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Via electronic mail

These comments are submitted on behalf of Environmental Defense, as follow-up to the energy efficiency workshop conducted by the Public Service Commission (PSC or Commission) in Tallahassee on April 25th. Environmental Defense has been actively involved in Florida energy and environmental policy, was an invited stakeholder for Governor Crist's Climate Change Task Force, and is currently actively participating in the current process to develop a statewide climate change action plan by the fall of 2008.

During the April 25th workshop, several presentations, from a diverse cross-section of representatives, emphasized the energy and economic benefits of energy efficiency. Each also described the continued and cumulative lost opportunities that have occurred as a result of the techniques employed by the PSC to evaluate potential energy efficiency measures.

Providing the punch line first, we stress the following points:

- Energy efficiency (EE) programs today achieve savings of 1% or greater of electric sales (approaching 2% in a few states), at an average cost-effectiveness of 3-3.5c/kWh. This cost is 25-40% less than Progress Energy's fuel adjustment charge for residential bills (see footnote 3);
- EE is the most cost-effective resource available to Florida, costing much less than the cost of new generation[1]; and
- EE benefits persist, are cumulative, and can be measured with precision and accuracy using internationally accepted protocols that monitor and verify performance

We echo the recommendations made by workshop speakers that the PSC cease use of the RIM test, and instead evaluate energy efficiency measures using tests that are used in nearly every other state, such as the total resource cost (TRC) test and the utility test. If RIM is used at all, it should only be in conjunction with the two additional tests mentioned above, to illustrate the amount of additional energy and economic savings that will be realized from implementation of all measures that pass the TRC and utility tests. (or conversely, to illustrate how many MWh and dollars would have been lost if RIM was used). Our comments here address:

- Concerns raised regarding how other EE tests may not account for cross-subsidization;
- How Florida has missed opportunities to save GWh of energy due to use of RIM; and

[1] New coal generation costs are 9-11c/kWh and rapidly climbing

- How a thoughtful and strategically planned EE program produces savings at base and peak hours, benefiting customers in all rate classes.

1. Use of RIM, Cross-subsidization and Pareto Optimality

A. Cross-subsidization between sectors/classes.

Industrial customers often comment about having to pay for demand side management (DSM) that they supposedly cannot benefit from, perhaps because they are convinced that they have already installed all the cost-effective DSM. Despite what these customers say, there is significant and untapped DSM potential in the industrial sector. Rather than complain about DSM, these customers should recognize the significant improvements that continually occur, and take advantage of them.

Another argument revolves around how the industrials also save even if they don't participate. First, they benefit by not needing to support new transmission investment (sometimes distribution, too, but usually not) and new generation investment. Second, they benefit by the reduction in the marginal cost of power when the dispatch stack is lowered. This is called Demand Reduction Induced Price Effect (DRIPE). DRIPE applies to the entire system, so industrial customers benefit whether they participate or not. Third, they benefit by reduced return on equity and improved bond ratings for utilities that require less investment and incur less risk associated with new investment (planning risk, project risk, environmental risk, etc.), particularly for utilities with poor credit ratings already. Fourth, they benefit in two ways from reduced natural gas clearing prices: once via lower costs for the electric utility and once when they buy gas for their own combustion use or as feedstock.

B. Cross-subsidization between participants and non-participants

(For example, between one residential customer who participates and thereby benefits and another residential customer who does not (or can not) participate and there "looses".)

Supporters of continued application of the rate impact measure (RIM) test argue that this test is fair and accurate, as it assesses the impacts to customer's rates that would occur from implementation of a particular program. RIM concludes that customer rates will increase if utility sales are less than the total utility costs of implementing the program. By definition this conceptually eliminates virtually all energy efficiency measures. The only measures that typically pass RIM are those directed at peak hours, such as direct load control programs. RIM supporters also argue that non-participants may receive benefits from energy efficiency programs that are paid for by participants.

The RIM test results conclude that if non-participants rates increase at all from the proposed measure, the measure fails, even if total system costs are lower. RIM also fails to consider that a non-participant in one year may well participate in another year.

To appreciate the narrow lens of the RIM test, consider if the same rationale used by RIM to evaluate demand reductions were instead applied to measures that *increase* demand. If electric rate increases are caused by escalation in industrial demand, applying the RIM test would conclude that only those participants who caused the demand *increase* should pay for the rate increases. History proves otherwise, since residential consumers rates also increase when demand is driven by increased commercial and industrial demand. In another example, if RIM were applied to decisions about whether or not to approve new generating plants, only those plants that reduced electric rates would be approved, and few if any plants would ever be constructed.

