**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

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| 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 |
| In re: | Commission Review of Numeric Conservation Goals Gulf Power Company | DOCKET NO. 080410-EG |
| 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 |

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**AMENDED DIRECT TESTIMONY OF:**

**RALPH CAVANAGH**
**ON BEHALF OF THE NATURAL RESOURCES DEFENSE COUNCIL AND THE SOUTHERN ALLIANCE FOR CLEAN ENERGY**

DOCUMENT NUMBER-DATE
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FPSC-COMMISSION CLERK

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# DIRECT TESTIMONY OF:

# RALPH CAVANAGH

**Please state your name and business address.**

A. Ralph Cavanagh, 111 Sutter St., 20th floor, San Francisco, CA 94104.

**Q. On whose behalf are you testifying?**

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

**Q. Mr. Cavanagh, by whom are you employed and in what capacity?**

A. I am a Senior Attorney and Co-Director of the Energy Program at NRDC, which is a national non-profit environmental organization with more than 650,000 members. Since 1970 our lawyers, scientists and other environmental specialists have been working to protect the world's natural resources and improve the quality of the human environment.

**Q. Please summarize your qualifications.**

A. I am a graduate of Yale College and Yale Law School, and I joined NRDC in 1979. I am a member of the faculty of the University of Idaho's Utility Executive Course, and I have been a Visiting Professor of Law at Stanford and UC Berkeley (Boalt Hall). From 1993-2003, I served as a member of the U.S. Secretary of Energy's Advisory Board. My current board memberships include the Bonneville Environmental Foundation, the Center for Energy Efficiency and Renewable Technologies, the California Clean Energy Fund, and the Northwest Energy Coalition. I have received the Heinz Award for Public Policy (1996) and the Bonneville Power Administration's Award for Exceptional Public Service (1986).

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**Q. Why have NRDC and SACE intervened in this proceeding?**

A. NRDC and SACE applaud Florida's efforts in passing the 2008 Energy Act (HB 7135), which amended the Florida Energy Efficiency and Conservation Act ("FEECA"). Through its amendments, the legislature recognized the extraordinary potential for increasing energy efficiency in Florida and the tremendous benefits that will accrue to the State from doing so. NRDC and SACE have intervened in order to help ensure that the promise of this bill is achieved by setting strong energy efficiency goals and providing the framework that will encourage Florida's utilities to dramatically increase their cost-effective energy efficiency accomplishments. Our members are utility customers who place a high value on a clean and healthy environment, and our interest is in maximizing utility investments in cost-effective energy efficiency, which is both the cleanest and cheapest resource to meet customers' needs. Energy efficiency is the most cost-effective way to reduce greenhouse gas emissions and other pollutants associated with power generation, while also strengthening our economy, improving our energy security and reducing costs for consumers. All of these benefits were explicitly recognized by the legislature in its amendments to FEECA.[1]

**Q. What issues will you cover in your testimony?**

A. My testimony will focus on two issues. First, considering the recent amendments to FEECA, I will address which cost-effectiveness tests should be used in determining whether the elements of a utility's portfolio of energy efficiency programs are cost-effective. This is identified as issue 7 in the PSC Staff issues list. Second, I will address whether it is appropriate to provide performance-based incentives to utilities that achieve

[1] Fla. Stat. § 377.601 (2008).

significant levels of cost-effective energy efficiency savings. This is identified as issue 6 in the PSC Staff issues list.

## I. COST-EFFECTIVENESS TESTS FOR ENERGY EFFICIENCY MEASURES

**Q. Which cost-effectiveness tests do you believe are required by amendments made to FEECA in the 2008 Energy Act?**

A. The legislature required that the PSC "evaluate the full technical potential of all available demand-side and supply-side conservation and energy efficiency measures" and then set goals using two cost-effectiveness tests, articulated in amended sections 366.82 (3)(a) and 3(b).[2] First, in section 3(a), the legislature required the "Participant Test" when it required the PSC to consider "the costs and benefits to customers participating in the measure."

Second, in section 3(b), the legislature required the Total Resource Cost ("TRC") Test. This is readily apparent from the language of the amendment. Section 3(b) mandates that the PSC consider "[t]he costs and benefits to the general body of ratepayers as a whole, including utility incentives and participant contributions." TRC is the cost-effectiveness test that focuses on the "general body of ratepayers as a whole." It does this by considering the total costs of an energy-efficient measure, no matter who pays for it, as well as the cost of implementing the efficiency program, and comparing that to the benefit the measure provides to the participant and all the utility's customers including avoided generation, transmission, distribution, and environmental costs.[3] In addition, TRC, unlike several of the other tests, includes both utility incentives and participant

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[2] Fla. Stat. 366.82 (3) (2008).

