on Energy Efficiency in Buildings*.

- Navigant study shows Florida's approach (% of incremental cost method) to evaluating the savings potential of energy efficiency overstates cost by as much as 50%
- Florida excluded measures with less than 2-year payback from goal-setting
- The 2-yr payback exclusion eliminates the first 14% of energy efficiency identified in the Navigant study - driving up average costs

Affordability & Economic Competitiveness:
Comparing Florida to a Leading State



Analysis of data from Iowa Utilities Board, Florida Public Service Commission, and the US Energy Information Administration. EIA data are up to date through 2011. Efficiency impact data have not been updated to reflect actual savings for 2010-11, but remain close to forecast.

If Efficiency is so cheap, why . . .?

- **Lack of information, awareness**
- **Lack of capital**
- **Utility regulation – financial disincentive for utilities to sell less energy**
- **Utility planning policy – energy efficiency not on level playing field with supply side**
- **Not using up-to-date programs and techniques**
- **Obstacles to participation**
- **Rental Properties present challenge**

***National Action Plan for Energy Efficiency* (July 2006)**

Issues Key to Efficiency

- **Rate Impacts**
  - Fairness / cross subsidization
  - Free market ideology
- **Utility Financial Incentives**
  - Shareholder return
  - Lost revenues
- **Resource Planning**
  - Value of energy efficiency
  - Priority of energy efficiency
- **Accountability**
  - Verification
  - Cost management
- **Program Planning**
  - Scope of programs
  - Customer engagement
- **Large Customers**
  - Resistant to rate impacts
  - Necessary for success

Conclusions re FEECA

- **Florida utilities don't effectively consider EE/DSM head-to-head with supply-side resources**
  - See Turkey Point and Levy certifications
- **Avoided costs are low (levelized) compared to cost of certified new generation (also levelized)**
- **Limited by study parameters, evaluation used flawed EIA data to benchmark Florida utilities. Conclusion that our costs are like in peer states is not reliable.**

– See ACEEE reports, incl.: Gold, Rachel and R. Neal Elliott. Where Have all the Data Gone? The Crisis of Missing Energy Efficiency Data. ACEEE Report Number E101. Feb-2010.

– Chris Neme, Energy Futures Group; Marty Kushler, ACEEE. Is it Time to Ditch the TRC? Examining Concerns with Current Practice in Benefit-Cost Analysis. 2010 ACEEE Summer Study on Energy Efficiency in Buildings. pp 5-299, 302, 308 & 309.

- **Cost-effectiveness – simplify to focus on Utility Cost Test**
- **Alternative to having utilities administer efficiency programs**
- **Need for transparent, least cost, integrated resource planning process which evaluates efficiency as a primary resource**
- **With integrated planning, much of the FEECA process could be replaced with meaningful accountability and oversight**

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Southern Alliance for Clean Energy

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Optimizing Energy Supply, Energy Conservation & Renewable Energy for Florida

Robert Scheffel "Schef" Wright
Partner, Gardner Bist Wiener Law Firm

Presentation to Energy Subcommittee,
Florida House of Representatives

January 23, 2013

Why This Is Really Important!

- Florida is Substantially Energy-Dependent
- Florida Depends on Imported Fuels for Approximately 97-98% of Our Electricity Supply
- Florida Depends on Imported Fuels for More Than 99% of Our Transportation Fuels
- 2012 Energy Conservation – 3.41% of Total Electricity Demand
- 2012 Renewable Energy – 1.27% of Total Electricity Supply

Why This Is Really Important! (Continued)

- 2021 Projections: Conservation – 4.00%
- 2021 Renewable Energy – 1.05%!!!
- SOURCE: Florida Reliability Coordinating Council 2012 Load & Resource Plan (State of Florida Forms 7.0 & 9.1)
- Adding in Self-Service Generation and Customer-Initiated Conservation Probably Gets Us to 9-10-12%, Still **Highly Vulnerable to Energy Supply and Price Disruptions**
- Consequences Example: Florida consumes just over 1 Billion MMBtu of natural gas per year -> a $1 price increase costs Floridians an extra $1 Billion that flows out of our economy

