BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of:

COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (FLORIDA POWER & LIGHT COMPANY).	DOCKET NO. 080407-EG
COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (PROGRESS ENERGY FLORIDA, INC.).	DOCKET NO. 080408-EG
COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (TAMPA ELECTRIC COMPANY).	DOCKET NO. 080409-EG
COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (GULF POWER COMPANY).	DOCKET NO. 080410-EG
COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (FLORIDA PUBLIC UTILITIES COMPANY).	DOCKET NO. 080411-EG
COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (ORLANDO UTILITIES COMMISSION).	DOCKET NO. 080412-EG
COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (JEA).	DOCKET NO. 080413-EG

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VOLUME 6

Pages 1199 through 1403

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PROCEEDINGS: HEARING

COMMISSIONERS PARTICIPATING:	CHAIRMAN MATTHEW M. CARTER, II COMMISSIONER LISA POLAK EDGAR COMMISSIONER KATRINA J. McMURRIAN COMMISSIONER NANCY ARGENZIANO COMMISSIONER NATHAN A. SKOP
DATE:	Wednesday, August 12, 2009
TIME:	Concluded at 5:30 p.m.
PLACE:	Betty Easley Conference Center Room 148 4075 Esplanade Way Tallahassee, Florida
REPORTED BY:	JANE FAUROT, RPR Official FPSC Reporter (850) 413-6732
PARTICIPATING:	(As heretofore noted.)

I N D E X

WITNESSES

EXHIBITS

NUMBER:		ID.	ADMTD.
168			1204
76	JWD-1	1207	1295
77	JP-1	1307	1307
78	PHM-1	1369	1401

P R O C E E D I N G S

(Transcript follows in sequence from Volume 5.)

CHAIRMAN CARTER: We are back on the record. And just before we kick off, I need to recognize staff for a moment. But before I do, let me just kind of, for planning purposes, Commissioners, and also to the parties, we mentioned that we had a moment of silence for our former Supreme Court justice yesterday. And there's a public viewing this afternoon at 6:00, and we wanted to -- we have been accommodating people with their travel schedules, and things of that nature, so this afternoon we will probably break around 5:30 to allow people to go participate in that.

I am slightly disappointed. We haven't been making as much progress as we need to. So, again, no friendly cross on either side. It's not happening. Secondly is that we are going to probably end up having to go to 8:00 o'clock tomorrow at least. And if I get my second wind, we may go to 9:00. But I think that -- you know, I think that we do need to kind of stay focused. We do need to stay focused, and we need to, you know, keep the train running on time.

Staff, you're recognized.

MS. FLEMING: Thank you, Chairman.

Earlier this morning there was an exhibit that was introduced by NRDC/SACE, which was marked as Exhibit 168, which is titled Penetration Model Output. And it was my understanding that Ms. Clark had to verify that this was the correct document. It is my understanding that that has been verified, and I believe we can move that into the record at this time.

CHAIRMAN CARTER: Is that the understanding of the parties?

MR. GUYTON: That has been verified.

CHAIRMAN CARTER: Okay. All the parties?

MR. CAVROS: Yes, we would like to move it in. Thank you.

CHAIRMAN CARTER: Okay. And that's Exhibit 168?

MS. FLEMING: That's correct.

CHAIRMAN CARTER: Okay. No objections? Without objection, show it done.

(Exhibit Number 168 admitted into the record.)

MS. BROWNLESS: As another preliminary matter, Mr. Chairman --

CHAIRMAN CARTER: Yes, ma'am. You're recognized, Ms. Brownless.

MS. BROWNLESS: Was Exhibit 164 moved into the record previously?

CHAIRMAN CARTER: 164? Yes, it was. That was staff's 96, FPL's --

MS. FLEMING: Yes, it was moved in late --

CHAIRMAN CARTER: Yesterday.

MS. FLEMING: -- last night.

MS. BROWNLESS: Thank you so much.

CHAIRMAN CARTER: Yes, it was. Okay. Any further preliminary matters?

Okay. Call your next witness.

MR. GUYTON: Florida Power and Light Company calls Jim Dean to the stand.

CHAIRMAN CARTER: Jim Dean. Good afternoon, sir.

MR. GUYTON: I believe Mr. Dean has previously been sworn.

THE WITNESS: That's correct.

JAMES DEAN

was called as a witness on behalf of Florida Power and Light Company, and having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. GUYTON:

Q. Please state your name and business address.

A. My name is James Dean, 2227 Shirley Ann Court, Tallahassee, Florida.

Q. And by whom are you employed and in what capacity?

A. I am principal and owner of Weldon-Dean Associates.

Q. Mr. Dean, did you have occasion to prefile Direct Testimony in these proceedings consisting of 31 typewritten pages?

A. Yes.

Q. And if I were to ask you the same questions today as appear in your prefiled direct testimony, would your answers be the same?

A. Yes.

MR. GUYTON: Chairman Carter, we ask that Mr. Dean's direct testimony be inserted into the record as though read.

CHAIRMAN CARTER: The prefiled testimony of the witness will be inserted into the record as though read.

BY MR. GUYTON:

Q. And, Mr. Dean, did you have occasion to prefile what has been identified in Staff's Exhibit List as Exhibit 76, your JWD-1?

A. Yes, that is correct.

Q. And is that exhibit true and correct to the best of your knowledge and belief?

A. Yes, it is.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF JAMES W. DEAN

DOCKET NO. 080407-EG

JUNE 1, 2009

Q. Please state your name and business address.

A. My name is James W. Dean, and my business address is 2227 Shirley Ann Court Tallahassee, Florida 32308.

Q. By whom are you employed and what position do you hold?

A. I am the principal and owner of Weldon-Dean Associates, a consulting firm that provides energy consulting services to electric utilities and private sector firms.

Q. Please describe your education and professional experience.

A. I graduated from Georgia State University in Atlanta in 1973 with a Bachelor's degree in Urban Affairs. In 1976, I earned a Master's degree in Government with a concentration in Public Policy from Florida State University. Between 1977 and 1979, I completed all graduate course requirements and qualifying exams for a Ph.D. in Government except for completing the dissertation. In 1995, I earned a Bachelor's degree in Economics, and in 2001 earned a Master of Business Administration with a concentration in Finance -- both from Florida State University.

From 1980 to 1982, I worked with the Power Plant Siting Office in the Florida Department of Community Affairs (DCA). My responsibilities included making determinations as to the suitability of the Ten Year Site Plans submitted by Florida's electric generating utilities and participating on behalf of the DCA in the power plant siting process pursuant to 403.507(2)(a)(1), Florida Statutes.

In 1982, I was hired by the Florida Public Service Commission ("FPSC" or "Commission") as an Energy Analyst. I served in a variety of technical positions in the Division of Electric and Gas until 1988, when I was promoted to Chief of the Bureau of System Planning and Conservation. My principal duties in that position were to manage the development of staff recommendations on dockets relating to conservation, cogeneration and need determinations for new power plants.

From 1991 to 1992, I was employed by the City of Tallahassee as the Supervisor of Demand Side Management. In that role I was responsible for developing the City's energy efficiency programs, developing the annual demand and energy forecast, preparing the Ten-Year Site Plan, and managing end use research projects.

I returned to the FPSC in 1992 where I served as Chief Advisor to Commissioner Luis Lauredo. From 1994 until 2001, I served as a Conservation Technology Specialist, where I worked on special projects as directed by the Executive Director and the Commission Chairman.

I worked in what became the Commission's Office of Strategic Analysis and Governmental Affairs from 2001 until 2007; I was appointed director of the division in 2004. I was responsible for all liaison activities with the Florida Legislature, Governor's Office, and relevant external entities and managed a team of eight direct report employees. My duties included overseeing the preparation of legislative bill analyses, speaking to Legislative committees and interfacing with legislative staff.

Since leaving the Commission in 2007, I have been the principal and owner of Weldon-Dean Associates.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring Exhibit JWD-1, *Adoption of Numeric Conservation Goals and Consideration of National Energy Policy Act Standards*, Commission Order No. 94-1313-FOF-EG, issued on October 25, 1994, in Docket No.930548-EG, which is attached to my direct testimony.

Q. What is the scope and purpose of your testimony?

A. The purpose of my testimony is to comment upon three areas in the current Florida Energy Efficiency and Conservation Act (FEECA) goals docket. First, based on my knowledge of and numerous and varied levels of involvement in FEECA proceedings, I offer a perspective on the history and rationale of Commission decisions addressing some of the recurring policy decisions in those dockets and the basis for those decisions. My comments focus on the relevant decisions regarding the appropriateness of the Rate Impact Measurement (RIM) test and why Florida Power & Light Company's (FPL's) proposed E-RIM goals are appropriate.

Second, I offer my opinion on how the recent amendments to FEECA contained in HB 7135 and codified at Section 366.82(3)(b), Florida Statutes, mesh with the Commission's established cost-effectiveness tests. Specifically, based on my extensive familiarity with the Commission's cost-effectiveness tests, I conclude that the language of Section 366.82(3)(b), is more compatible and consistent with using the RIM and Participant tests rather than the Total Resource Cost (TRC) test.

Finally, I provide an independent review of the processes FPL used to develop its demand and energy goals in this docket and offer opinions on: (1) the objectivity and rigor of these processes, (2) the compatibility of FPL's goals process with

FEECA and the DSM Goals rule and (3) the reasonableness of FPL's resulting DSM goals.

Q. Please summarize your testimony.

A. There is a long and rich regulatory history of Commission decisions implementing FEECA. Through its implementation of FEECA, the Commission has been a national leader in establishing a constructive regulatory framework for implementing DSM. The Commission has consistently and aggressively implemented FEECA, encouraging Florida utilities to acquire cost-effective DSM that fulfilled specific resource needs. Over this 29-year period, the Commission has deliberated and resolved the vexing issues that were raised by FEECA, and on five separate occasions has declined to establish TRC-based DSM goals, opting instead for RIM-based goals. Thus, the issues the Commission will be considering in this current docket are not novel.

Over the many years and numerous FEECA proceedings, the Commission has steadfastly maintained that DSM goals be established that minimize rate impacts, minimize cross-subsidies between customers, and integrates with utility-identified capacity needs. Since the most recent DSM goals rule was adopted in 1993, the Commission has consistently concluded that using both the RIM and Participant tests rather than the TRC test is the appropriate standard to use in setting DSM goals and approving utility DSM programs. The Commission has been acutely aware of and at every opportunity has taken a position to minimize

customer rates and minimize income transfers between customers (i.e., subsidies) associated with TRC programs. Commission orders have repeatedly recognized and required that the economic benefits of DSM should accrue to all utility customers – those that participate in DSM programs as well as those who do not participate. The Commission has never mandated – except for residential audits which are required by law – that utilities be required to deliver energy efficiency programs which on their face fail the RIM test.

In all five FEECA goals-setting proceedings, the Commission has recognized the desirability of establishing DSM goals based upon the utilities' planning processes and has used the measures of avoided costs from those processes as the basis for measuring customer benefits. The Commission has shown consistent sensitivity to minimizing free-riders so that customer provided funds that pay for utility incentives would be offered only to optimize participation in DSM programs. The Commission has also recognized that the energy and demand goals established in these proceedings have increased and decreased depending on a number of economic parameters such as: the cost, timing and type of new generating resources, the projected resource needs of the utilities, the cost and performance of energy efficiency and DSM measures and economic conditions existing at the time, always with a keen eye on the rate impact on all ratepayers. In this docket, FPL is proposing goals that integrate DSM in a cost-effective manner with FPL's capacity needs and forecasted load growth.

Given current economic circumstances, particularly the increased real price of electricity and the economic demands faced by customers in this significant economic downturn, now is not the time to disregard the lessons of the past. Indeed, sensitivity to rate impacts, acquiring only the DSM needed to meet resource needs and maximizing customer provided incentive dollars make as much or more sense now than they have in any prior DSM goals proceeding.

The Commission is faced with additional statutory language regarding cost-effectiveness, but as my testimony shows, this new language is more compatible with the RIM and Participant tests than it is with the TRC test. The Commission is instructed to "take into consideration" all costs and benefits, something the TRC test fails to do, and it is told to consider a specific cost – utility incentives to customers – that is not a part of the TRC test. In contrast, the RIM and Participant tests, when used together, capture all relevant costs and benefits.