[3] For a general discussion of the TRC test and what costs and benefits are included in its calculation, see *National Action Plan for Energy Efficiency,* July 2006, pp. 6-22 and 6-23. www.epa.gov/cleanenergy/energy-programs/napee/resources/action-plan.html.

contributions. It does this by considering the total cost of the measure regardless of how that cost may be divided between the utility and participants. The PSC Cost-Effectiveness Manual defines the TRC to be "based on the total costs of the program, including both the participants' and the utility's costs."[4] Indeed, the TRC test used to be called the "All Ratepayers Test." The TRC test is clearly the best and only proper interpretation of the law's requirement.

**Q. Does the legislative history of the 2008 Energy Act support your interpretation?**

A. It does. I am aware of two Legislative reports, both of which confirm this view. As described in the testimony of John D. Wilson, these reports are the Florida House of Representatives' 2008 Legislative Session End of Session Report and the House of Representatives Staff Analysis of HB 7135 for the Committee on Energy and the Environment & Natural Resources Council. Both of these reports paraphrase the language of 3(a) and 3(b) and explain, in parenthesis, the respective tests that language describes. For 3(a) it is the "(Participants test)" and for 3(b) it is "(similar to a Total Resource Cost test or TRC test but including the costs of incentives)." As I have noted, the TRC test as traditionally applied includes the costs of incentives, although the incentive cost is typically not separately broken out from the rest of the costs of implementing the efficiency program; rather, the incentive as well as the participant contribution are both included as part of the total measure cost.

[4] Cost Effectiveness Manual for Demand Side Management and Self Service Wheeling Proposals at 5.

**Q. Is use of the Rate Impact Measure test (RIM) to evaluate cost-effectiveness consistent with the 2008 Energy Act?**

A. No, it is not. The RIM test is not consistent with either of the tests required by the legislature. As its name implies, the RIM test addresses the impact of energy efficiency programs on utility rates. Nowhere in the amendments is there any discussion concerning impacts on rates. Moreover, RIM is incompatible with the language of both 3(a) and 3(b). Rather than focus on participants, as required by 3(a), or the "general body of ratepayers as a whole," as required by 3(b), RIM focuses exclusively on rates and particularly on potential impacts to non-participants. RIM is further inconsistent with 3(b) because it excludes both the participants' contributions and the participants' benefits, which come in the form of reduced energy expenditures and lower energy bills.

Even if the language were not as clear as it is, the amendment should be read in the context of the legislature's effort to effect a change in the way Florida's utilities and the PSC have evaluated energy efficiency measures in the past so that Florida can start taking advantage of cost-effective energy efficiency opportunities. The use of the RIM test in the past has significantly constrained investments in energy efficiency, leaving significant cost-effective opportunities untapped. Viewed in this context, the amendment makes perfect sense, because switching from the RIM test to the TRC test is absolutely critical if Florida is going to make sustained progress on energy efficiency.

**Q. Are you familiar with the arguments presented by some of the utilities for why they believe the RIM test is more consistent with the FEECA amendments than the TRC test?**

A. Yes, and I do not find them to be in the least bit convincing. First, Mr. Steve Sim, of Florida Power and Light, and Mr. James Dean, argue that TRC is not consistent with the amended section 3(b) because it "disregards incentives paid to customers."[5] This is simply not correct. As the PSC's Cost Effectiveness Manual indicates, TRC includes the "total costs of the program, including both the participants' and the utility's costs."[6] Mr. Sim and Mr. Dean are correct that when applying the TRC test it is not necessary to separately distinguish what portion of a measure cost is paid for by the utility incentive versus the participant. Because both are added together as part of the total cost, there is no need to separate them out. As the Cost Effectiveness Manual indicates, "[a]ll equipment costs, installation, operation and maintenance, and administration costs, no matter who pays for them, are included in" the TRC test.

As I noted previously, the RIM test cannot be reconciled with section 3(b) because it fails to include the participant contribution, as the legislature explicitly requires. Mr. Sim attempts to get around this problem by suggesting that the Participant Test can satisfy not only section 3(a) but also the "participant contribution" requirement in section 3(b), while RIM satisfies the other elements of 3(b).[7] Mr. Sim goes on to argue that if the Participant Test and TRC test are both used then participant contributions will be "double count[ed]." This assertion makes no sense. Mr. Sim has improperly

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[5] Testimony of James W. Dean at 23; see also Testimony of Steve R. Sim at 24.

