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Southern Alliance for Clean Energy

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Mark Futrell
Judy Harlow
Florida Public Service Commission
Tallahassee, FL

Dear Mr. Futrell and Ms. Harlow,

Thank you for the opportunity to present our thoughts and participate in the discussion at the April 25, 2008 workshop on the evaluation of the cost-effectiveness of utility-sponsored energy efficiency and demand-side management programs. I am writing to provide some further thoughts on issues raised at the workshop and correct a mistake in my presentation.

I am pleased to submit these comments with the endorsement of Holly Binns, Environment Florida, and Ann Vanek Dasovich, Florida Wildlife Federation.

The RIM test doesn't enforce "fairness"
Our review of prior Florida PSC reports and decisions suggests that the fundamental justification for using the RIM test is fairness. The concern is that the use of a rate mechanism to fund customer-sited energy efficiency results in non-participants somehow cross-subsidizing the cost and energy savings of participants.

We disagree with this view for two reasons: (1) because this definition of fairness does not account for other inter-customer cost effects (which can be termed "subsidies"); and (2) because the unambiguous result is unnecessarily high total system resource cost and cost risk exposure.

As noted in my presentation, depending on how the lost revenue component of the RIM test is calculated (utility and state practices vary), net lost revenues may variously include consideration of:

- Reduced participant contribution to system fixed costs (existing generation and T&D);
- Reduced fuel-related revenues
- Reduced revenues to cover the cost of future system generation replacements and additions; and
- Cost savings, such as avoided fuel costs, avoided variable costs (O&M), and avoided long-term capacity costs.

If energy efficiency is to be treated on parity with supply-side resources, the impact of energy efficiency on the revenue requirement for the customer base should be limited to the reduced participant contribution to system fixed cost. Considering the impact of energy efficiency on fuel-related revenues, future system capacity addition costs, etc. is inappropriate.

One reason that the RIM test fails to measure fairness is that it ignores the contribution of participant resources to the benefit of the overall system. In the load growth context prevalent in Florida, utility customers are indifferent as to whether the energy they require (kWh) are supplied with utility generation or with energy efficiency (including customer-scale and sited generation). While the utility internalizes all costs of utility generation, energy efficiency investments are

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different because part of the cost of the measure is often shared between the utility and the customer.

Another reason that the RIM test fails to measure fairness is that it leaves participants vulnerable to rate increases caused by system load growth even though they have invested their own resources in the mitigation of load growth. If load growth is the reason that high-cost resources are added to the system, then it seems unfair to raise the rates of customers who have actually reduced their demand to pay for the new generation.

Fundamentally, the electric power system is a community resource. The cost of the system to any individual customer depends on shared participation – without cost sharing (or "cross-subsidization), there would be no system at all. It might be possible to devise a "fairness" test and rate structure to hold costs constant for the no-growth consumer, raise rates for those who bring growth to the system, and ensure cost savings for those who have conserved. Although a "fairness" test may be possible, it hardly seems desirable. The better outcome is to ensure that the community's energy service needs are met at the lowest overall cost, and then to devise rate structures that allocate that cost across customers in a matter that balances ratemaking objectives.

The RIM test results in unnecessarily high system costs

Florida utilities acknowledge that more energy efficiency is possible under the Total Resource Cost (TRC) test. In the long run, the lost and deferred opportunities to increase demand-side efficiency result in unnecessary expenditures in terms of both energy and generation capacity without any benefit (other than the purported increase in "fairness").

As other commenters explain, the direct savings of energy efficiency are augmented by an indirect "resource cost savings" benefit to the overall system. Maximizing energy efficiency, not only utilizes the least-cost resources to meet energy services demand, but the cost of those resources tends to be diminished due to economies of scale (for delivery of demand-side resources)[1] and to lower prices in the wholesale market for energy or generation capacity (energy efficiency places downward pressure on prices, thereby reducing demand).

The RIM test results promotes the construction of baseload power plant construction

The investment choice presented by the "RIM vs TRC" question comes down to very tangible questions. For most energy efficiency investments with relatively low costs, the RIM test is dominated by the comparison of avoided costs to net lost revenues. In generation terms, the comparison of costs to revenues is a good working definition of peak generation (high cost to revenue ratio) and baseload generation (low cost to revenue ratio).