Finally, I have conducted an independent review of FPL's process and methodology in developing its DSM goals for 2010 through 2019. FPL has gone beyond the requirements of FEECA and the Commission's DSM goals rule. It has participated in a collaborative effort that captured the full technical potential of DSM and then assessed alternative scenarios of achievable potential. Most importantly, it has integrated its achievable potential assessment with its resource

needs, assuring that FPL's customers are not asked to acquire more DSM than is needed to serve them. FPL's proposed DSM goals should be adopted.

I. THE FLORIDA ENERGY EFFICIENCY AND CONSERVATION ACT AND THE FPSC

Q. When did Florida begin focusing on conservation?

A. As a result of the increase in crude oil prices following the Iranian revolution in 1979, the 1980 Florida Legislature passed FEECA. The broad intent of this legislation was to place a continuous obligation on electric utilities to develop programs and tactics to manage the growth in energy consumption and demand and to target reductions in the use of petroleum-derived fuels for electric generation. FEECA required the Commission to adopt goals by September 1, 1980 for a five-year period.

The legislative intent of FEECA placed special importance on reducing weather sensitive peak demand over simply reducing growth rates of electric consumption. This indicates that the legislative authors were particularly focused on slowing the growth in peak demand, which defers the need for new capacity and offers other benefits besides managing fuel costs. This enables all customers to benefit, not just the program participants.

Q. Is capacity deferral addressed elsewhere in FEECA?

A. Yes. A determination of need was included in the FEECA statute. It provided, among other things, that the Commission, when assessing the need for electrical power plants, was to "expressly consider the conservation measures taken by or reasonably available to the applicant or its members, which may mitigate the need for the proposed plant...." Thus, before a new power plant can be built in Florida, utilities have to show that conservation could not avoid or defer the need for it.

Q. Did the Commission address rate impacts in its initial implementation of FEECA?

A. Not explicitly, but it did address the potential problem of cross-subsidization among customers. The Commission's rules implementing FEECA contained both broad general goals and specific numeric goals providing numeric reduction targets in peak demand growth, electric consumption growth, and the use of petroleum fuels. It also prescribed a specific number of residential audits to be performed. The Commission's interpretation of FEECA was that controlling demand (kW) growth was a higher priority than controlling energy (kWh) growth.

In Rule 25-17.01(2), Florida Administrative Code (F.A.C.), of the original rule, the FPSC addressed the issue of equity impacts from implementing conservation programs. The initial language read:

> Reducing weather sensitive peak demand on the electric system to the extent cost-effective is the first priority. Reducing weather sensitive peak demand benefits not only the individual customer who reduces his demand, but also all other customers on the system, both of whom realize the immediate benefits of reducing the fuel costs of the most expensive form of generation and the longer term benefits of deferring additional higher cost capacity.

Thus, even in these very first rules implementing FEECA, the Commission was cognizant of the potential cost-shifting (i.e., rate) impacts of conservation programs, the need to tie conservation to the utility's resource planning process and the principle that avoided costs should be considered customer benefits. Even after several revisions, similar language remains in the current rule.

Q. Did the Commission prescribe a cost-effectiveness test that it would use in approving DSM programs?

A. Not in the initial rules. Using DSM as part of utility resource plans was completely novel at that time. In fact, California and Florida are acknowledged pioneers in requiring DSM as part of a utility's resource plan. However, the Commission was concerned about over-incenting customers and funding free-riders -- customers who should have an economic incentive to participate without being paid a utility incentive. From the onset, the Commission acted to avoid free-riders. While the Commission did not tie itself to any particular cost-

effectiveness test, it concluded that only DSM justified as passing a cost/benefit analysis should be advanced. (Order No. 9672, issued on November 26, 1980, in Docket No. 800662-EG).

Q. When did the Commission adopt the first conservation cost-effectiveness rule?

A. In November 1982, the Commission adopted a cost-effectiveness reporting format rule. This initial rule outlined the reporting format to be used for each program to represent the various year-by-year streams of costs and benefits. In this initial format, the Commission envisioned three perspectives on cost-effectiveness. The reporting forms were designed to report cost-effectiveness from the perspectives of the participating customers, the individual utility, and the state of Florida as a whole. The Florida perspective was largely viewed as a means to capture inter-utility impacts of changes in wholesale purchases of capacity and energy when non-generating utilities offered DSM programs.

Q. When did the Commission adopt its current conservation or DSM cost-effectiveness reporting rule?

A. In July 1991, in Docket No. 891324-EU, the Commission adopted its current *Conservation and Self Service Wheeling Cost-effectiveness Data Reporting Format.* These reporting requirements were codified in Rule 25-17.008, F.A.C.

Q. Did the Commission make a finding as to what test would be used to approve DSM programs and self-service wheeling requests at that time?

A. No. However, the Commission acknowledged that self-service wheeling has identical impacts on a utility system as energy efficiency programs; they reduce demand and energy. The Commission acknowledged the tension between FEECA's mandate to encourage cogeneration (of which self-service wheeling is a component) and the language in Section 366.051, Florida Statutes, that required public utilities to wheel power for retail customers to another location, "if the Commission finds that the provision of this service, and the charges, terms, and other conditions associated with the provision of this service are not likely to result in higher cost electric service to the utility's general body of retail and wholesale customers or adversely affect the adequacy or reliability of electric service to all customers." (Order No. 24745, issued on July 2, 1991, in Docket No. 891324-EU) (emphasis added).

In the order adopting the rule, the Commission stated, "The tension in these two statutes is not resolved in this rule. The rule and the manual provide a neutral reporting format. It does not automatically bounce or reject a program --- conservation or self-service wheeling. Instead, it provides a fair, rational judgment call." However, despite the Commission's assertion of no preference, the fact is the rule only permits approval of self-service wheeling requests which are not likely to result in higher costs to the general body of retail customers.

Thus, the standard embodied in Section 366.051, F.S. and the implementing Rule 25-17.0883, F.A.C. is a de facto RIM test. This rule aligns with the Commission's position that neither DSM nor self-service wheeling would have an adverse effect on the general body of customers.

Q. Please continue with your recap of the Commission's consideration of DSM cost-effectiveness tests.

A. The Commission thoroughly considered DSM cost-effectiveness in the 1994 goals-setting process. That process began with an extensively contested rulemaking proceeding in 1993 that modified the DSM goals rule into what is largely its present form, and ended with an appeal and affirmance of the Commission's DSM goals decision by the Florida Supreme Court.

In 1993, the four investor-owned utilities, municipal utilities and electric cooperatives as well as a number of consumer groups, environmental organizations and solar industry representatives participated in DSM goals rulemaking that modified the DSM goals rule into what is largely its present form. Environmental groups argued for a rule that (a) prescribed the TRC test as the governing cost-effectiveness test, (b) required decoupling of utility revenues and (c) proposed incentives to utilities to overcome any disincentives to perform DSM. They argued that Florida was lagging behind other "leading" DSM states, even though the Governor's Energy Office had recently issued an independent report concluding that Florida utilities had been "extremely successful in

reducing peak demand requirements" and had also been "among the leaders in achieving energy savings."

Q. Did the Commission's 1993 rule prescribe a cost-effectiveness test?

A. No. Despite the spirited push from environmentalists, the Commission chose not to (1) prescribe a cost-effectiveness test in its DSM goals rule, (2) adopt a program specific goals rule, (3) adopt a rule that required decoupling, (4) adopt a rule with an incentive mechanism, or (5) adopt a rule that required utilities to acquire DSM that was not needed or cost-effective.

Q. Was the 1994 DSM goals proceeding as contentious as the 1993 rulemaking proceeding?

A. Yes. As was the case in the preceding DSM goals rule amendment process, a wide variety of parties participated. Twenty-five parties were represented at the hearing. The prehearing order issued by Commissioner Deason was 135 pages. Sixty witnesses filed testimony in direct and rebuttal. The hearing took seventeen days spread out over two months. At the time, it was the longest hearing ever conducted before the Commission. The transcript numbered more than 10,000 pages in thirty-seven volumes.

The Department of Community Affairs Secretary and the Governor's Energy Office, acting as Executive agencies, in collaboration with environmental groups such as the Legal Assistance Environmental Foundation (LEAF), and the United States Department of Energy were major participants in this proceeding. They

collectively argued that the Commission should depart from its historical RIM position and adopt the TRC standard.

Q. Did the Commission determine the appropriate cost-effectiveness tests to be used in developing DSM goals?

A. Yes. This was the single most contentious issue before the Commission and the most eagerly awaited for resolution. After consideration of all the evidence, the Commission decided to base DSM goals on measures that passed both the RIM and Participant tests rather than measures that pass the TRC test. The Commission stated, in pertinent part:

> We will set overall conservation goals for each utility based on measures that pass both the participant and RIM tests. The record in this Docket reflects that the difference in demand and energy savings between the RIM and TRC portfolios are negligible. We find that goals based on measures that pass the TRC but not RIM would result in increased rates and would cause customers who do not participate in a utility DSM measure to subsidize customers who do participate. Since the record reflects that the benefits of adopting TRC goals are minimal, we do not believe that increasing rates, even slightly, is justified. (Order No. 94-1313-FOF-EG, issued on October 25, 1994, in Docket No. 930548-EG).

The Commission also addressed the benefits to low income customers of using the RIM standard as the controlling one for adopting goals:

> All customers, including low income customers should benefit from RIM-based programs. This is because RIM-based programs insure that both participating and non-participating customers benefit from utility sponsored conservation programs. Additional generating capacity is deferred and the rates paid by low income customers are less than they otherwise would be. (Order No. 94-1313-FOF-EG, issued on October 25, 1994, in Docket No. 930548).

Q. Was the Commission's decision to reject the TRC standard protested?

A. Yes. LEAF requested reconsideration of the final order. LEAF argued that the TRC standard should be used in lieu of the RIM standard. After hearing LEAF's arguments on why TRC should be the approved standard, the Commission articulated a policy preference to keep rates as low as possible and to retain flexibility in application of the Rule "by mandating analyses under three methodologies and allowing other cost-effectiveness analyses without a stated preference for any approach." (Order No. PSC-95-0075-FOF-EG, issued on January 12, 1995, in Docket No. 930548-EG.) The Commission rejected LEAF's argument that it had failed to consider costs. The Commission stated as follows, "[t]here has been no Commission failure to consider bill impact. We have

chosen to keep rates lower for all customers, lowering bills for non-participants and participants." (Order No. PSC-95-0075-FOF-EG, issued on January 12, 1995, in Docket No. 930548-EG).

Q. Did LEAF's protest end with its request for reconsideration?

A. No. LEAF appealed the Commission's decision to the Florida Supreme Court. The sole issue on appeal related to the TRC versus RIM argument. In rejecting LEAF's argument on appeal, the court spoke directly to the fact that the difference between the two tests was given "a complete and balanced view" by staff as part of the recommendation and by the Commission at the Special Agenda. The Court stated:

> In instructing the Commission to set conservation goals for increasing energy efficiency and conservation, the legislature directed the Commission to not approve any rate or rate structure which discriminates against any class of customer. The Commission was therefore compelled to determine the overall effect on rates, generation expansion, and revenue requirements. Based on our review of the record, we find ample support for the Commission's determination to set conservation goals using RIM measures. Accordingly, we affirm the orders of the Commission.

Legal Environmental Assistance Foundation Inc. v. Clark, 668 So.2d 982 (Fla. 1996).

Q. Have the Commission's decisions reflected awareness that goals should be established based on contemporary economic parameters?

A. Yes. The Commission in 1994 recognized that cost-effective FEECA goals were dependent on a variety of economic parameters and would change over time. In the 1994 goals docket the Commission established zero goals for Gulf Power Company for the Commercial/Industrial sector. Likewise, in the 1999 goals docket, the Commission acknowledged that the targeted goals were less aggressive than previous goals due to the lower capital costs of new power plants.

Q. Have DSM Goals proceedings since 1994 been contested?

A. Relatively speaking, no. LEAF attempted in the 1999 goals proceeding to resurrect the TRC vs. RIM debate and have the Commission require the development of a TRC portfolio. The Commission declined, stating that TRC-based goals did not comport with Commission policy:

> Pursuant to FEECA and precedent, utilities may propose for Commission approval, any program it wishes to offer its customers. In some, LEAF's argument that we have a policy of requiring TRC portfolios in these goals dockets is incorrect and merely attempts to reargue matters of which are stare decisis. (Order No. PSC-98-1435-PCO-EG, issued on October 26, 1998, in Docket No. 971004-EG).

As a result of this order essentially holding that the RIM vs. TRC debate had been resolved, subsequent DSM goals proceedings in 1999 and 2004 were not contentious.

Q. Are there other dockets where the Commission has articulated a policy position that the RIM standard is the appropriate criteria to use in approving programs?