[6] Cost Effectiveness Manual for Demand Side Management and Self Service Wheeling Proposals at 5.

[7] Sim Testimony at 24.

collapsed and intermingled the two separate cost-effectiveness tests required. Clearly, the legislature has required that the PSC consider the Participant test in section 3(a) and then, as a single, separate and independent test, the TRC test in section 3(b). Moreover, the fact that participant contributions figure in both tests is not double counting, because each test reveals cost-effectiveness from a different perspective (and in any event, the legislature has made the decision to apply them both). The TRC test evaluates efficiency programs from the perspective of all utility customers, and the Participant test adopts the perspective of customers participating in the efficiency programs; both provide valuable insight in designing, and evaluating whether to authorize, efficiency programs.

**Q. From a policy perspective, is the TRC or RIM test preferable?**

A. The TRC test is by far the superior test from a policy perspective. The PSC's objective should be to minimize the total cost to customers of receiving reliable energy services. The TRC test is the only cost-effectiveness test that takes this perspective; it evaluates efficiency from the perspective of all customers and includes the total costs (including both program and incremental measure costs) and benefits to customers.

By focusing on short-term rate impacts only, the RIM test eliminates numerous highly cost-effective efficiency measures that, if adopted, will reduce customers' energy bills, lower overall energy costs, and, by avoiding the cost of new generation, may also reduce rates over the long term. As Bob Trapp of the PSC explained in a presentation to the Florida Legislature last year, under the RIM test "[p]rograms with relatively higher kWh reductions will result in higher revenue losses and reduce the potential to be cost-effective under RIM."[8] As this correctly indicates, use of the RIM test <u>discourages</u>

[8] See Exhibit JDW 7 (attached to testimony of John D. Wilson).

adoption of most energy efficiency measures. Indeed, defenders of the RIM test are driven to a logical absurdity: a utility must reject even energy efficiency programs that deliver savings at no cost whenever the utility's marginal costs of generation dip below its retail rates.[9]

It makes far more sense from a policy perspective to focus not on *rates* but on total utility *bills*. After all, are customers really worse off if, for a constant level of service, their rates go up but their bills go down? Both our economy and environment are better off when total energy bills and total energy sales are reduced through cost-effective energy efficiency. The best test to determine whether an energy efficiency measure will achieve this result is TRC, which appropriately considers the total costs and total benefits of energy efficiency measures.

**Q. But isn't the RIM test needed to protect nonparticipants in energy efficiency programs?**

A. That is not an argument for withholding investment in energy efficiency; it's an argument for ensuring that opportunities to participate in efficiency programs are widely available. If, for example, Florida utilities were pursuing all cost-effective efficiency resources throughout their systems, then few if any customers would not be in a position to benefit within a reasonable time period. Nonparticipant equity only becomes an issue when all a utility is offering is minimal opportunities to participate in its efficiency programs; the remedy lies in substantially expanding the scope of the effort, not retrenching. Moreover, the PSC's objective should be to minimize the total cost to all

[9] This reflects the fact that, whenever marginal costs of generation are lower than retail rates, even a kilowatt-hour saved at no cost reduces utility revenues more than it avoids in generation costs, resulting in a potentially minute but negative short-term rate impact. The RIM test elevates short-term adverse impacts on utility revenues above both short- and long-term reductions in customers' bills.

customers of receiving reliable energy services. Just as the PSC does not make investments in supply-side resources hinge on the impact on "non-participants" in load growth, it should not make investments in cost-effective demand-side resources depend on having no impact on any customer.

**Q. But won't there be substantial numbers of nonparticipants, particularly low-income households, no matter how a program is designed?**

A. That issue figured prominently in the design of the Hood River Conservation Project, the most exhaustive test of energy efficiency potential ever conducted. In a demographically representative Northwest county in the mid-1980s, more than 90% of eligible households accepted utilities' invitations to contribute to a county-wide conservation resource, and participants were less wealthy, on average, than nonparticipants.[10] I helped design this project, which realized its goal of offering the region's utilities a blueprint for marketing energy efficiency effectively to diverse constituencies. After Hood River, utilities should not be questioning the feasibility of high participation rates. Moreover, in the ensuing two decades, utilities across the United States have accumulated a wealth of experience in targeting efficiency programs specifically to low-income customers and communities. I am sure that Florida's utilities would indignantly reject any suggestion that they could not sustain a leadership record on this score.