The RIM test is failed with a low cost to revenue ratio – in other words, regardless of program cost, the RIM test screens out energy efficiency programs with an opportunity to delay or avoid the construction of high-cost baseload generation. It is certainly in the utility's interest to advocate the continued use of the RIM test, since the opportunity to grow the company's assets and earnings is most affected by increasing demand for baseload generation.

[1] This finding is documented in forthcoming analysis prepared for a South Carolina commission by the Center for Climate Strategies. We would be pleased to forward it when the draft is finalized in the next few weeks. (The point made above is not being affected by final edits to the document.)

The RIM test is more uncertain
Since most energy efficiency programs have relatively low costs, the result of the RIM test is dominated by the comparison of the net present value of forecasted avoided costs and net lost revenues. In comparison, the total resource cost test only relies on one of these values.

Statistical analysis shows that when two uncertain numbers are multiplied (or divided), the uncertainty of their product is the sum of the uncertainties *plus* the product of their uncertainties. If one of the numbers is fairly certain, then the product is fairly small.

In the case of the TRC test, the denominator includes program costs which are by their nature relatively well known since they are the based on current market prices and research expectations. (If those costs turn out to be substantially underestimated, then the program would be scaled back or terminated rather quickly.) Thus, the uncertainty in the TRC is primarily based on the uncertainty in avoided costs and the TRC score can be evaluated in light of that uncertainty.

Yet in the case of the RIM test, both major components are uncertain due to external factors unrelated to the energy efficiency measure being proposed. They may be affected by fuel costs, new generation costs, or load growth that depart from expectations. Furthermore, future commission policy may revise rate design in a manner that would have consequences for the analysis of net lost revenues. While to a degree these uncertainties can be quantified, in a single scenario analysis the combined uncertainty will be far higher than that of the TRC test.

For this reason, the RIM test is more uncertain than the TRC test. (In the workshop, the heading to several slides mistakenly read "less uncertain" due to a typographical error.) This point is made explicitly in the California Standard Practice manual, as noted in the workshop presentation:

> Results of the RIM test are probably less certain than those of other tests because the test is sensitive to the differences between long-term projections of marginal costs and long-term projections of rates, two cost streams that are difficult to quantify with certainty.

Furthermore, this concern also notes the importance of "marginal costs:" to the extent that a utility calculates avoided costs on the margin, rather than in a system scenario comparison (baseline vs aggressive DSM), the marginal cost value itself is an unreliable indicator of the costs that could be avoided with a sizable investment in energy efficiency.

What is public policy objective for a cost-effectiveness test?
We believe that the cost-effectiveness test should first and foremost identify energy efficiency programs with the potential to reduce the total system cost of meeting the demand for energy services. We also believe that the methods for analyzing those costs should take into consideration avoiding quantifiable externalities, such as water resource use, and system cost risk.

Major sources of system cost risk that should be quantified are energy price risk, capacity acquisition price risk, and carbon dioxide regulation risk. The Northwest Power and Conservation Council uses a model that explicitly considers various system cost risks and provides a method for explicitly quantifying the benefit to the system of reducing long-term cost risks.

Our belief is that all externalities and system cost risks should be accounted for in the cost-effectiveness test. Any policy for valuing these risks should be based on consistent statewide policy, reflecting the circumstances of each utility's service area.

Nevertheless, it is not practical to account for every externality and system cost risk. Thus, we suggest that the commission first consider whether there is a relatively straightforward and easily practiced method of measuring the externality (e.g., gallons of water used) or system cost risk (e.g., range of fuel costs). If so, then the commission should next consider whether there is a relatively defensible method for valuing the externality or minimizing the cost risk. Aesthetic values, for example, may be difficult to value while lost opportunity costs associated with water resource use may be somewhat easier to value. We would consider a successful outcome to be one with a highly detailed technical analysis that can be coherently explained and defended in just a few pages.

Finally, we would urge that the cost-effectiveness test should be as dynamic as possible. A static measure-level test that compares program costs to marginal avoided costs derived from the PURPA avoided cost proceedings may be directionally valuable for sorting measures, but it offers little guidance to the long term investment strategy for energy efficiency resources in Florida.

Sincerely,

John D. Wilson
Director of Research