A. Yes, there are several. For example, in Order No. 21317, issued June 2, 1989, in Docket No. 890002-EG, when reviewing Florida Power Corporation's commercial/industrial load control program as part of a conservation cost recovery hearing, the Commission stated:

> All conservation programs involve some form of subsidy in the form of a cost recovery charge. Not everyone directly participates in these programs but all customers pay for them. We allow this recovery if benefits accrue to the general body of ratepayers. That is demand and energy savings associated with the program should defer capacity and avoid fuel to afford residual benefits to all ratepayers. We have adopted a form cost-effectiveness test to perform such evaluations.

Of course, the cost-effectiveness test to which the Commission referred is the RIM test.

The RIM test was also accepted as the appropriate cost-effectiveness test in Order No. PSC-04-0359-PAA-EG, issued on April 5, 2004, in Docket No. 040049-EG, where the Commission rejected a proposed FPL program targeted toward low income customers that did not pass the RIM test. RIM was again upheld in a challenge to an FPL new home construction program. (Order No. PSC-06-0025-FOF-EG, issued on January 10, 2006, in Docket 040660-EG).

There are also a host of need determination cases where the utilities presented RIM-based DSM plans and the Commission determined that no cost-effective DSM reductions were reasonably available to mitigate the need for the proposed generating plant. In several of these need determination cases, TRC-based DSM portfolio alternatives were proposed and rejected.

Q. What conclusions do you reach from the Commission's FEECA decisions on cost-effectiveness over these past 29 years?

A. The Commission has consistently required aggressive goals while balancing this policy objective with sensitivity that rates should not be increased relative to supply-side alternatives. The Commission's actions over the years have confirmed the RIM standard is the appropriate standard to establish utility end-use goals and DSM programs. While the Commission has offered utilities the flexibility to implement programs that are not cost-effective under the RIM test, it has not mandated such programs.

In addition, it is clear that the Commission believes DSM goals should be integrated in a cost-effective manner with the utility's load and energy forecast and the generation expansion plan. The Commission has never prescribed goals for the sake of having goals. On the contrary, it has always treated energy and demand reductions on a level playing field with supply side options. The Commission has not prescribed excess DSM goals that result in unnecessary expenditures borne by the general body of customers

Finally, by using economic analyses that properly balance demand-side and supply-side resources and relying on the RIM standard that benefits all customers, the Commission has declined to mandate that one group of customers subsidize another group. Consequently, the utilities have consistently implemented programs enabling the State of Florida to be a recognized leader in achieving results while avoiding undue rate impacts.

Q. Are there reasons for the Commission to change its policy and require TRC programs in this goals-setting docket?

A. No. To the contrary, the historical reasons for requiring integrated DSM and supply-side resources without subsidization are even more applicable in today's environment. Electric customers in Florida are facing some significant economic challenges. For the past couple of years, real electric prices have risen for Florida customers. This has been the only multi-year increase in real electric prices since the early 1980s. Obviously, the economic environment for

consumers with respect to wages and employment is decidedly negative. Governmental and philanthropic organizations are all reducing services. Given current conditions, now is not the time for the Commission to abandon the RIM and Participant tests standard and raise rates by imposing additional costs on Florida consumers simply for the sake of implementing more DSM programs.

Q. Are there reasons for the Commission to retain its current RIM-only goals setting policy?

A. Yes. In addition to the benefits cited above, RIM-based goals provide the Commission with a complete picture of all the costs of offering DSM programs. By this I mean, the program incentive payments that are collected from all customers are explicitly accounted for when comparing a RIM-based DSM portfolio to a supply-side option. Program incentive costs are excluded when comparing a TRC-based portfolio to a supply-side alternative. Just as the Commission would insist that all relevant costs be included in the proposed supply-side option, the Commission should insist that all DSM-related costs be included in DSM options. As FPL witness Sim discusses in detail in his testimony, only the RIM test includes all DSM-related costs. The TRC test does not include all DSM-related costs and, therefore, it is a fundamentally flawed test. Only with the full disclosure of all relevant costs would the Commission have all the necessary information to make a fully informed decision.

II. HOW THE COMMISSION'S COST-EFFECTIVENESS TESTS CONFORM TO RECENT FEECA AMENDMENTS

Q. Has FEECA recently been amended?

A. Yes. Changes to FEECA occurred as a result of HB 7135 being enacted in 2008. For purposes of my testimony, I focus on new statutory language requiring the Commission in adopting goals to consider costs and benefits to participating customers and "to the general body of ratepayers as a whole, including utility incentives and participant contributions." Section 366.82(3)(b), F.S.

Q. Based on your familiarity with the Commission's DSM cost-effectiveness tests, which test(s) consider the costs and benefits to the general body of ratepayers as a whole?

A. Both the TRC test and the RIM test consider benefits to the general body of customers. What distinguishes the two tests is that not all utility costs and impacts are considered in the TRC calculation, but all are included in the RIM test.

Q. Which of the Commission's cost-effectiveness tests considers utility incentives paid to customers?

A. Both the RIM and the Participant tests account for utility incentives paid to customers. The RIM test treats these incentives as a cost; the Participant test treats these incentives as a benefit. The TRC test totally disregards incentives paid to customers.

Q. In your opinion, what cost-effectiveness test or tests is/are the appropriate regulatory standard to use for approving utility goals and DSM programs?

A. The Participant test and RIM test. The Participant test is required to identify whether program participation is economically beneficial to the customer that the program targets. The RIM test determines whether the program is economically beneficial to the entire body of customers, including non-participating customers. On the other hand, if the regulatory objective is to reduce energy consumption without regard to cross-subsidies and equitable treatment for all customers, then the TRC test could be considered.

Q. What are some of the advantages of the RIM test over the TRC test?

A. First, the RIM standard aligns the interests of both utilities and customers. By this I mean utilities must manage their capital expenditures between rate cases. Avoiding construction of new power plants that can be deferred more cost-effectively with RIM-based DSM is consistent with this goal. Under the RIM test, utilities defer or postpone new plant construction costs, which results in lower rates than otherwise would have been incurred. All customers benefit. Participating customers will enjoy both lower rates and bills, than if the utility had built. Non-participating customers will benefit from lower rates due to the avoided capital expenditures. This results in what is sometimes called a "no losers" test. No individual is worse off as a result of the program. The utility is better off, the program participants are better off, and the non-program

participants are better off. This outcome avoids the difficult regulatory decision of transferring wealth between customers.

Compare this to the case where the TRC standard is used. In this situation, the objectives of customers and utilities are not aligned. Under the TRC standard, some customers are "winners" and some are "losers" with respect to the economic impact of the programs. For example, for those who participate in programs, non-participants subsidize the program costs. In any given program, there are typically more non-participants than participants. While there may be some reduction in future capital expenditures by avoiding power plants, these capital savings are less than the cost of the DSM programs. Thus, non-participants are financially worse off under TRC programs. Requiring TRC programs places the Commission in the position of making decisions about redistributing income between customers or customer classes and producing "winners" and "losers" among the customers of utilities.

Q. Are certain customers disproportionately affected by the cross-subsidization that occurs with TRC?

A. Yes. By definition, rates are higher with TRC programs than under RIM programs. Electric rates tend to be regressive. By this I mean that lower income users who are less likely to participate in DSM programs will pay more for their utility bills as a percentage of their disposable income than higher income users. In addition, most DSM programs require that program participants pay some

amount of the program costs up front. Since lower income customers are more likely to be renters and have less investable capital, they are less likely to participate in DSM programs. In sum, they subsidize program participants who have the financial resources to take advantage of utility DSM programs. The regressive nature of these programs is also discussed in the testimony of FPL witness Sim, when he discusses the cost of various system expansion plans.

Q. With respect to the Commission's cost-effectiveness reporting rule, which of the tests, the TRC or RIM, incorporates environmental benefits?

A. They both do. Some DSM advocates probably believe that only the TRC test includes environmental externalities and the RIM test excludes such costs, but that is inaccurate. The Commission's reporting form, PSC Form CE 2.5, as required by Rule 25-17.008 contains provisions to include environmental costs as part of both the RIM and TRC analyses. In FPL's filing in this docket and in recent need determinations before the Commission, the Company has included both existing and proposed environmental costs as part of the E-RIM, E-TRC and supply option analyses. Including such costs places demand-side and supply-side resource options on a level playing field. There is no valid economic reason why a regulatory body would require additional DSM reductions with the attendant cost increases, economic inefficiencies and cross-subsidies if all relevant quantifiable costs and benefits have been included in the RIM analysis.

III. REVIEW OF FPL'S DSM GOALS-SETTING PROCESS

Q. Please describe your independent review of the process used by FPL to determine the technical and achievable demand and energy reductions submitted as the Company's goals in this docket.

A. FPL requested that an independent third party evaluate the processes and analytical approaches the Company used to derive its 2009 FEECA demand and energy goals. I was engaged for this purpose, and I first met with FPL's technical staff in December 2008. At that time, they described to me the process that they were using to develop the technical potential and the process planned to be used for development of the achievable potential for the 2009 DSM goals docket.

Since that initial meeting, I have reviewed FPL's load forecast and examined the underlying assumptions used in the development of the load and energy forecast. I have read Itron's *Technical Potential for Electric Energy Peak Demand Savings in Florida.* I have reviewed the major assumptions incorporated into FPL's system-wide goals assessment. I have reviewed the methodology used by FPL to develop these goals, and I have analyzed the final results as submitted in this docket.

Q. What is your conclusion about the process and methods used by FPL to develop the 2009 DSM Goals filing?

A. I believe the Company has used a methodologically correct process. The assumptions underlying the models are appropriate, and the proposed goals appear reasonable given the economic conditions which exist today and are anticipated to exist in the future.

Q. What is the basis for your conclusion?

A. FPL along with other utilities engaged Itron, a well-respected outside consulting firm, to perform the statewide technical assessment study. Itron has performed similar studies for other clients including performing the *2006 California Energy Efficiency Potential* Study. The study Itron conducted for the Florida utilities was the first statewide utility-sponsored, collaborative DSM technical potential assessment since the Synergistic Resource Corporation performed the 1992 study. The Itron study was a product of a collaborative of utilities and environmental groups and open to Commission staff. To the extent possible, it utilized consistent assumptions for the technical potential assessment. It incorporated into the analysis the most recent demographic information with respect to housing stocks, existing appliance efficiencies, current building code standards, and federally mandated appliance efficiency and lighting standards. The study assumptions included realistic, current estimates of the demand and energy reductions associated with a very large number of efficiency and demand response measures and realistic estimates of the costs of such measures. The

study appropriately looked at incremental DSM reductions instead of treating each measure as discrete. This is a new approach for Florida, but it has been used in other regions. Basically, when doing a statewide potential study, this approach assumes that the most cost-effective measures are installed first and then each less cost-effective incremental measure is installed with commensurately fewer energy and demand savings. In essence, DSM reductions are treated as a supply curve with each incremental measure having a longer payback than the previous measure. This approach gives a more accurate picture of the potential savings.

FPL's internal processes built upon Itron's technical potential study by focusing on FPL's specific market characteristics and evaluating what combination of customer incentives and administrative costs could be spent to achieve the maximum level of program participation. FPL then ran a series of scenarios under both the E-TRC and E-RIM tests. FPL witnesses Sim and Haney provide more details on this part of the analysis in their testimony.

Q. **Please comment on the appropriateness of FPL's decision to use a two-year payback criterion for estimating its achievable DSM potential.**

A. I believe this is a reasonable criterion to use in balancing program administrative costs and the level of customer incentives used to encourage participation regardless of whether a TRC or a RIM standard is used. The reason a two-year payback is reasonable is that we know from many years of research on individual

investment behavior with respect to installing energy efficiency measures that individuals have extremely high discount rates. A discount rate is essentially the minimum percentage earnings an individual must make on an investment to be willing to give up current consumption (i.e., spend the money now) versus spending it to make a future return. While most individuals certainly cannot articulate this exact percentage return, economists have estimated ranges from observed energy efficiency purchasing behavior. The estimates range from a low of around 26 percent (essentially a four-year payback) to more than 100 percent returns (essentially a one-year payback). Most studies tend to be in the 40 to 60 percent range, which implies a payback period of slightly less than two years up to three years. While certainly not an exact science, it would appear that a two-year payback would fit well within the academic literature. Thus, the benefit of a two-year payback is that it addresses the issue of free-riders.

