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ATTORNEYS AT LAW

May 20, 2008

Mr. Mark Futrell
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

In re Energy Efficiency Workshops:

Dear Mr. Futrell:

Thanks for letting FIPUG participate in the parallel renewable portfolio and energy efficiency workshops you have been conducting for over a year to deal with dramatic new issues facing the power industry.

At the April 25th workshop on energy efficiency FIPUG responded to staff's identified issues and made the following observations:

1. **Utilities which control conservation programs focus on peak shaving not reduced consumption:** They deemphasize the other three directives in the 1981 Florida Energy Efficiency Act, §366.82 Florida Statutes (FEECA). The deemphasized provisions are: to promote cogeneration (1); to increase the conservation of expensive resources, such as petroleum fuels, and to reduce and control the growth rates of electric consumption.
2. **The Rate Impact Test (RIM) discourages conservation measures that result in less electrical consumption.** Recently developed and expanded utility cost recovery clauses provide utility rate increases for the explicit purpose of recovering the costs of unanticipated and volatile costs. The RIM test can be used to offset the benefits of fuel savings from reduced consumption by off setting the savings with lost fuel charge payments the conserving customer would have paid. This should not be. It doesn't cause a rate increase to other customers. Ironically cogeneration, a program explicitly directed in FEECA, is not considered cost effective by utilities. Mr. Lilly pointed out that his company's cogeneration saves his utility about \$14 million a year in fuel costs. RIM also rules out other programs that reduce consumption of expensive resources and control the growth rates of electric consumption. It might be argued that only the conserving customer sees the benefits, but TABLE 2 below shows why all customers benefit.
3. **Failing to reduce the growth rate of electric consumption at the same time utilities were avoiding the construction of new power plants may have caused the unintended result of creating a capacity crisis.** The utility 10 year site plans disclose that presently the 10 largest utilities in the state – which supply 90% of the state's power - do not have sufficient capacity from their own generation to meet the forecasted 2008 summer demand. Capacity is not planned to meet demand until 2016. Heretofore, except in 1999-2000 limited capacity has not caused a problem because utilities can buy

1 "cogeneration" was changed to "demand-side renewable energy systems" For purposes of this letter I use cogeneration. The legislative intent appears to be the same.

power from one another, from non utility generators and they can contract with customers to agree to accept lower quality non firm service.(2) FIPUG raised the caveat that there is a limited amount of power that can be transmitted from out of state. Over a million residential customers, major contributors to DSM, can demand that their firm service be restored on short notice. If the peak occurs simultaneously on a cold winter day or exceptionally hot summer day, intrastate sales will fail. Even a casual observer might conclude that it may be imprudent for utilities rely on power from other utilities when these utilities might have insufficient capacity to meet their own native load. It must be noted that only 19 of the state's 56 public utilities produce power.

4. Finally FIPUG pointed out that building expensive new power plants may not work because Florida Utilities already have among the highest monthly residential bills in the nation and the highest industrial and commercial rates in the region. A new law requires customers to begin paying for proposed nuclear plants before they are in use and useful service. They will be asked to pay more to buy some electricity produced from renewable energy. With higher rates customers may begin to conserve without further incentives, then what?

Henry Lilly, the energy manager of a large industrial consumer, explained that his company and other similarly situated companies would engage in far more energy efficiency measures. - if given the proper incentives. His company decided to supply its own electricity because building the generator passed the Participant Test and the Total Resource Test. It could reduce electrical consumption more by investing in more cogeneration than it needs for its processes and more expensive energy efficient motors and other equipment, but although these additional investments may pass the Total Resource Test they flunk the participant test and the RIM test. These emission free/carbon free, fossil fuel reduction opportunities that customers could initiate are being lost to the state.

The comments in this paper will;

A. Focus more specifically on the three largest utilities in the state to see what we can learn about the importance of non firm service to the reserve margin and highlight the fuel cost that can be avoided by effective conservation.

B. Explain why utilities are reluctant to reduce sales.

C. Endorse a simple successful way to insure that utilities are not disadvantaged by energy efficiency on the part of customers.