Optimizing Florida's Energy Supply-A Few Ideas

- GOAL: Optimize the Combination of Energy Supply Options and Energy Conservation to Meet Floridians' Energy Needs & Wants At The Lowest Cost
- Rely on Market Forces
  - "All-Comers" Auctions to Meet Needs – Utilities, Renewable Suppliers, Conservation Providers can all compete -> Winners get paid their bid prices, period!
  - Let Market Forces Work in the Private Sector – remove barriers to renewable energy deployment, esp. for third-party provision of renewable energy

A Few Ideas - Continued

- Recognize Value of Increased Energy Independence in All State Decision-Making, including:
  - Energy Conservation decisions
  - Power Plant decisions
  - Planning decisions
  - Florida Building Code
  - Legislation and rulemaking

Cost-Effectiveness Tests

- FEECA Report (page 9): Conservation costs 3.5 cents/kWh and $61/kw of capacity => We can do a lot more cost-effective energy conservation! (New Gas Plants - $1,000+ per kW, New Nuclear Plants - $8,000 to $11,000+ per kW)
- Societal Test – True Benefits and Costs to Florida
- Like Total Resource Cost Test, but Includes Other Important Values
  - Energy Independence – Keep Dollars in the Florida Economy
  - Risk Reduction/Avoidance
  - Environmental & Health Impacts of Alternatives
  - Enhanced Reliability of Customer-Sited and Florida-Based Renewables: Utilities Widely Use Customer Values for "Unserved Energy" between $5 and $20 per KILOWATT-HOUR (value to customers of lost productivity, lost food when can't run refrigeration, etc.)

Final Thoughts

- We Floridians Need to Do Everything We Can To Improve Our Energy Independence, Starting Yesterday!
- Get the Incentives Right, and Let Fully Transparent Market Forces Work!
- Questions?
- Thank you very much for the opportunity to address the Committee.

STATE OF FLORIDA
ENERGY CONSERVATION, SELF-SERVED GENERATION, AND RENEWABLE GENERATION, AS PERCENTAGES OF TOTAL ENERGY FOR LOAD, 2012 & 2021*

	UTILITY ENERGY CONSERVATION (PERCENT)	SELF-SERVED GENERATION (PERCENT)	RENEWABLE ENERGY GENERATION (PERCENT)	TOTAL (PERCENT)
2012	3.41	1.17	1.27	5.84
2021	4.00	1.19	1.05	6.25

	GIGAWATT-HOURS	GIGAWATT-HOURS	GIGAWATT-HOURS	TOTAL ENERGY FOR LOAD (GWH)
2012	8,518	2,918	3,174	250,095
2021	11,637	3,468	3,062	290,655

* SOURCE DATA: FRCC Forms 7.0 and 9.1 for the State of Florida, FRCC 2012 Load & Resource Plan, July 2012.

FRCC
Florida Reliability Coordinating Council, Inc.

2012
Regional
Load & Resource
Plan

July 2012

2012
LOAD AND RESOURCE PLAN
STATE OF FLORIDA

FRCC Form 7.0
HISTORY AND FORECAST OF ANNUAL NET ENERGY FOR LOAD (GWH)
AS OF JANUARY 1, 2012

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
								[(2)+(3)+(4)+(5)+(6)+(7)+(8)]
		ENERGY REDUCTION				CUMULATIVE CONSERVATION		
YEAR	NET ENERGY FOR LOAD	INTERRUPTIBLE LOAD	RESIDENTIAL LOAD MANAGEMENT	COMM./IND. LOAD MANAGEMENT	SELF-SERVED GENERATION	RESIDENTIAL	COMM./IND.	TOTAL ENERGY FOR LOAD
2010	247,276	0	2	0	2,253	4,215	3,474	257,220
2011	237,658	0	1	0	2,842	4,533	3,646	248,680
2012	238,645	0	7	7	2,918	4,751	3,767	250,095
2013	241,632	0	9	7	3,279	4,984	3,910	253,821
2014	245,318	0	10	7	3,470	5,218	4,039	258,062
2015	250,598	0	12	7	3,455	5,456	4,170	263,698
2016	254,549	0	13	8	3,471	5,689	4,302	268,032
2017	258,198	0	16	8	3,468	5,914	4,434	272,038
2018	261,484	0	18	8	3,468	6,140	4,562	275,680
2019	265,337	0	20	8	3,468	6,361	4,689	279,883
2020	270,297	0	22	8	3,471	6,550	4,796	285,144
2021	275,519	0	23	8	3,468	6,737	4,900	290,655
CAAGR (%):	1.61%							