Q. Please explain why the free-rider issue is important?

A. Free-riders are those individuals who would of their own volition install an energy efficiency measure without being paid an incentive by a utility. The free-rider issue is important for two reasons. First, given that funds for utility DSM programs are limited and a program design should not incent participants who would install the measure on their own without an incentive payment, then a utility must find a balance between paying too much in incentives and thus paying unnecessarily for free-riders or paying too little and not meeting the goals. Second, Commission Rule 25-17.0021(3) F.A.C., which prescribes how goals

shall be determined, requires the utility to account for the impact of free-riders when developing its FEECA goals.

Q. In your opinion, do FPL's proposed E-RIM based goals adequately account for the impact of free-riders?

A. Yes, I believe FPL's decision to use a two-year payback criterion is reasonable and appropriate for the reasons discussed above.

Q. Does this conclude your testimony?

A. Yes.

BY MR. GUYTON:

Q. Would you please summarize your testimony for the Commission?

A. Yes, I will.

Good afternoon, Chairman Carter and Commissioners. Florida Power and Light has proposed DSM goals as required by the Commission rules and the Florida Energy Efficiency and Conservation Act, including the most recent petitions to that act. FPL's proposed enhanced RIM goals fully comport with all the procedural requirements contained in your rules and the substantive analysis required by those rules. The proposed goals meet the statutory directives contained in Chapter 366, the FEECA Act, and do it in a manner that minimizes rate increases for all of FPL's customers. While adaptive to new circumstances and new statutory considerations, the proposed goals are consistent with well reasoned, thoughtful decisions that previous Commissioners have made dating back almost 30 years now.

The technical potential study that was conducted by Itron under the auspices of the collaborative group process resulted in the first systematic unbiased assessment of the technical and achievable potential for demand and energy savings in

Florida since the early 1990s. This approach captured the latest technologies, including the impacts of new mandatory appliance standards and building codes, and they used the latest market penetration models to realistically assess the current DSM potential in the residential, commercial, and industrial sectors.

My testimony addresses the modest changes to FEECA that occurred as a result of House Bill 7135. FPL took these changes very seriously and provided the analysis to allow the Commission to meet its obligations to examine several additional considerations as specified in the language. The most significant analytical change proposed by FPL addresses one of these legislative considerations; that is, the cost imposed by state and federal regulations of greenhouse gases. Adding the benefit of avoiding these greenhouse gas costs increased the number of DSM measures found to be cost-effective. Perhaps the most important part of my testimony addresses which cost-effectiveness tests are the most appropriate ones to use in establishing goals.

While the Commission has wide discretion in this area, both Commission precedent and contemporary review of circumstances leads me to conclude that the Participant test and the Enhanced Rate Impact Measurement test, the E-RIM, results in the most

appropriate cost-effectiveness standards to be established, used to establish goals.

Using these two tests results in multiple benefits. First, they fully disclose all the costs and benefits of conducting DSM goals. Second, they align the interest of the utility and the customers in such a manner that encourages the utility to aggressively pursue DSM without increasing rates. Third, the use of these two tests minimize the impact of cross-subsidies between different customer groups and classes. And, last, they create a regulatory outcome that all customers of the utilities are beneficiaries under the new goals. As discussed in my testimony, an outcome with all winners and no DSM losers is a desirable regulatory result.

That concludes my summary.

MR. GUYTON: We tender Mr. Dean.

CHAIRMAN CARTER: Thank you.

Ms. Kaufman, good afternoon.

MS. KAUFMAN: Good afternoon, Mr. Chairman.

CROSS EXAMINATION

BY MS. KAUFMAN:

Q. Good afternoon, Mr. Dean. How are you?

A. Fine, thank you.

Q. Mr. Dean, in your testimony you kind of walked

us through the history and policy of DSM goals at the Commission and in the statute in 366, correct?

A. Yes.

CHAIRMAN CARTER: Jim, pull your mike around a little. There you go. Thank you.

BY MS. KAUFMAN:

Q. And you took a look at the new amendments to Chapter 366, correct?

A. Yes, I did.

Q. In your opinion, do those amendments, when taken into consideration with the parts of the statute that were not amended, do they still require the Commission to consider the rate impact of any measures on customers?

Do you want me to ask that again?

A. Yes. Just the last part.

MR. CAVROS: Excuse me, Chairman. I'd like to interject an objection. With all due respect, I think we have been very lenient, you know, prior to this and not objecting to friendly cross. But I think that, you know, FIPUG has expressed their advocacy for RIM, and I think this is along the lines of friendly cross.

MS. KAUFMAN: Mr. Chairman, this is not friendly cross. I think if you look at our position, we have asked the Commission to take into consideration the

rate impact. We haven't taken a position on which test, and I think I'm entitled to inquire of Mr. Dean. I'm not aligned with him or with the utilities.

CHAIRMAN CARTER: I will allow it. Please proceed.

BY MS. KAUFMAN:

Q. I'm trying to remember what I asked you. I think that I asked you, Mr. Dean, taking into account 366 along with the new amendments to that chapter, is the Commission still required to take into account the rate impact of any measures on consumers?

A. I don't think the changes to 366 require the Commission to use any single test. I think it lays out a series of considerations that the Commission is supposed to deliberate upon, and I do believe that my reading of it would lead me to conclude that the existing Commission tests they use would meet those standards.

It is my recommendation that the Participant test and the RIM test are the most appropriate tests for establishing goals in this docket, but there is no specific test required by those changes.

Q. Do you think it is important that the Commission, regardless of which test they choose, consider the rate impact of any measures on consumers?

A. Yes, I do, and that's consistent with my testimony.

MS. KAUFMAN: Thank you, Mr. Dean.

Thank you, Mr. Chairman.

CHAIRMAN CARTER: Mr. Cavros, you're recognized.

MR. CAVROS: Good afternoon, Mr. Chairman.

CROSS EXAMINATION

BY MR. CAVROS:

Q. Good afternoon, Mr. Dean. How are you?

A. Good afternoon.

Q. On Line 20 -- Pages 29 and 30 of your testimony you discuss the two-year payback, is that correct? The criteria for excluding measures because of the two-year payback, I should say.

A. Starting at Line 17, yes, that's correct.

Q. Mr. Dean, are market barriers different for different measures?

A. Would you give me a definition, please, of what a market barrier is?

Q. Do you know what a market barrier is, Mr. Dean?

A. There's different definitions floating around. In the context of being responsive to your question, I would like to know what your view of a market barrier

is.

Q. Sure. Well, how would you define it?

A. I've heard various definitions, but I don't necessarily believe I agree with all of them. What I hear people say is, for example, that a market barrier is the fact that the renter and the owner have, perhaps, disparate objectives in terms of installing measures. I'm not sure if that's a market barrier. To me a market is someplace where people are invited to do transactions. And if there is a barrier to that market, then it has to do with the goods and services that the market is offering. So I'm not trying to be evasive, I need a working definition to be responsive.

Q. Sure. I actually just maybe wanted to offer an example, for instance, access to financing.

A. No, I don't think I would call that a market barrier. That's a situational circumstance that many of us find ourselves in. And if I had that access to capital, perhaps I would participate in a market.

Q. I'm sorry. How about just barriers to adoption of energy efficiency measures?

A. I can see that there are information barriers to making efficient choices in markets, that I concede. And if that is your definition, I will be happy to respond. So do you want to follow up with that

explanation?

Q. Sure. Let's use access to -- would access to financing be a barrier to adopting an energy efficiency measure?

A. It could be a barrier for people to engage -- buy the product or install the measure, yes, I will concede. I'm just not sure if it's market imposed or it's a situation that exists for people that --

Q. Understood. Understood.

A. But perhaps to help this along, I do think there is information challenges for folks to make good choices in the market. So if you want to call that a market barrier in terms of having suitable information to be able to make good choices, I will say those barriers do exist.

Q. Okay. And would a split incentive be a market barrier or, I'm sorry, a barrier for energy efficiency implementation?

A. You could -- for purposes of discussion, I will accept that you define that as a barrier.

Q. Okay. Fair enough. If you accept that as a barrier, then different measures would experience different barriers, is that correct?

A. Let me go back to my example of what I would consider perhaps a market barrier in a truer sense. The

information differences, I do think that would affect people's decision to buy different energy efficiency appliances. And let me give you an example, a real world example. When you go to Lowe's, or one of the Big Box stores, or Sears and you are needing to replace a refrigerator, there's usually several different models there. And they often have different features, but all of them now contain one of those yellow tags that shows the annual energy usage.

And if I'm a consumer, and I need to replace a refrigerator, and I go and I open the doors and they are basically the same box, and one of them is a high-efficiency model and one is perhaps less efficient, and there is two different prices, and I see that one uses 400 kilowatt hours a year, and the other uses 500, and I see the cost difference is $50. I think the information barrier is very minimal there.

I mean, fundamental math would allow me to kind of estimate what the energy savings are, and they even give you a typically kilowatt hour charge on that yellow tag. So you can quickly say for $50 more it looks like I'll save, you know, $70 a year. That is what I would call a very minimal information barrier to make a rational choice.

Perhaps a more complicated barrier would be if

you wanted to install a whole set of new windows in your house, and the thermal effects of your heating and cooling load with those windows could be quite dynamic, depending on how much glass you have and which direction the windows face. In that case I think the information to make a pure economic choice would be more difficult to obtain for an average person. So if you want to call that a more rigorous barrier, I agree those kind of differences and information exist.

Q. And I don't want to belabor the point, but those -- the level of those barriers would be different for different individuals?

A. Yes.

Q. Okay. And do you know whether these different barriers would lead to different adoption curves for different measures?

A. I don't know if I can talk about adoption curves. I will concede that people's decision rules would be different, and to the extent that different percentages of people, you know, would make those decisions based on the information available to them, I can see different purchase rates, but --

Q. Okay. Fair enough. And is it correct that on Page 30 you testify that determining the appropriate incentive requires that a utility must find a balance

between paying too much in incentives and thus paying unnecessarily for free riders, or paying too little and not meeting the goals?

A. Yes, that's correct.

Q. Mr. Dean, have you ever analyzed the adoption patterns of free riders versus non-free riders for particular measures?

A. No, I have not looked at adoption rates for any individual measures, at least not part of this docket.

Q. Sure. And have you looked at adoption rates for any group of measures or programs in Florida?

A. Yes. When I was a member of staff, every four years we would require the utilities to do surveys of a very large sample of homes in the state stratified by different climate zones and allocated by utilities, and I was responsible for proposing that rule and ultimately implementing it. And through those we kept track of the state of the housing and appliance fleet. And by that, I mean, the people who did the surveys would go to the house and see what the efficiency ratings on the air conditioner were, how many square feet of house was average windows. It was a very detailed analysis. And so in that sense I was aware of sort of the penetration rates of certain appliances, and

window air conditioners and, you know, pool pumps, and things like that.

Q. Okay. Any other studies?

A. Just technical studies I have read from other states that, you know, have tried to project adoption rates of new technologies.

Q. Okay. And does -- okay, and let me go back to Page 30 of your testimony. You discuss the discount rate estimates from the academic literature. Is this the basis for your conclusion that a two-year payback criteria is appropriate?

A. Yes, that is the basis. And if I may elaborate on why I make that recommendation. I was asked by Florida Power and Light as part of my work for them is to find out how the two-year payback decision, which dates back, I understand, to like the 1994 goals docket when it was first used and subsequently approved by the Commission in other goals setting dockets, to see how did that marry up with the research. And what I did is instead of doing -- looking at sort of applied studies in terms of DSM program managers, I went to the academic literature and said how do people make decisions to purchase energy efficient appliances and measures.

I reviewed perhaps 30 academic articles. And

in the academic literature they don't look at payback periods or penetration curves; they talk about consumers decision rules. And one of those decision rules, and there are multiple decision rules when a customer buys something, is the discount rate.

Now, to be fair, there is not a direct connection between a discount rate and a payback, like the two-year payback. I think as Witness Rufo commented on, they are related, but there is not a mathematical equivalency between the two.

My review of the literature indicates that when you look at discount rates that for most consumers, and there is a range, I admit, 30 to 40 percent a year discount rate would be pretty typically what the literature finds in terms of the academic studies. Based on that, I concluded that somewhere between a two, up to a three-year discount -- I mean, payback period would reflect what the academic literature had found.

So, in sum, my check was sort of a -- I don't want to say a sanity check, but it was just sort of a confirmation that the two-year payback was not out of line with what the research indicated in the field.

Q. Thank you. And how much penetration would you get with a one-year payback?

A. A one-year payback?

Q. Yes. If you were to use a one-year payback criteria instead of the two?

MR. GUYTON: Objection. I'm not sure the question lends itself to an answer. Are we talking about for a specific measure or --

MR. CAVROS: Yes. Let me rephrase that.