D. Recommend a program to improve the RIM test and recommend a method to obtain the lowest cost renewable energy.

A. **Non firm service and DSM are currently used by utilities to satisfy regulators that they have an adequate reserve margin.**

The state's three largest IOUs are FPL, Progress Energy (PEF) and Tampa Electric (TEC). The following information is extracted from their most recent ten year site plans filed April 1, 2008.

The 2008 capacity in the following table is expressed in megawatts (MW)

2 Thousands of residential customers returned to firm service during this period.

TABLE I

	Installed Capacity	Import	QF	Renewable	Available Capacity w/o DSM	Total Demand	Installed Capacity Reserve	Reserve w/o Non firm	Reserve with non firm	Non Firm
FPL	22,149	2,255	738	158	25,300	22,356	-1%	13.17%	21.70%	1908
PEF	9,160	2,087	173	178	11,598	10,646	-16%	8.94%	21.20%	1305
TEC	4,202	709	64	<1	4,975	4,530	-8%	9.82%	18.23%	381
	35,511	5,051	975		41,873	37,532				3594

Here are some things we can learn from this table:

At the time of summer peak none of the big three could meet their native customer load from installed capacity.

Rule 25-6.035 FAC requires Florida Utilities to maintain an adequate reserve margin of 15% (not 20%) none of the top three utilities can meet this goal from available supply reserve including firm purchases. They must rely on managing the load of non firm customers. (3)

The bad news about using DSM to postpone the construction of more efficient power plants has resulted in the continued operation and maintenance of older inefficient power plants. 10 year site plans disclose that 4,527 MW of FPL’s installed capacity is over 35 years old. 1,354 MW of PEF’s capacity falls into this aged category as does 808 MW of TEC’s system. In all at least 18.8% of the installed fossil fuel burning capacity owned by the three largest utilities in the state is and has been obsolete. Utilities recognized the inefficiency of their aging power plants shortly after congress enacted the Energy Policy Act of 1992. If they were going to be required to compete with more efficient Independent Power Producers they claimed entitlement to rate increases to recover their “Stranded Investment.” That was 16 years ago. The RIM test does not take prolonging inefficiency into consideration. While they were avoiding new plant construction with their peak shaving conservation programs and using RIM to discourage customer energy efficiency overall efficiency was postponed. Inefficiency is not a problem for utilities if they can use the fuel cost recovery clause to make customers pay the cost.

The good news is that PEF is currently repowering its Bartow units. FPL announced plans to refurbish the Riviera and Canaveral plants, both project substantial fuel savings from the new efficiency. (4)

Non firm/DSM service enables each of the utilities to maintain reserve capacity to meet the demand of all of their wholesale and retail customers by calling on DSM when needed. DSM

3 People seem to have forgotten that a 20% capacity margin was originally designed to restrict the size of the utility rate base. The difference between 15 and 20% is not a problem today, but may be if utilities can refuse to buy from competing sellers and the FPSC disregards the concept of refusing to require customers to pay for regulated utility investment that is not in “use and useful service.” The legislature may be headed in this direction on the advice of utility lobbyists, but electric customers will straighten legislators out before long.

4 The 2008 Energy Bill is on the Governor’s desk after unanimously passing the legislature one of the new provisions amends section 366.82(9) F.S. to say *“(9) The commission is authorized 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 shall be established by the commission through a limited proceeding.”* Presumably FPL and PEF will not seek rate increases to reward them for their belated response to the need for energy efficiency, but if they do I will recommend that FIPUG oppose the increase.

has become an integral tool for future planning. This tool needs to be better used. New customer and timely utility energy efficiency needs to be encouraged not discouraged.

Cogeneration is one program that failed RIM, but still results in large amounts of fuel cost savings for customers. The 2008 estimated fuel cost of each utility taken from testimony in Docket 070001-EI set out in the following table is stated in \$/MWH.

TABLE 2

Utility	Fuel cost generated power	Purchased power	Economy power	QF purchases	Average 2008 fuel factor
FPL	\$55.10	\$26.21(5)	\$71.10	\$31.85	\$54.70(6)
PEF	\$49.45	\$43.05	\$72.21	\$34.55	\$50.07
TEC	\$48.09	\$93.75	\$78.62	\$44.15	\$53.58

This interesting table shows the significant value to other customers when the utility purchases power from QF's. The RIM test using lost fuel clause revenue to offset the benefits of the lower fuel cost QF's provide denies all customers the benefit of this valuable resource encouraged by FEECA. Normally unless the industrial customer can justify the cost of generating the additional power exclusively from its own reduced electric bill or is paid enough for the surplus electricity to justify the capital expense the customer won't do it.