2012
LOAD AND RESOURCE PLAN
STATE OF FLORIDA

FRCC Form 9.1
ENERGY SOURCES (GWH)
AS OF JANUARY 1, 2012

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				ACTUAL										
	ENERGY SOURCES		UNITS	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
(1)	FIRM INTER-REGION INTERCHANGE		GWH	6,928	5,051	2,955	3,058	2,517	1,297	102	-816	-1,440	-1,300	-1,517
(2)	NUCLEAR		GWH	22,828	20,576	27,924	30,540	36,392	37,855	38,356	36,437	38,245	37,834	42,044
(3)	COAL		GWH	56,014	50,634	55,276	56,849	57,135	59,572	60,807	61,757	63,550	62,946	63,874
	RESIDUAL													
(4)		STEAM	GWH	847	1,038	426	239	283	358	308	281	292	345	450
(5)		CC	GWH	0	0	0	0	0	1	1	1	1	3	0
(6)		CT	GWH	0	0	0	0	0	0	0	0	0	0	0
(7)		TOTAL:	GWH	847	1,038	426	239	283	359	309	282	293	348	450
	DISTILLATE													
(8)		STEAM	GWH	63	21	22	23	23	24	24	24	25	25	25
(9)		CC	GWH	130	34	44	31	30	35	34	33	39	46	52
(10)		CT	GWH	138	278	199	263	223	231	242	286	334	354	266
(11)		TOTAL:	GWH	331	333	265	317	276	290	300	343	398	425	343
	NATURAL GAS													
(12)		STEAM	GWH	9,612	5,956	3,878	4,713	4,848	4,913	4,682	4,919	4,330	4,382	3,722
(13)		CC	GWH	123,976	140,122	134,935	135,825	134,585	135,237	138,123	142,240	144,248	149,311	150,692
(14)		CT	GWH	3,655	2,886	2,767	2,434	2,540	2,064	1,850	2,014	2,097	2,409	1,857
(15)		TOTAL:	GWH	137,243	148,964	141,580	142,972	141,973	142,214	144,655	149,173	150,675	156,102	156,271
(16)	NUG		GWH	2,611	2,793	2,580	1,648	1,655	1,659	1,660	1,663	1,668	1,677	1,676
	RENEWABLES													
(17)		BIOFUELS	GWH	21	13	13	13	13	13	13	13	13	13	13
(18)		BIOMASS	GWH	737	611	579	995	1,002	932	930	930	930	932	930
(19)		HYDRO	GWH	8	21	21	21	21	18	20	21	21	21	21
(20)		LANDFILL GAS	GWH	334	367	608	585	601	579	540	413	346	321	316
(21)		MSW	GWH	1,655	1,875	1,867	1,851	1,866	1,868	1,451	1,451	1,451	1,456	1,451
(22)		SOLAR	GWH	116	284	294	303	313	322	324	327	327	329	327
(23)		WIND	GWH	0	0	0	0	0	0	0	0	0	0	0
(24)		OTHER RENEW.	GWH	28	3	4	4	4	3	4	4	4	3	4
(25)		TOTAL:	GWH	2,899	3,174	3,386	3,772	3,820	3,735	3,282	3,159	3,092	3,075	3,062
(26)	OTHER		GWH	7,957	6,082	7,240	5,923	6,547	7,568	8,727	9,486	8,856	9,190	9,316
(27)	NET ENERGY FOR LOAD		GWH	237,658	238,645	241,632	245,318	250,598	254,549	258,198	261,484	265,337	270,297	275,519