BY MR. CAVROS:

Q. Would the penetration rate differ for measures if you were to reduce the payback criteria to one year?

A. Would you repeat that one more time?

Q. Sure.

A. It would be helpful if you would use maybe an example as opposed to broad statements.

Q. Sure.

A. I will be able to be more precise in giving you an answer.

Q. Let's go back to the two-year criteria. Are adoption rates similar for all measures?

A. I really don't speak to adoption rates in my testimony. And I don't mean to be evasive here. I talk about what the academic literature reflects in terms of people's discount rates, and I admit those discounts vary by study and by the type of appliance or measure that is being purchased. So there is a variation in discount rates.

Discounts are only coincidentally related to the payback periods contained underneath them. They are not -- as I said earlier, they are not mathematically equivalent, so I can't tell you what a discount rate of 25 percent would result in.

Q. Well, then, could you explain to me how a discount rate relates to the balancing you mentioned that the Commission has to do between paying too much in incentives?

A. Sure. The Commission has to balance how much do you spend for incentives to increase participation and how do you, you know, at the same time minimize the cost of the programs and the underlying cross-subsidies, and that's the balancing act. And so for purposes of this DSM goals-setting docket and earlier dockets, the utilities have previously said it seems to us that any measure that has a payback of two years, which means you recover all of your capital expenses within two years, that most people have an economic incentive to do that. And I agree with that.

My charge was does that reflect real world behavior that the research scientists that study consumer behavior and economic choice behavior, and the answer is yes. I actually believe that most discount rates that I found in the literature would suggest that

a three-year payback would capture most customers willingness to engage in energy-efficient purchases. The two-year is being extraordinarily generous towards DSM. You are probably picking up more free riders than is really necessary if you used a -- than a three-year payback.

Q. But, Mr. Dean, how can you -- if you don't know the measure adoption of these measures, how can you do this balancing act?

A. I will not be doing that balancing act. The Commissioners are doing that balancing act. I am just saying that the two-year payback comfortably matches the estimates from the academic literature of what they find over, you know, 15, 18, 20 studies that I've looked at.

And you are quite right, Mr. Cavros, they do vary by the study, but that would happen naturally, because when you do one study it has a different research design than another study. So the estimate of what the underlying discount rate will vary by the study and by what they are looking at. In some cases they were looking at Big Box purchases, like the refrigerator examples. Others they were looking at furnace change-outs.

And not every measure has been studied. I mean, I think the Itron study had over 2,000 measures.

I found in the academic literature about 20 or 30 studies. That does not cover the universe of every measure that's offered out there on the marketplace.

Q. So then, Mr. Dean, you would agree that as the Commission does its balancing act, the measure -- the level of measure adoption of these various rates that the two-year payback criteria is applied to is an important consideration, is it not?

A. Yes. The two-year payback is a very important consideration in designing the goals.

Q. No, that wasn't my question. My question was isn't the measure adoption rate of those measures that are excluded because of the two-year payback an important consideration for the Commission as it sets its goals going into the future?

A. Yes. I think that is an important consideration as they set the goals. And, again, the two-year payback seems to adequately balance the need to encourage participation into those programs that pass the enhanced RIM test, and at the same time not encourage free riders to take the money for programs they would otherwise have done on their own.

Q. Sure. But the caveat to that is that part of the information that you need is how these measures are being adopted in real life, what the measure adoption

rate is of these measures that will be excluded because of the discount rate and the two-year payback criteria that you have discussed now, isn't that correct?

A. Yes. And, again, the academic literature says that most customers will take a three-year payback and on average buy the measure. That's what the real world literature reflects. So why you would incentivize someone at a two-year level when the literature says there is plenty of folks that have a discount rate of even three years? It kind of tilts it to the side of paying too much for free riders, in my opinion.

Q. Uh-huh. Does that mean there is 100 percent penetration of these measures?

A. No, sir, it does not. These are what economists call point estimates, and so they would be -- they would be customers that would -- that would vary on either side of that. And so it doesn't mean 100 percent participation. It means that would be the average discount rate for the customer observed in that study given the parameter estimate. That's a fancy term for saying the estimation of what it was.

Q. Sure. And isn't it true that the market adoption of those measures could range anywhere from 20 to 80 percent? If I were to say that, wouldn't that be true?

A. I can't comment on what the adoption rates would be for any given measure.

Q. I understand. I'm not asking for your opinion on a specific measure. This is theoretical in -- or, rather, this is more of a theoretical construct related to your testimony. And I think it's a pretty straightforward question. The measures that are excluded because of the two-year payback and have different adoption rates, they can range, for instance, from 20 to 80 percent. Wouldn't that be correct?

A. Did you say they would have different adoption rates that vary between 20 and 80 percent?

Q. Let me rephrase the question. If I were to -- it would be reasonable for me to find measures that have been excluded because of the two-year payback to have adoption rates from 20 to 80 percent, is that correct?

MR. GUYTON: Objection. I think the witness has already testified that he hadn't looked at specific measure adoption rates. If there's an example that Mr. Cavros can put in front of him to demonstrate his point, perhaps he can address it, but I think he's asking him to assume facts.

CHAIRMAN CARTER: I don't think it was a question anyway. Let's rephrase.

BY MR. CAVROS:

Q. Sure. For a low-flow showerhead, which several witnesses have said has been excluded by the two-year payback, is it reasonable that it would have -- that it would have different adoption rates among customer classes?

A. Let me see if I can restructure your question and perhaps be responsive. You're saying that a low-flow shower has a very fast payback. Is that the assumption?

Q. Yes, that is the assumption, sir.

A. For discussion purposes let's say it pays back in six months. Is that --

Q. (Indicating yes.)

A. Okay. In that sense, the academic literature would suggest that most people would invest in a product if it had a discount rate between two -- I mean, a payback of two to three years, which is around a 33 percent discount rate. If it has a six-month payback, a huge percentage of folks would adopt that measure. I don't know the number, but it would be the vast majority of customers will buy something with a six-month payback.

So in that sense, the penetration, I think, using your terminology, would be very high for that

measure on an economic basis, but as I said earlier, a lot of other factors determine if people engage in purchasing energy efficient appliances or low-flow showerheads. And I think we heard earlier that some people don't like the water spray because it doesn't give them enough pressure, or heat, or whatever. So I don't want to say that 80 percent of the customers would install low flow showerheads because there is a six-month payback, because there is a lot of other considerations of why they would or would not purchase that energy measure.

Q. Mr. Dean, if there was an energy efficiency commercial measure which had a high adoption rate that was excluded by the two-year payback criteria, is it possible that it could have different adoption rates within the different commercial classes, commercial subgroups?

A. Again, without a specific measure, I'll attempt to answer this. Yes, different customer classes will install different measures at different rates. But, again, the literature suggests that commercial/industrial classes -- and this was a bit of a surprise to me, because you always think that the commercial and industrial customers are the ones that can calculate down to the penny what their required

discount rate is, or return on investment, and they would immediately do these.

I was surprised to discover in my research that the discount rate for commercial accounts was very similar to residential customers. And as I delved a little deeper in literature, the answer to that is partly because of the information costs to be able to identify what measures work, but another part of that is that the commercial accounts have -- for many commercial accounts their energy cost is a relatively small portion of their bill. And given that they are running a restaurant, or a laundry, or a grocery store, they don't really necessarily, you know, look at energy costs as something they spend a lot of time looking at the return on investment in.

So, if you go to a -- but they do, in fact, you know, engage in energy efficient behavior at discount rates equivalent to the residential class, which, again, is in the range of two to three years. So my conclusion was even for the commercial accounts, the two-year payback was a reasonable standard to balance the need to encourage participation and at the same time not overspend ratepayers' money to encourage free riders. And I am probably wandering on too long with that answer, but --

Q. Could I ask you to refer to Mr. Rufo's exhibit in his direct testimony. It is MR-11, and I will hand it you. And it's Exhibit MR-11, Page 7. There is a graph entitled, Example Measure Implementation Curves Used in Adoption Model. I have a couple of quick questions in reference to that.

A. I'll take a shot at this, but there is a lot -- a lot of curves here.

Q. Sure.

MR. CAVROS: Can I proceed, Chairman?

CHAIRMAN CARTER: You may proceed.

MR. CAVROS: Okay. Thank you.

BY MR. CAVROS:

Q. Based on the graphs in this table, is it correct that different measures face different barrier curves?

A. Yes, but I don't know what his definition of a barrier is. But I will accept the fact that the curves vary.

Q. Okay. And does this suggest that in order to address free riders with respect to moderate and high barriers, the appropriate incentive level would be different for those measures?

MR. GUYTON: Objection. I'm not sure it has been -- we have laid a foundation that Mr. Dean is

familiar with this or that he knows whether this is generally adoption curves or these are adoption curves out of the DSM ASSYST model.

MR. CAVROS: Okay.

CHAIRMAN CARTER: Why don't we lay a foundation and see if he can identify the spaghetti.

MR. CAVROS: Actually, we'll move on.

CHAIRMAN CARTER: Okay. Thank you.

BY MR. CAVROS:

Q. Mr. Dean, could I point you to the footnote -- MR-11, Page 5, and there's a footnote there at the bottom.

A. Could I have just a moment, please?

Q. Yes, absolutely.

A. Okay. I think I've got the gist of it.

Q. Great. Thank you. Is it correct that according to the scenario outlined by Mr. Rufo, that is a measure with a 15-year life and a 15 percent discount rate, at a one-year payback criteria, only one quarter of the market would adopt the measure on a high barrier curve?

A. That is what it says here, but I'm not sure if that is accurate. As I said, there is a distribution -- when you look at a discount rate there is a distribution of customers on either side of that point estimate. And

I don't know the shape of that distribution, so I can't confirm that Train, Atherton and (phonetic) whoever wrote this article, I don't know what that distribution is.

Q. Would you say that -- would you characterize it as Mr. Rufo --

A. Let me say I generally agree with Mr. Rufo's footnote that residential customer discount rates can be high, and my literature suggests they can be 100 percent. But out of the studies I have looked at that was really the highest discount rate. Most of them fall in a 30, 40, 45, 50 percent. And, again, I think your earlier point is the variation in the discount rate is dependent on the information search cost and how much the customer understands the measure of the item they are buying.

And, again, I'll go back to the refrigerator example versus the changing out all of your windows. I think the refrigerator decision would be a very clear, rational choice to make, and the customer would accept a payback, perhaps, of three or four years, because he knew it would -- he would get his money back because the information is on the yellow tag.

Changing out windows that cost 10 or $20,000, but it will save you some energy, they might require a

much faster payback to do that, because they are not sure how much they are going to save. So I will agree that there is different -- I think your word is penetration rates for different measures. But I can't confirm Mr. Train and Atherton's statement here.

Q. Okay. Mr. Dean, if a measure has been available for a lot of years, and, therefore, enjoys a good level of saturation, would you expect that more of the potential free riders would have already adopted the measure compared to a measure that has just been recently introduced into the market?

A. I would agree that the more people understand the product they are buying and the measure, the more likely they are to make an economic choice to install it, everything else being equal. That is, they like the color, they like the features, whatever it is besides economics that go into their decision. And I think the utilities have indicated that for these measures that have a very fast payback, which means it is in their economic interest to do them, that they try to provide that information through a variety of venues and programs like the audits, the on-line surveys, even the Progress light guy that we see in the paper up here.

I mean, that is conveying that kind of information that these measures are very rational, they

have a very quick payback, they will help you control your energy bill. So, yes, I would anticipate higher saturations for measures that are well-known and the utilities have given a lot of public information about.

Q. And because of that saturation, there would be a lower percentage of free riders, is that correct?

A. The pool of people that would take the incentive and not do it would be smaller, yes, I concede that.

Q. Okay. And if we could just turn to Page 22 of your testimony for a moment. And I'll be finishing up here shortly.

You state on Page 17, the TRC test does not include all DSM-related costs, and, therefore, it is a fundamentally flawed test. Do you see that?

A. I was on Page 22. Did you --

Q. I'm sorry. It was Line 16, if I didn't mention.

A. On what page?

Q. Page 22, Line 16.

A. Oh, okay. Yes, I see that.

Q. I assume by that you mean utility incentives?

A. Yes.

Q. On page -- starting on the last line of your rebuttal testimony, Page 46, and going to Page 47.

A. I'm sorry. Are we on my rebuttal testimony?

Q. We are not. You know, I can address the issue now or I can wait.

CHAIRMAN CARTER: Wait.