TABLE 2 also shows that if the other conservation programs the RIM test discourages offset expensive purchased power or economy purchases consumers are indeed disadvantaged.

In Summary Today DSM/non firm service is an integral component of utility operations.

They must rely upon it to meet their required reserve margins. It supplies needed power supply. It complies with the statutory requirements for consumption reduction and it serves to reduce fuel cost.

B. There is a good reason why utilities are reluctant to encourage customers to reduce consumption.

It all began about 100 years ago. Edison electric companies made their money by selling light bulbs and dynamos that provided the power. Power couldn't be transmitted over long distances so there were many dynamos to sell. Edison's records show that he priced his bulbs to compete with gas lighting to lure people away from that market. Competition with gas kept a ceiling on the price of light bulbs.

Shortly after the advent of electric power, the technology for electric metering was invented. Nikola Tesla invented electric motors and patented alternating current which could be used to transmit electricity over long distances. George Westinghouse bought the patent. The idea for the central power plant was born. It was promoted by Samuel Insull, Edison's former secretary and father of the *modus operandi* of the modern investor owned utility. The central power plant grew in size to gain economies of scale. Load factor was improved by developing electric trolley cars, electric motors and electric appliances, such as, the refrigerator, iron, stove, and toaster manufactured by Edison's former company General Electric. The promoters said that women

5 Purchased mostly from Southern Company and SJRPP coal burning power plants under expiring contracts.

6 Before true up

would never have to work again, but unfortunately with the new labor saving devices husbands fired the maids. Women needed to work harder at home, some women even needed to work outside the home as well to raise the money to pay the electric bill. (7)

Corporations borrow money based upon their revenue stream, but to secure and keep equity investors it is necessary to project earnings growth. Cost reductions by regulated utilities may result in unwanted rate reductions. The only viable avenue for earnings growth is increased sales. It is not implausible to presume that the idea of reduced consumption is abhorred by utility managers. Distributed generation and the requirement for utilities to buy power rather than produce it will result in reduced growth.

From the following table gathered from EIA data you can get an idea of the impact on electric sales from increased energy efficiency on the part of all customers. It shows why industrial energy efficiency is a very big deal.

TABLE 3

Utility	Average KWH Annual Residential Consumption
FPL	13,968
PEF	13,980
TEC	15,168

The impact of energy conservation on utilities can be calculated by determining the amount of lost residential sales. The generally accepted rule of thumb is one MW of capacity will serve 1,000 residential homes. This is not correct for Florida where the average residential customer consumes between 14,000 and 15,000 kwh/ year. When Florida is compared to California or the northeast where the annual consumption is less than half of this amount we see that more capacity is needed. In Florida one MW of capacity probably serves the consumption needs of 500 residential homes. See <http://www.utilipoint.com/issuealert/print.asp?id=1728> for a good explanation. The answer is also different for different types of generators that don't operate 100% of the time, such as, wind, solar and gas turbine units. Mr. Lilly's cogenerator operates 96% of the hours of the year. If TEC buys an additional 30 MW of emission free, carbon free power CF might be able to provide, it would meet the energy needs of over 16,000 average residential consumers. That will benefit all customers, but hinder utility earnings growth. Utilities don't promote diversion of power from their central power plants. They need the sales to cover the fixed costs attributable to those plants.

The .85 MW savings provided by Mr. Lilly's more efficient pumps currently displace the power required for 310 homes on the PEF system. If the pumps will displace 5,100 MWH of economy power that PEF says will cost \$72.21/ MWH this year, there will be a fuel cost savings of \$368,271 for the benefit of all customers in 2008. The savings continue for the life of the pumps. Under RIM lost fuel charge revenue will more than offset the savings. Reduced base rate revenue loss combined with other cost recovery revenue will put additional nails in the coffin. Too bad for customers. Savings from pumps at a mine are a terrible thing to waste. The truth is as long as sales are growing overall for a utility there will be no adverse base rate impact. Base rates won't go up, fuel costs will go down. The question is how to deal with other cost recovery items. If capacity doesn't have to be purchased the savings should offset revenue loss, if environmental costs are properly allocated between consumption and capital cost there is no

7 John F. Wasik, *The Merchant of Power* p 127 Palgrave MacMillan 2006

harm there. PEF and FPL moved to proper environmental cost allocations in their last rate cases.