The potential universe of participants in utility-sponsored energy efficiency programs is substantially larger than that of nonparticipants. Under a properly structured schedule of efficiency program offerings, whether one is a participant would generally be

[10] See Cavanagh and Hirsh, The Nation's Conservation Capital, Amicus Journal (1987), p. 38.

a matter of personal choice; no one would be excluded by virtue of income, for example, and all major uses of electricity would be covered. At that point, a no-losers test becomes a "hardly-any-winners" test; energy efficiency programs are withheld from the many to avoid any impact on the few. And the system as a whole pays higher than necessary power bills. There is no perfect justice under any energy efficiency (or power plant) investment regime, but substituting widespread participation for no-losers tests is a distinct improvement from an equity standpoint. And of course there are no "nonparticipants" in the many systemwide benefits associated with cost-effective efficiency, which helps assure resource adequacy and reliable service for all while reducing environmental damage that all would find unwelcome.

**Q. Should steps be taken to assist low-income households in participating in energy efficiency programs?**

A. Absolutely. Florida utilities should make sure to design programs that will reach out to and provide additional assistance to those households. Importantly, these programs can be designed such that, even when additional assistance is provided, the programs remain cost-effective.

It is also useful to bear in mind that since use of the RIM test drastically reduces investments in cost-effective efficiency, low income households will suffer even more as they will, over the long run, end up paying even higher energy bills when increasing demand forces utilities to add additional expensive new capacity to the system. In contrast, under well-run programs using the TRC test, all households from low-income to well-off can lower their electricity bills even if there may be a slight near-term increase in rates.

**Q. How do you respond to Mr. Dean's testimony concerning past decisions of the PSC in which it relied on the RIM test to set energy efficiency goals?**

A. I believe the past decisions discussed by Mr. Dean are of very little relevance to the questions now before the PSC because those decisions were made prior to passage of the FEECA amendments in the 2008 Energy Act.[11] Prior to these amendments, the Commission had considerably more discretion to select the cost-effectiveness test it found most appropriate at the time. The PSC is now operating in a significantly different legal framework because the Florida legislature has, for the first time, provided the Commission explicit direction as to the cost-effectiveness tests it must use. To the extent that the past decisions endorsing the RIM test are relevant at all, it is to show the context within which the Florida legislature acted. And as I explained previously, this context supports my reading of the statute. Indeed, if, as Mr. Dean contends, the amendments require continued use of the RIM test, one would have to wonder why the legislature acted at all.

**Q. Is the utility's decision to set goals using the RIM test the only problem with the potential study completed by the utilities?**

A. No. Using the RIM test is one of the key problems but there are other serious problems with the potential study as well. I have reviewed the testimony of Phil Mosenthal and William Steinhurst and it is clear that the analysis of economic and achievable efficiency potential contains significant additional problems, such as the omission of any efficiency measures that have a pay-back of less than two years. These flaws are substantial and in many cases obvious and, in order to set strong goals and meet

[11] Dean Testimony at 6.

the law's requirement, the PSC must both require use of the TRC test and correct these errors.

## II. THE NEED FOR INCENTIVES TO UTILITIES FOR ENERGY EFFICIENCY

**Q. Do you believe that it would be appropriate to create performance-based incentives to encourage Florida Utilities to achieve significant levels of customer-owned and utility-owned energy efficiency?**

A. Yes, performance-based incentives are needed to help Florida capture all cost-effective efficiency savings and the accompanying economic and environmental benefits. But performance-based incentives should only be adopted if the PSC first sets strong efficiency goals. At present, the utilities have proposed goals of between zero and just over 0.1 percent of sales per year. These goals are appallingly low and their achievement would not merit payment of any reward.[12] However, if the PSC were to adopt more aggressive goals on the order of those recommended by Mr. Steinhurst and Mr. Mosenthal, I believe that it would be appropriate to establish an incentive that will allow utilities an opportunity to share in the net benefits that cost-effective efficiency programs provide customers and, in the process, encourage the utilities to excel at delivering energy efficiency programs that lower customer bills.