MR. CAVROS: Then that's all for us right now.

CHAIRMAN CARTER: Ms. Brownless.

CROSS EXAMINATION

BY MS. BROWNLESS:

Q. Good afternoon, Mr. Dean.

A. Good afternoon, Ms. Brownless.

Q. You are the principal and owner of Weldon-Dean Associates, is that correct?

A. Yes, ma'am, that's correct.

Q. Okay. And when did you leave the PSC?

A. July 5th or 6th, 2007.

Q. And when did you found your firm?

A. My wife made me get a job January of 2008.

Q. And is it fair to say that being selected by the FEECA IOUs, which are virtually all of the electric utilities in the state of Florida, to perform this study as you've described it and to provide testimony here is a significant milestone for your firm?

A. I'm very proud to have the opportunity to work with the utilities, and I think this is the first case that I have represented -- not represent them, but I

have been a witness for them. So, yes, I'm pleased with that opportunity.

Q. Okay. How many times have you provided testimony as a consultant before this?

A. Under oath this is my first time. I participated in the renewable portfolio workshop, and it was more of a public comment.

Q. Okay. This is my last question on this topic. Can you give me an idea of what percent this job represents of your receivables in the last six months?

A. For the last six months it would probably be about half of my receivables this year.

Q. Thank you so much. And, Mr. Dean, you also are not JD impaired and are not an attorney, is that correct?

A. No, ma'am, I'm not an attorney, but I was given some special legal training here. I have what is called a Class B Practitioner's license that allows me to cross-examine witnesses in cases, even though I was a technical staff person.

Q. Okay. So you have been accepted as a -- I can't remember what the rules call it, but a personal representative under the Commission's rules?

A. I think it's Class B Practitioner.

Q. Class B.

A. Yes. And, in addition, I worked within the statute for 24 years of my career. That was the confines of what I -- from the day I started to the day I left, Chapter 366.

Q. Okay.

A. And, furthermore, I actually implemented several of the rules that were required to be adopted because of some of the changes to the chapter. I was either the person that drafted the rules or supervised those that did. And, of course, you taught me a lot about Chapter 366 when you were here, so I feel like I have some familiarity with the chapter.

Q. But you are not a -- you don't have a JD, is that correct?

A. No, ma'am.

Q. Okay. And is it fair to say that your testimony is based on just exactly what you describe, your extensive experience in the field?

A. Yes, that's a fair characterization.

Q. On Page 23 of your testimony, sir, you reference 366.823, is that correct?

A. Yes.

Q. Okay. And I'm going to assume that in preparing for your testimony today you read the entire House Bill 7135, is that right?

A. That would not be a true assumption.

Q. Okay. I'm shocked, Mr. Dean.

CHAIRMAN CARTER: That's one thing you forgot to teach him.

BY MS. BROWNLESS:

Q. What part of House Bill 7135 did you not read?

A. Well, it was 236 pages long. It covered everything from reorganization of the energy office, to bio-diesel, to power plant siting, to funding for grant programs, to some planning changes, and the changes to FEECA was a rather minor part of the entire bill. I am very familiar with the sections of 366 that were affected. I cannot speak to the other approximately 234 pages of changes in the bill.

Q. Okeydokey. I handed you an excerpt from 7135. Do you have that, Mr. Dean? And I'm going to acknowledge on the record right now that the fat underlining there is my underlining. But with that caveat, does that look like House Bill 7135?

MR. GUYTON: Suzanne, I'm sorry, but I'm not finding that reference. Could I get another copy?

MS. BROWNLESS: I handed them all out, Charlie, yesterday, remember?

CHAIRMAN CARTER: Is that the one -- hang on a second. Is that the one from yesterday?

MS. BROWNLESS: Yes, sir, the same one.

CHAIRMAN CARTER: Okay, boys and girls, hang on.

MS. BROWNLESS: Huh-uh. It looks like this. I handed it out yesterday.

CHAIRMAN CARTER: Staff would you -- thank you. Okay. You may proceed.

MR. GUYTON: Commissioners, I apologize.

CHAIRMAN CARTER: That's all right. You may proceed.

MS. BROWNLESS: Thank you. And, Commissioners, do you have that document?

CHAIRMAN CARTER: Absolutely, of course.

MS. BROWNLESS: Thank you, sir.

BY MS. BROWNLESS:

Q. Let me ask the question again, Mr. Dean.

A. Yes. Would you please repeat what you asked, and I think I will affirm it pretty quickly.

Q. Okeydoke. With the exception of the dark underlining, is that a true and accurate copy of those sections of House Bill 7135?

A. It appears to be a type and strike version of those sections of 7135 that were inserted into 366.81, so, yes.

Q. Okeydoke. Now, when I look at Section 38 of

House Bill 7135, which is the 366.81 section, is that a section that you have reviewed in preparing your testimony today?

A. Yes, I have.

Q. Okay. And demand-side renewable energy systems, that phrase, has it basically been added to this particular section, and I'm looking at Section 38 of the bill, approximately four times?

A. Yes, that would be fair.

Q. And is it fair to say that the language promotion of demand-side renewable energy systems is included in that language that has been added, Line 2329 on Page 84?

A. You mean it finds and declares that it is critical to utilize, is that the line?

Q. No. On the exhibit that I gave you, or the copy, it is -- do you see the lines on the left-hand side?

A. Yes, yes.

Q. So 2329, Line 2329 does it say promotion?

A. To adopt the goals and approved plans related to the promotion of demand-side renewable -- yes, I have got that now.

Q. Okay. And that language, promotion of demand-side renewable energy systems, was added,

correct?

A. Yes.

Q. And, again, on Lines 2333 and Lines 2334, it states that -- authorizes the Commission to require each utility to develop plans and implement programs for increasing energy efficiency and conservation, and it adds specifically, and demand-side renewable energy systems, is that right?

A. Yes, that's fair.

Q. And if I look on the next page on Line 2352 and 2353, it indicates that the Legislature further finds and declares that 366.80 through 366.85 and 403.519 are to be liberally construed to encourage in order to meet the complex problems, and goes on to say encouraging further development of demand-side renewable energy systems, right?

A. Yes.

Q. On lines -- I'm sorry.

A. Yes, that's correct.

Q. Okay. And that the demand-side renewable energy systems was added there, as well?

A. (Indicating affirmatively.)

Q. If I turn to the next page it defines demand-side renewable energy systems on Lines 2374 through 2378, right?

A. Yes, that's correct.

Q. Okay. And that definition was also added to the statute, correct?

A. Yes, ma'am.

Q. And, basically, what this says is that a demand-side renewable energy system is, and I'll shorten the definition, solar thermal, which is hot water heaters, and PV less two megawatts or less?

A. Yes, ma'am.

Q. Now, I have also handed you out Section 377.61. Did you see that?

MS. BROWNLESS: And, Commissioners, you have got a copy as well I gave.

CHAIRMAN CARTER: Yes.

MS. BROWNLESS: Thank you.

BY MS. BROWNLESS:

Q. And can you take a minute to read this since, apparently, this is a section that you may have skipped in your review?

A. I am somewhat familiar with this section of 377.

Q. Okay.

A. Are there specific areas you want to direct me to?

Q. Yes, sir. Do you have a copy of House Bill

7135 with you?

A. Not all 236 pages, just what you have given me here.

Q. All right. Well, let me share mine.

CHAIRMAN CARTER: I think this is part of the other 200-plus pages he didn't read.

MS. BROWNLESS: I think so.

MR. GUYTON: May I approach?

CHAIRMAN CARTER: Absolutely. You may approach. No dancing in the chamber here.

MS. BROWNLESS: There were changes made --

CHAIRMAN CARTER: Hang on, Ms. Brownless. We need to pick you up with the system. Are you going to ask him a question or something?

MS. BROWNLESS: Well, we're all having to share the same book, so --

CHAIRMAN CARTER: Okay. The microphone will pick you up.

MS. BROWNLESS: Does that --

CHAIRMAN CARTER: We've got you.

BY MS. BROWNLESS:

Q. With regard to Section 44 of House Bill 7135, do you see that?

A. Uh-huh.

Q. Okay. And that's entitled 377.601, correct?

A. Yes, that's what it says.

Q. Okay. Were alternative energy technologies added to Paragraph 1 under this section?

A. Yes, it appears to be written here. I'm sorry, typed here.

Q. And if I can get you to look at the statute that was handed out, that would be the first paragraph of Section 377.601 as stated there, correct?

A. Yes, they should match up.

Q. And if you look at Paragraphs H and I?

CHAIRMAN CARTER: Can you hear? We are going to probably need, Ms. Brownless, because we have Commissioners on the phone and listening, so we probably need you to get a little closer to the mike.

BY MS. BROWNLESS:

Q. Can you look at H and I, sir?

A. Yes, I see them.

Q. And in Paragraph I it says that they will encourage the research, development, demonstration, and application of alternative energy resources, particularly renewable energy resources, is that correct?

A. Yes, that's what it says.

Q. And if I turn on your statute sheet to the next page, and to the definition of 377.602?

A. 377.602, definitions, yes, ma'am.

Q. And there was a definition --

CHAIRMAN CARTER: Hang on a second. Hang on. Chris, can we get the portable mike for her?

MR. POTTS: Too close?

CHAIRMAN CARTER: Okay. Well, you guys are going to have to share that one. Go ahead. I was just going to try to make it easy, but you are going to have to share that one. Go ahead. Okay.

MS. BROWNLESS: I'm sorry, sir.

CHAIRMAN CARTER: Not a problem.

BY MS. BROWNLESS:

Q. The definition of energy resources in Paragraph 2, do you see that?

A. Yes, I see that.

Q. Okay. And will you read the definition under 2A?

A. Energy converted from solar radiation, wind, hydraulic potential, tidal movements, biomass, geothermal sources, and other energy resources the Commission determines to be important to the production or supply of energy.

Q. And that would include --

CHAIRMAN CARTER: Get a little closer, Ms. Brownless. Get a little closer to the mike.

MS. BROWNLESS: I'm sorry, sir. I'm going to sit down after this.

BY MS. BROWNLESS:

Q. And that would include solar hot water and solar PV, is that correct?

A. I believe it would.

Q. Now, in your testimony you indicate on Page 4, Line 22, that you are testifying about -- well, you're giving your opinion regarding the compatibility of FPL's goals process with FEECA and the DSM goals rule, correct?

A. Yes, that's correct.

Q. Okay. And 366.82 is included in FEECA, is that right?

A. Yes.

Q. Okay. And with regard to House Bill 7135, the additional language we just discussed regarding alternative energy technologies and energy resources was added to that bill, correct?

A. I presume the underlined parts are new, yes.

Q. Yes. Okay. So would that also be legislative intent that the Commission should take into account?

A. I don't believe so. And the reason I don't believe that's applicable, those changes in 377 largely refer to some broad policy objectives that are

really under the purview of the Florida Energy and Climate Commission. I believe that reference you made is to the FECC, not to the Public Service Commission. And, in fact, there is an exemption in the entire section of 377 that it shall not -- I don't have the exact quote, but it says something to the effect that nothing in this section shall impair or restrict the duties and responsibilities of the Florida Public Service Commission. So, to be frank, I don't think any of this is applicable, either intent and clearly not statutory authority for the Commission.

Q. Okay. However, would you agree that the language in 366.81, which you do think is applicable to the Commission to encourage demand-side renewable technologies, is consistent with the language in 377.601 we have just discussed?

A. Yes. I will concede that one of the -- some of the changes in 366, which is the Commission's authorization or authorizing statute, does place renewed attention to demand-side renewable energy systems. But there is a very important portion in here that I need to bring to the Commissioners' attention, and that is in adopting goals the Commission shall adopt appropriate goals, including goals for demand-side energy renewable systems, and there is a tremendous amount of discretion

that the Commission has to define what those goals are.

And if I could just give you an example. There is also language in that section that says you should adopt goals to conserve expensive resources, such as petroleum. And there was a time under the FEECA that the Commission actually had a numeric target to reduce oil usage by so many million barrels a year, and you no longer have that goal. And so you have a wide discretion to adopt goals that are appropriate to the circumstances and to the information -- to the facts in front of you.

And so I'm not sure that they are required to adopt goals for any of these identified; controlling peak demand, controlling weather sensitive load, conserving expensive resources, such as petroleum or demand-side renewable systems, unless they are appropriate goals.

And if I could further play that out, you once had a goal that required so many audits to be done.