C. RIM represents Pareto optimality.

This is the essential concept behind the RIM test. If you can implement a policy that makes some people better off and no one worse off then you can know that it is a good policy. But if the policy makes some people better off and some others worse off (even if it is only a few people who are worse off and they are only a little bit worse off) then you should not do the policy (because you can't know that it is better than not doing the policy). This is, obviously a very restrictive criterion. If you apply this Pareto (or "no losers") test rigorously then you would never implement any policy.

Supporters of RIM argue that is represents perfect optimality, perfectly efficient markets, etc. RIM supporters also argue that “well, if energy efficiency is so cost-effective, why do you need incentives? Why wouldn’t people just go purchase these measures on their own? This is sort of an "eye for an eye leaves the whole world blind” or "tragedy of the commons" flaw in the anti-DSM argument. The Pareto optimality argument does not apply because its assumptions never exist in the real world. There are no perfect markets, or no capital constraints. And, the same people who argue against incentives for energy efficiency, also argue in favor of supply side subsidies, such as to nuclear and other large-scale generation, which amount to orders of magnitude larger subsidies than are considered or proposed for any demand side programs.

D. Renters Paradox.

Another barrier, especially important to legislators who have a low income or small business constituency, is the renter’s paradox, also referred to as split-incentives. Here, the landlord owns the building and the appliances, but the renters (or lessees) pay the energy bills. The landlord has no incentive to pay a slightly higher initial cost to purchase the more efficient appliance; the renter is stuck paying the bill for the inefficient appliances. This paradox applies to other sectors beyond low- and fixed-income. In fact, many studies have shown that severe financial, institutional and informational barriers restrict the ability of customers, including many large commercial and industrial customers, to invest in even the amount of EE that would be efficient for them, much less what would be societally optimal. Commercial buildings are often constructed by one company, and then flipped to another once the building is completed. The construction firm is not going to have to pay for the energy bills, so it purchases the cheapest possible equipment and fixtures to maximize their profits. The building occupant is stuck paying for the high bills. Any subsequent energy improvements that are made are much more costly since they have to be retrofitted.

Non-participants, even in the residential and small business sectors, benefit from most or all of the side benefits listed above for large C&I customers and generally need do very little to offset any RIM test losses even on a cash bill basis. For example, one study at a Washington electric cooperative in the mid 1990s showed that a residential (non-electric space heat) non-participant only needed to install one CFL to offset all the RIM test losses of the Coop's entire DSM program.

2.Missed Opportunities

Florida's reliance on the RIM test has resulted in escalating and expensive bills for all ratepayers. The RIM test takes a snapshot based on evaluations for a particular year, and it does not account for the cumulative benefits that accrue from energy efficiency measures, nor the exposure to increased risk and market volatility from supply side investments. To illustrate the degree to which Florida's reliance of the RIM test has missed opportunities and created unnecessary increases in customer bills, a simple evaluation was performed to compare Florida with two other large states, both of which also have a significant industrial base.

The table below provides electricity sales, population and consumption per capita for Florida, California and New York.

State	Sales (MWh) [2]	Population[3]	MWh per capita
Florida	224977011	18089889	12.43
California	254249507	36457549	6.97
New York	160170303	19306183	8.27

Florida's per capita consumption is 50% higher than New York's and 78% higher than California's, states that both have had successful energy efficiency programs for decades. California well understood what the future expected consequences would be from an inefficient energy path. As a result of embarking on a long-term commitment to energy efficiency, California has maintained per capita consumption flat since the mid 1970s, saving consumers there billions of dollars annually, with cumulative savings are in the tens of billions of dollars.

Case	Sales (MWh)	Estimated ratepayer cost (@ 10c/kWh)[4]	Ratepayer savings (annual)
Reference	224,977,011	$22.5 billion	N/a
Florida = New York	149,603,382	$15.0 billion	$7.5 billion

[2] From EIA forecast, 2006 data

[3] US Census Bureau, 2006 population estimate

[4] Progress Energy latest rates: 5.46c/kWh for 1-1000 kWh, 6.46 c/kWh for all usage >1000 kWh. Plus fuel adjustment charge 4.278 c/kWh for 1-1000 kWh, 5.278 c/kWh for all usage above 1000 kWh. Rounded to 10 c/kWh total for calculation purposes. Residential rate class used. Other rate classes would produce different results, but do not change the underlying principle.