In fact, the extremely low goals proposed by the seven utilities shows that under the existing utility regulatory structure, the utilities have strong disincentives to support

[12] The following two reports by the American Council for an Energy-Efficiency Economy (ACEEE), show that the top states generally achieve savings of more than 1% of sales each year. Nadel, S., *Energy Efficiency Resource Standards: Experience and Recommendations,* ACEEE Report E063, March 2006. Kushler, M. et al, *Meeting Aggressive New State Goals for Utility-Sector Energy Efficiency: Examining Key Factors Associated with High Savings,* ACEEE Report E091, March 2009. See also N. Hopper, G. Barbose, C. Goldman and Jeff Schlegel, Energy Efficiency as a Preferred Resource: Evidence from Utility Resource Plans in the Western United States and Canada (Lawrence Berkeley Laboratory, LBNL-1023E, September 2008) (reviewing energy efficiency targets for major California, Northwest and Western utilities, all of which are well above the Florida utilities' proposed goals).

energy efficiency. The PSC's current regulatory regime creates two primary disincentives, which, perversely, financially harm utilities that lower customer bills through efficiency investments. First, traditional ratemaking ties utilities' recovery of authorized fixed costs to sales, such that efficiency programs that reduce sales jeopardize the utilities' financial health. Second, by investing in efficiency programs that reduce sales, a utility foregoes an opportunity to invest in supply-side resources and earn its rate of return on that capital investment. Under this structure, the PSC effectively penalizes utilities for saving customers money through energy efficiency.

The PSC can and should eliminate these disincentives, and create a positive incentive, for the utilities to capture all cost-effective efficiency savings. The incentive structure under which the utilities operate (meaning the collective impact of the incentives and disincentives they face) is a matter of utmost importance, because it guides the utilities' decision-making and ultimately their impact on society and the environment. Indeed, I believe that one of the fundamental goals of the Commission should be to create an appropriate incentive structure to help align the utilities' decisions and investments with the public interest. As regulated entities, the utilities' incentive structure is determined by the Commission. The goal should be to establish an incentive system under which the utilities benefit the most when they minimize the life-cycle cost of reliable service for customers. Two decades ago, the National Association of Regulatory Utility Commissioners (NARUC) urged its members to "ensure that the successful implementation of a utility's least-cost [investment and procurement] plan is its most profitable course of action."[13] The resolution framed the term "least-cost" over an

[13] NARUC, *Profits and Progress Through Least-Cost Planning*, at 57 (November 1989) (from Resolution in Support of Incentives for Electric Utility Least-Cost Planning, adopted July 27, 1989).

extended time horizon. Congress endorsed NARUC's objective in the National Energy Policy Act of 1992, for both electric and gas utilities, although the final decision remains with state regulators.[14] All regulation creates financial incentives and disincentives for the utilities, so the question is not *if* the PSC should provide incentives, but how to *align* the utilities' incentives with customer interests and the goals of providing affordable, reliable, and environmentally sensitive energy services.

Ultimately, the PSC should decouple utility revenues from sales to eliminate the first disincentive, and I understand that the PSC has begun to look into decoupling and I urge it to continue doing so. Revenue decoupling uses small, regular rate true-ups to enable utilities to recover their authorized fixed cost revenues (no more and no less) when actual sales deviate from forecasts, while continuing to serve customers with volumetric rates that provide an incentive for them to use energy more efficiently. This is an essential policy that must be adopted to unlock the full potential for cost-effective efficiency savings.

Revenue decoupling is necessary, but not sufficient, to truly succeed with efficiency. I also strongly urge the PSC to adopt a performance-based incentive mechanism to make energy efficiency a core part of the utilities' business model, level the playing field with competing supply-side investments, and encourage the utilities to meet or exceed energy saving goals. In order to align utility shareholder and customer interests, the performance-based incentive mechanism should give the utilities an opportunity to retain a portion of the net economic benefits their efficiency programs provide to customers. This type of mechanism, often known as a "shared savings"

[14] See 16 USC section 2621 (d)(8).

incentive, creates a "win-win" opportunity by encouraging utilities to maximize the net benefits customers receive. Incentives have been used effectively in numerous states around the country including Minnesota, California, and Ohio.[15]

I would not recommend that the PSC determine a performance-based incentive mechanism as part of this proceeding. Here, the PSC should focus on setting robust energy efficiency goals. Once those goals are in place, I suggest the PSC undertake a separate proceeding to determine the incentive mechanism. By combining aggressive energy saving goals with revenue decoupling and performance-based incentives for energy efficiency, the PSC can enable utilities to become full partners in this effort to reap the tremendous environmental and economic benefits of increasing our energy efficiency.

**Q. Does this conclude your testimony?**

A. Yes.

[15] For a detailed discussion of energy efficiency incentive mechanisms, see National Action Plan for Energy Efficiency, *Aligning Utility Incentives with Investments in Energy Efficiency*, November 2007, www.epa.gov/RDEE/documents/incentives.pdf.