C. **Proper rate design will protect utilities from reduced consumption losses.** In his December testimony Paul Sotkiewicz, the Director of Energy Studies at the University of Florida's Public Utility Research Center recommended a simple plan that would protect the utilities against lost profits and customers against rate increases arising from reduced consumption. He suggests designing rates so that fixed costs are recovered through a basic service charge, variable costs would be collected through the consumption charge. Wasteful use could be penalized as it is now. This is not a novel idea rental car companies and FPSC regulated water and sewer companies use it now. It would have the added benefit of no longer subsidizing the electric cost to serve transients who leave their property vacant more than half the year.

D. **Recommendations for RIM revision.** TEC's Mr. Bryant under the pseudonym "unidentified speaker," recommended the framework of an approach in his April 25th response to a question. His remarks from page 189 of the transcript are attached. FIPUG agrees with Mr. Bryant that it is time to have the Commission address what revenue means in the RIM test.

The undersigned also believes FIPUG would agree with Mr. Twomey, the advocate for AARP, who suggests that there should be competition for renewable energy purchases for the benefit of all consumers. Industrial energy efficiency and renewable resources are indeed delectable low hanging fruit. Let the low cost providers supply the renewable energy resource in Florida while the more expensive technologies mature under programs already in progress in other states.

Sincerely yours,

John W. McWhirter Jr.

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EXTRACT FROM APRIL 25, 2008 ENERGY
EFFICIENCY WORKSHOP TRANSCRIPT

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1 for new supply-side, there is no comparison to a matrix or a
2 complete comparison to efficiency measures. So there's a lot
3 of -- I have a lot more questions, I guess, than answers, but
4 thank you for the opportunity to ask them.

5 MS. HARLOW: I have a question for Charlie, or some
6 of the other IOUs, and I see that he jumped when I said his
7 name, but I have a pretty basic question. We keep talking
8 about lost revenues, lost revenues. I understand why lost
9 revenues are in the RIM test. I understand your point about
10 the shift of revenue requirements between participants and
11 non-participants, but if you look at the Commission's manual
12 for cost-effectiveness tests, how we calculate lost revenues is
13 not defined. The specific rate that the utility is to use, at
14 least in my reading, is not defined.

15 And so my question to the utilities is, what rate are
16 you using in your calculation of lost revenues? Are you using
17 full retail that includes cost-recovery clause, or are you
18 using simply a base rate?

19 UNIDENTIFIED SPEAKER: I think I drew the short straw
20 on that one. Tampa Electric has been utilizing the base rate
21 component for lost revenues for a number of years. There are
22 debates over what is the appropriate number to put in for lost
23 revenues. Should there be fuel put in there, should there not
24 be fuel put in there. When the current methodology that we
25 employ now -- and I say we, meaning what was promulgated by the

1 rule and then subsequently given to the utilities to use in '90
2 or '91 -- one of the debates at that time, and Roland Floyd was
3 here at the time, was, you know, how do you calculate lost
4 revenues? And you may recall a fellow by the name of Jerry
5 Kordecki. He and I came up, and we talked with Roland and some
6 folks and said we really think it just ought to be base rates.

7 Actually, we hedged on moving toward just the fixed
8 component of base rates, because if there was a variable
9 component we thought maybe that ought to be thrown out. But we
10 sort of settled on just the base rate component itself. So
11 what does that do for you? It helps the RIM test. We all
12 agree to that, because it is a smaller component of lost
13 revenue. And I will not sit here, though, and say that all the
14 utilities are doing it the same way, nor would I argue that
15 this is the right way. But there are debates that have
16 occurred on what should be the appropriate lost revenue number
17 to be used.

18 So, I think it behooves us on a going-forward basis
19 to, perhaps, establish what really ought to be the right one,
20 or -- I don't know if you'll reach a consensus there, but, at
21 least, you know, what's the vote going to show type of thing.
22 But I think we ought to get to that kind of a number for
23 consistency purposes.