Florida= California	126,086,526	$12.6 billion	$9.9 billion

If Florida's energy performance equaled that of New York's, Florida ratepayers would save over $7.5 billion annually, based on current electric rates. Meeting California's performance level would save Florida consumer's almost $10 billion annually. Achieving this level of performance is possible, using measures available today. In effect, Florida's continued use of RIM has lost energy efficiency opportunities that have cost Florida's ratepayers billions of dollars annually.

3. Savings at base and peak hours

Energy efficiency reduces system wide electric prices at base and peak hours. Several studies conducted recently support this conclusion. Studies completed on electric EE, and on natural gas efficiency describe the beneficial system effects that are realized through DSM programs and how they persist for the life of the installed measure.

An excerpt from the Brattle study illustrates the point for electric EE[5]:

"*A key insight affecting the design of this study is that resource cost savings persist over time, but market price impacts can be expected to diminish as generation suppliers respond to depressed prices, for example, by delaying their construction of new generation or accelerating their retirement of existing plants. The magnitude and duration of the market price impact depends on the rate at which suppliers respond to changes in market conditions as well as on the tightness of the market over the next several years.*

With reduced peak loads, customers do not need to buy as much capacity; indeed less generation capacity must ultimately be built to serve a flatter load shape. Customers also do not need to buy as much energy during high-priced periods. Reducing the quantity of capacity and energy that must be produced saves money even if wholesale prices remain unchanged. This kind of savings is often considered a "resource cost savings" because the total cost to serve load is reduced. Customers save commensurately whether they are in a cost-of-service regulatory regime, or in a market-based regime. Assuming a competitive wholesale market, suppliers can be expected to offer capacity and generation based on their costs to serve and to pass changes in their costs onto customers. If the wholesale market is not fully competitive, it is likely that savings would be even greater because DR enhances market competitiveness."

Even small reductions in demand lower the energy price. This effect is especially revealed during peak demand periods, when high cost generators operate in order to help meet demand. The supply curve is steepest at the last few hours that coincide with peak electric demand. So, a combination of an aggressive demand response program for peak periods, coupled with sustained energy efficiency measures result in reducing both peak and base loads.

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[5] Quantifying Customer Benefits from Reductions in Critical Peak Loads from PHI's Proposed Demand-Side Management Program, The Brattle Group, September 21, 2007. Prepared for Pepco Holdings Inc.

The same beneficial effect has been studied on programs that improve natural gas energy performance, as noted in this study completed for NYSERDA in 2006[6]:

"*The analysis included an estimate of the downward pressure on commodity prices from reduced demand by the program scenario savings. Because gas supply is somewhat constrained and expected to remain so, small reductions in demand can result in small reductions in the market clearing commodity price, resulting in significant overall benefits to all gas consumers beyond those captured from program participants directly through reduced energy use. The total consumer commodity cost savings from the program scenario have two components: 1) the savings resulting from lower commodity prices (price effect); and 2) result of lower commodity usage because of energy savings (energy savings*). "

Conclusion

Embracing energy efficiency as a resource of first choice offers Florida the choice to get off going down a path that surely leads to higher uncertainty and risk to all ratepayers. Continued reliance on fossil fuel generation and imported energy exposes Floridians to high electric and natural gas prices and their volatility. Energy efficiency should be considered like a bond, as part of any diverse investment portfolio. Its value is stable; its performance persists and is measurable and verifiable. Transitioning Florida from the RIM test to others requires the support and commitment of all ratepayers, but all ratepayers, even non-participants, will benefit from lower system costs.

Energy efficiency also offers Florida many other benefits, in addition to those mentioned here. Florida can create skilled jobs to install and service energy efficiency measures. These jobs are hard to outsource and offer an alternative to relying on the tourist industry and its fluctuations. Florida can also integrate energy efficiency into its environmental program, taking credit for reductions in air and water pollution that result. Energy efficiency will also play an important role in helping Florida to meet its state greenhouse gas emissions reductions that are anticipated as part of its climate change action plan.

Thank you for this opportunity to provide comment. We look forward to working with the Commission in the future to help implement progressive changes that will improve Florida's economy, its energy security and environment. Should you have any questions, please contact me at 941-309-5399.

Sincerely,

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[6] Natural Gas Energy Efficiency Resource Development Potential in New York, Final Report, October 31, 2006. Prepared for New York Energy Research and Development Authority. Prepared by Optimal Energy, ACEEE, Vermont Energy Investment Corporation, Resource Insight and Energy and Economic Analysis

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