Q. Excuse me, Mr. Dean.

A. I'm sorry, I didn't --

Q. I think that goes a bit beyond the question I asked.

A. Okay. I apologize. I'm still practicing at this.

Q. It's harder than it looks, isn't it, Mr. Dean?

Would you agree with me that based on this language, the PSC is required to consider demand-side measurement technologies in establishing goals?

A. Yes, ma'am, I would. And those considerations were contained in the plan that my client submitted. The demand-side renewable energy systems were part of the measures were that evaluated.

Q. Is it fair to say that the demand-side measures were evaluated for cost-effectiveness on the same basis as other energy efficiency measures?

A. Yes. I believe those measures were subject to the same screening analysis, but there is more qualified people that could speak to that to confirm that statement.

Q. Okay. Have you had an opportunity to review Mr. Spellman's approach?

A. You mean his direct filed testimony?

Q. (Indicating affirmatively.)

A. I have looked at Mr. Spellman's testimony. It is not addressed in my direct, though.

MS. BROWNLESS: And let me tell you before the objection comes, sir.

CHAIRMAN CARTER: Okay. I hope you can save us an objection.

MS. BROWNLESS: I'm doing my best.

CHAIRMAN CARTER: Okay.

MS. BROWNLESS: Why I believe discussing this with Mr. Dean is appropriate. It's on Page 5, Lines 1 to 2 of his testimony.

BY MS. BROWNLESS:

Q. And there you indicate that you are offering an opinion as to the reasonableness of FPL's resulting DSM goals, is that right?

A. Yes.

Q. And, obviously, is it fair that FPL's DSM goals do not include any goals for demand-side renewable technologies?

A. There are no numeric goals in the enhanced RIM and proposal in DSM.

Q. Because the solar technologies did not make it into the pool of measures that supported the development of the goals, right?

A. That's what other witnesses said, and I believe Witness Spellman concedes that they were not cost-effective in his testimony.

Q. I just want to hand you Page 76 of Mr. Spellman's testimony that talks about his treatment of demand-side renewables.

A. Okay.

MS. BROWNLESS: Commissioners, would you like the same page?

CHAIRMAN CARTER: No, I'm going to trust you for a minute. Give him a chance to look it over. I assume you're going to cross-examine him on that page, right?

MS. BROWNLESS: Well, I am, yes, sir.

CHAIRMAN CARTER: Okay. Well, hang on a second. Let him look it over and then fire away.

THE WITNESS: Is this the 25 million that you have referenced a couple of times about the 10 percent of the ECCR funding?

BY MS. BROWNLESS:

Q. If you add them up, it's 25.5 million.

A. I trust you completely.

Q. Thank you, sir. Is it fair to say that Mr. Spellman's approach -- well, is Mr. Spellman's approach -- well, strike that. Mr. Spellman has, basically, advocated a pool of money to be set aside each year for five years and solar programs incented based on that money, is that correct?

A. That's what I understand.

Q. Okay. So Mr. Spellman is not advocating a particular megawatt hour or megawatt goal for those programs, right?

A. I have to refresh, but I'll trust that that is what his recommendation is, a pot of money. I believe it was the other witness that wanted a megawatt goal.

Q. Okay. And so Mr. Spellman's approach creates this pot of money to incent solar programs whether those programs pass the cost-effectiveness test or not, right?

A. That's what I believe he says.

Q. Would you agree that Mr. Spellman's approach lowers the barrier to developing solar through granting incentives?

MR. GUYTON: Mr. Chairman, I apologize. I mean, this is beyond the scope of the direct. It is something that is addressed in Mr. Dean's rebuttal.

CHAIRMAN CARTER: Let's stay within the confines, Ms. Brownless.

MS. BROWNLESS: Well, to the extent that it's addressed in his rebuttal and I can pursue it there, I'll happily do so.

CHAIRMAN CARTER: Okay. Let's do it then.

BY MS. BROWNLESS:

Q. Now, you have offered your opinion about what House Bill 7135 has done to Section 366.82, is that right?

A. Yes, I have. Do you want to direct me to the page, so --

Q. Well, you referred to that --

A. You are just summarizing? Okay. I didn't know if there was a specific thing you wanted to refer me to.

Q. Okay. And I'm just going to ask you a few questions about that.

A. Okay.

Q. Do you believe that the changes in 2008 added greater emphasis to cost and benefits to program participants?

A. If I may have the liberty to answer that in perhaps a broad way. I can't tell you exactly what those four considerations, the intent of them are. There are a couple of things I am comfortable about commenting on them. One is there is clearly no required single test that the Commission is supposed to use. The first item in that list of consideration talks about looking at the impact on participants.

The second one talks about looking at incentives and participants. The Commission does that now with its existing suite of cost-effectiveness tests. Those considerations are already being done at this Commission. I think, if anything, it's an affirmation of the process that the Commission currently uses.

The third item is the consideration of the

need for incentives for demand-side energy renewable systems. I think that consideration has been contained in the filing of Florida Power and Light, as I discussed earlier. They looked at incentives to see if they passed those tests. They did not.

The fourth consideration is the consideration of the cost of greenhouse gases. Florida Power and Light took that one very much to heart. They submitted an entire new RIM analysis, the enhanced RIM. Real dollar values were run in the analysis for the first time, and they are proposing goals where those avoided benefits increase the number of DSM programs.

So I think what I am comfortable inferring about the intent of those changes is that they are being considered. The analysis has been given to the Commission to consider them, and at least in the case of my client and the other three IOUs, they took the fourth one very much literally and included environmental costs.

Q. Do you believe that consideration of utilities' costs, such as lost revenues, was de-emphasized by the legislative changes in 2008?

A. No. I actually think the Commission was given a new consideration about lost revenues. If I could direct the Commission's attention to 377 -- the

numbering system confuses me, because we have established I'm not an attorney, but it's 366.82, Subsection 7. There was new language added as part of House Bill 7135, and if I could read it, it's very, very short, but I think it is significant because it re-emphasizes the attention I think this Commission has given historically, and this Commission currently has language to give to the rate impact.

Let me read it. The Commission may require modifications or additions to a utility's plans and programs at any time it is in the public interest consistent with this Act. And here is the important sentence: In approving (phonetic) plans and programs for cost-recovery, the Commission shall have the flexibility to modify or deny plans or programs that would have an undue impact on the cost passed to customers. That authority has not existed prior to HB-7135.

Previously if the utility was not meeting its goals, the Commission had the right to require additional programs, but you couldn't actually change unilaterally a program or modify it. In this case, if it has undue impacts on the costs to customers, you can modify or deny that program, I think, on your own initiative. And I think that's an important point,

because this speaks to rate impacts in my mind.

Q. Okay. And do you agree that the amended statute emphasizes promotion of renewable energy resources?

A. Yes. That has been highlighted a couple of times.

Q. Okay. Now, I handed you PSC Order 080802. Can you look on Page 3 of that order at the very last sentence. Very last paragraph, I'm sorry.

A. Is that where it says legislative changes in 2008?

Q. Yes.

A. Yes.

Q. Can you just read that little paragraph for the record, please.

A. Yes. Can I get some water here real quick?

Q. Sure.

A. The legislative changes in 2008 added greater emphasis to costs and benefits to program participants, the general body of ratepayers as a whole, and the need for incentives to promote renewable energy systems. At the same time, consideration of utilities' costs, such as lost revenues, were de-emphasized. The amended statute also emphasizes promotion of renewable energy sources and defines demand-side renewable energy

systems, including thermal energy, such as solar thermal water heating systems.

Q. So to the extent the testimony you have given today is contrary to that language, it's contrary to a previous order of the Commission, is that right?

A. And what would that previous order be that it is contrary to?

Q. The one you are reading from.

A. Oh, you mean my conclusion about --

Q. Yes. To the extent that your conclusions today differ from the language you have just read from this order, then they are contrary to a previous decision of this Commission.

A. Clearly, this language says that someone believes that has been de-emphasized. I believe that this authority is new and it talks about undue impacts. And, furthermore, there is a huge section in 366 that were not modified that has additional references to fair and just nondiscriminatory rates. And, moreover, they didn't modify 366.051, which is the self-service wheeling.

Q. Excuse me. The question is do you believe to the extent that what you have testified today is inconsistent with the language that you have just read from this order, your opinion is contrary to the

language of the order which is the ruling of the Commission in this case? That's a yes or no question.

CHAIRMAN CARTER: If you can answer yes or no, you can do that, but you will be entitled to explain your answer. You may respond.

A. It appears to be contradictory to my belief that authority was granted to look at rate impacts. But, as I said earlier, there's other statutory language in 366 that was not changed by House Bill 7135, and this Commission has always had a keen interest in rate impacts, and I don't believe, as a general principle, that HB-71 took away from any of that. It did not change any of the other statutory language about this Commission's consideration of rate impacts, this order notwithstanding.

MS. BROWNLESS: Thank you. That's all I have.

CHAIRMAN CARTER: Thank you.

Staff.

MS. FLEMING: No questions.

CHAIRMAN CARTER: Commissioners?

Redirect.

MR. GUYTON: Just a little bit.

CHAIRMAN CARTER: Turn your mike on.

MR. GUYTON: It is. I'll get closer.

CHAIRMAN CARTER: Okay. Well, get closer.

MR. GUYTON: Is that better?

CHAIRMAN CARTER: That's much better.

MR. GUYTON: Thank you.

REDIRECT EXAMINATION

BY MR. GUYTON:

Q. You were asked by Mr. Cavros about a passage in your testimony at Page 22, Line 17, the statement that the TRC test does not include all DSM-related costs. Do you recall that line of questions?

A. Yes, I do.

Q. Are utility incentives the only DSM-related costs not included in TRC?

A. No, they are not. The TRC test completely excludes the unrecovered revenue requirements that the utility would suffer because of the reduction in energy cells. That is an additional cost that the RIM test includes.

Q. You were asked by Ms. Brownless about your representation of FPL and then the investor-owned utilities in this case. And in that answer you made reference to having represented another entity in a renewable portfolio workshop. Was that entity a utility?

A. No, sir, it was not.

Q. Okay. You were also asked specifically about

some of the amendments to FEECA in House Bill 7135. Do you have a copy of what Ms. Brownless handed to you? I have the whole 7135 here, but if you have the abbreviated section with 366.81 with the underlining?

A. Those are the four considerations?

Q. No, this is the section before that, 366.81.

A. Oh, yes, sir. Yes, sir, I'm with you.

Q. Okay. And she asked you about demand-side renewables having been mentioned four times in Section 366.81 in the amendments. Do you recall that?

A. Yes, sir.

Q. Okay. In the first sentence where it's mentioned, what is the modifier of demand-side renewable energy systems?

A. Most efficient and cost-effective.

Q. And what do you conclude from those modifiers as regards demand-side renewables?

A. Well, again, I think that completely supports my earlier position that the Commission's current goals-setting authority using its existing suite of cost-effective analysis is still appropriate and demand-side energy renewable systems would be subject to the same cost-effective determinations as would an oil backout goal, or an energy efficiency goal, or a peak demand reduction goal, or a commercial sector goal. So

I think that modifier is appropriate and that has always been there.

Q. Now, Ms. Brownless also asked you to read on in that statute on the next page and the sentence about the sections of FEECA are to be liberally construed. Do you recall that? The sentence that begins on Page 85 of 237 on the document that she gave you. It begins at 2345.

A. Yes, I'm with you.

Q. All right. In that sentence she noted that that was another place where demand-side renewable systems had been inserted by the Legislature, correct?

A. That's correct.

Q. Now, it replaced another term, did it not?

A. Yes, it did.

Q. What was the term that it replaced? I'm sorry, I'll try to move this along. Did it replace cogeneration facilities?

A. Yes, it replaced cogeneration facilities. That was deleted.

Q. Now, did the Commission, when establishing DSM goals in prior dockets when the cogeneration facility was applicable under FEECA, did the Commission establish separate cogeneration facility goals when it established DSM goals?

A. I'm confident in the five goal-setting dockets that I have participated in there has never been a separate goal for cogeneration facilities.

Q. Now, you also made reference during that cross about the amendments to Chapter 377.703 -- I'm sorry, 377 by House Bill 7135, do you recall the specific --

A. Yes.

Q. And you made reference to another section of 377 that you believe was applicable. I'm going to show you a copy of House Bill 7135 and see if this will refresh your recollection as to the section you were referring to.

Have you had a chance to look at that section I handed you?

A. Yes, I have.

Q. Is that the section to which you were referring when Ms. Brownless asked you about the changes to House Bill 7135, or the changes to Chapter 377 and House Bill 7135?

A. Yes. That's the one I was trying to recall from memory, but this is the exact citation.

Q. Would you share that with the Commission, please?

A. Yes. It is relatively short, Commissioners.

CHAIRMAN CARTER: Give us the citation first.

THE WITNESS: It's Chapter 377.703(1). It is entitled, Legislative Intent, and it says, "Recognizing that energy supply and demand questions have become a major area of concern to the state which must be dealt with by effective and well-coordinated state action, it is the intent of the Legislature to promote the efficient, effective, and economic management of energy problems, centralize energy coordination responsibilities, pinpoint responsibilities for conducting energy programs, and ensure the accountability of state agencies for the implementation of 377.601, the state energy policy."

And that's what Ms. Brownless handed out, the state energy policy. "It is the specific intent of the Legislature that nothing in this Act shall in any way change the powers, duties, and responsibilities assigned by the Florida Electric Power Plant Siting Act, Part 2, Chapter 403, or the powers, duties, and responsibilities of the Florida Public Service Commission."

MR. GUYTON: That's all I have on redirect. Thank you, Mr. Chairman.

CHAIRMAN CARTER: Exhibits.

MR. GUYTON: We move Exhibit 76.

CHAIRMAN CARTER: Are there any objections? Without objection, show it done.

(Exhibit Number 76 admitted into the record.)

CHAIRMAN CARTER: Okay. Mr. Dean, you may be excused.

Call your next witness.

MR. GUYTON: I believe that is the end of FPL's case, and this may be the time to move to the intervenor witnesses.

CHAIRMAN CARTER: Okay. Ms. Kaufman on Mr. Pollock.

MS. KAUFMAN: Yes. Mr. Chairman, Mr. Pollock has been stipulated by the parties, so I would ask that his prefiled direct testimony be inserted into the record as though read.

CHAIRMAN CARTER: The prefiled testimony of the witness will be inserted into the record as though read.

Direct Testimony of Jeffry Pollock

Q **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A Jeffry Pollock; 12655 Olive Blvd., Suite 335, St. Louis, MO 63141.

Q **WHAT IS YOUR OCCUPATION AND BY WHOM ARE YOU EMPLOYED?**

A I am an energy advisor and President of J. Pollock, Incorporated.

Q **PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.**

A I have a Bachelor of Science Degree in Electrical Engineering and a Masters in Business Administration from Washington University. Since graduation in 1975, I have been engaged in a variety of consulting assignments including energy and regulatory matters in both the United States and several Canadian provinces. I have participated in regulatory matters before this Commission since 1977. More details are provided in Appendix A to this testimony.

Q **ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

A I am testifying on behalf of the Florida Industrial Power Users Group (FIPUG). Participating FIPUG companies take power from various utilities throughout the state, such as Florida Power and Light, Progress Energy Florida and Tampa Electric Company. These customers require a reliable low-cost supply of electricity to power their operations. Therefore, FIPUG companies have a direct and significant interest in the outcome of this proceeding.

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A I will address what the Commission should consider when determining what conservation programs are cost-effective and the balance that must be achieved between encouraging conservation and increasing customers' rates. I will also briefly address the fact that revenue decoupling is not the answer to conservation.

Q WOULD YOU PLEASE SUMMARIZE YOUR FINDINGS AND CONCLUSIONS?

A First, conservation is an important aspect of every utility's portfolio. Conservation has become even more important in recent times as all consumers – residential, commercial and industrial – face challenging economic times. However, the importance of pursing conservation programs must be balanced against their cost and the impact of that cost on ratepayers. It is important that rate impact not be overlooked when conservation goals and programs are evaluated.

Second, load management programs continue to play an important role in conservation and should be encouraged.

Third, decoupling revenues from sales is not the way to increase cost-effective conservation.

Q WHAT IS THE NATURE OF CONSERVATION PROGRAMS?

A In general terms, conservation programs are designed to reduce or reshape load. (For discussion purposes only, I am including both load management and energy efficiency as representative of conservation programs.) Traditionally, electric utilities have matched supply and demand by increasing supply whenever necessary. It could be less expensive, though, to reduce demand. Conservation may be an alternative to supply-side additions.

If conservation programs result in lower costs and lower rates than supply-side additions, they are worthwhile. Problems can arise, however, because the apparent effect is the opposite of new supply. With a new generation plant, the utility invests money to sell the electricity demanded by its customers. These sales pay for at least part of the cost of the new facility. With conservation, the utility invests money and *reduces* sales. New supply can be used to serve all customers—residential, commercial, industrial or street lighting. A conservation measure, however, provides service *only* to a specific customer.

Q WHAT SHOULD THE COMMISSION CONSIDER WHEN DETERMINING IF A CONSERVATION PROGRAM IS COST EFFECTIVE?

A When the Commission determines the cost-effectiveness of a proposed conservation program, it must weigh the costs and benefits of the program. Thus, the Commission must balance the desire to increase conservation against increases in rates which may result from approval of a particular program. The Commission must also ensure that the cost-effectiveness tests are properly and uniformly implemented.

Q HOW HAS THE COMMISSION JUDGED THE COST-EFFECTIVENESS OF CONSERVATION PROGRAMS IN THE PAST?

A The Commission has traditionally used the Rate Impact Measure (RIM) test to perform this balancing. The RIM cost-effectiveness test looks at the costs of an energy efficiency program from the customers' perspective and provides information on whether rates will need to be adjusted if a conservation program is implemented. A program with a RIM benefit/cost ratio greater than one means that rates will be

lower with the program than with an alternative resource option. Thus, all customers would benefit.

Q IS THERE ANY CONTROVERSY ABOUT THE APPLICATION OF THE RIM TEST?

A Yes. Some controversy has arisen regarding this test, because it is unclear that each utility is applying the RIM test in the same way, especially regarding what is included in the category of "lost revenues." FIPUG currently has discovery outstanding asking the major investor-owned utilities what each includes in the lost revenue category. If the Commission continues to utilize RIM, it should make it clear what is to be included in the lost revenue category so that all utilities are calculating the RIM values in the same way.

Q IS IT IMPORTANT TO CONSIDER THE RATE IMPACTS ASSOCIATED WITH IMPLEMENTING CONSERVATION PROGRAMS?

A Yes. Consideration of rate impacts in the evaluation of conservation programs helps to minimize both rates and costs for ratepayers.

Q DO YOU HAVE ANY COMMENTS ON THE E-RIM DISCUSSED IN MR. SIM'S DIRECT TESTIMONY?

A As I understand it, the E-RIM methodology includes in its calculation the environmental cost of compliance for certain emissions, including sulfur dioxide (SO_2), nitrogen oxide (NO_x), and carbon dioxide (CO_2). Including all costs which are avoided as a result of a conservation program, including environmental compliance costs, is appropriate. It is essential that the impact of these emissions is both known and reasonably measurable using readily available and objective information.

Q DO YOU HAVE ANY COMMENTS ON THE TOTAL RESOURCE (TRC) TEST?

A The TRC test assumes that any program that costs less than an equivalent supply side resource would benefit all ratepayers. This is not necessarily the case, as illustrated in **Exhibit JP-1**.

I have assumed that a utility serves three customers, each using 100 kW. The cost of existing resources is assumed to be $100/kW **(Case 1)**.

In **Case 2**, Customer C increases usage by 100 kW. The utility must add 100 kW of new resources. I have assumed that the cost of the new 100 kW of supply is $180/kW. Therefore, the plant addition will increase rates from $100 to $120 per kW. Customer C, whose usage increases, would pay $14,000 for the additional 100 kW of usage or 78% of the added cost to the system. Under the assumption that the incremental supply costs more than the average existing supply, other customers would pay somewhat more, too, as a consequence of the rate increase.

Q WHAT WOULD HAPPEN IF A LESS-COSTLY CONSERVATION PROGRAM WERE SUBSTITUTED FOR THE 100 KW OF GROWTH?

A A conservation program that is less costly than an equivalent supply side resource would pass the TRC. **Case 3** considers what happens when a utility invests in conservation at Customer C's premises that costs $150 per kW, which is less than the cost of an equivalent supply-side resource. This investment would allow Customer C to increase output while maintaining the existing level of usage. In effect, Customer C would receive the *equivalent* of 100 kW of service, though in a different form.

If the utility were to simply add the cost of this service to its rates, the rates would increase from $100 to $150 per kW. The rates with conservation would be

significantly higher than with new supply **(Case 2)**, because, in **Case 3**, more cost must be recovered from the existing sales base. This outcome occurs because, with conservation, there would not be incremental energy sales and corresponding revenues to defray the incremental cost. Thus, despite passing the TRC test, this program would fail the RIM test.

Q **WOULD THE USE OF THE TRC IN THIS INSTANCE TREAT ALL CUSTOMERS FAIRLY?**

A No. Customer C, who received the "kW substitute" through the conservation program, would pay only $5,000 or one-third of the cost. Two-thirds of the conservation cost would be borne by Customers A and B. This result is unfair, particularly if the other customers have invested in their own conservation measures.

Q **WOULD THE RESULT BE FAIR EVEN IF THE CONSERVATION MEASURE WERE LESS COSTLY THAN THE UTILITY'S EXISTING RESOURCES?**

A Not necessarily. An example is illustrated in **Case 4** shown in **Exhibit JP-1**. As can be seen, the non-participants (Customers A and B) would still experience higher costs than if a more expensive supply side resource were added. In other words, the conservation measure would still fail the RIM test. Customer C, though, would still pay only one-third of the actual cost of the conservation program.

Q **WHAT DOES THE ILLUSTRATION DEMONSTRATE?**

A The illustration demonstrates that the TRC test has the potential to harm those customers that are not participating in utility-funded conservation programs. This result is unfair, particularly for those customers that have implemented self-funded conservation programs. Further, if the conservation measures were chosen instead

because they were less costly than adding new supply, then the impact of conservation on *all* customers should be lower than if new supply had been added.

Q **SHOULD NON-ECONOMIC OR SOCIETAL COSTS BE INCLUDED IN A COST-EFFECTIVENESS ANALYIS?**

A No. Societal costs are often difficult to quantify so these costs should be excluded.

Q **DO YOU HAVE ANY FURTHER COMMENTS ON THE COST-EFFECTIVENESS TESTS?**

A Yes. Regardless of which cost-effectiveness test the Commission ultimately deems appropriate, what is most important is that the Commission encourage conservation programs that strike a reasonable balance between the advantages of the programs to program participants and other rate payers and that these conservation programs are fairly evaluated.

Q **IS THERE A SOLUTION TO THIS PROBLEM?**

A First, the Commission should continue to give significant weight to the results of the RIM test in determining cost-effectiveness. Second, customers that choose to participate in utility-sponsored conservation programs should be required to pay a greater share of the cost if these payments are needed to make the programs cost effective to customers not participating in the programs. Since conservation is not a natural monopoly, the utility should not be given a competitive advantage by providing a service below its actual cost. That way the program is not subsidized entirely by other customers. And in fact, Section 366.82(3)(b) of the Florida Statutes and the Cost Effectiveness Manual for Demand Side Management Services requires the Commission to consider "participant contributions" to programs.

Q HOW DO LOAD MANAGEMENT PROGRAMS FIT INTO THE CONSERVATION PICTURE?

A Load management programs, including interruptible programs, play an important role in the state. Interruptible rates, in particular, are used effectively by many large consumers to minimize demand when the utility requires resources to maintain service to its firm customers. Thus, interruptible power is a lower quality of service than firm power. The utilities do not include interruptible and other non-firm load in determining the need for additional capacity. Thus, non-firm load has allowed utilities to avoid building more expensive capacity. Further, some non-firm load is also capable of providing contingency reserves. The Florida Reliability Coordinating Council (FRCC) defines contingency reserves as resources needed to replace reserve capacity that is no longer available due to sudden forced outages of major generating facilities or the loss of transmission facilities. Using non-firm load as contingency reserves would allow the utility to avoid keeping some generation on-line, thereby reducing fuel costs and emissions.

For these reasons, these types of programs should be encouraged by the Commission, and the utilities and the Commission should encourage their growth.

Q ARE THERE OTHER TYPES OF ACTIVITIES THE COMMISSION SHOULD ENCOURAGE?

Yes, for example, the Commission should more strongly encourage cogeneration, particularly for industrial processes that generate substantial waste heat. Many Florida cogeneration facilities use waste heat from industrial processes; thereby producing no environmental emissions, consuming no fossil fuel, and requiring no additional water consumption. These cogeneration facilities allow the utilities to avoid

the purchase and consumption of expensive fossil fuels associated with operating utility-owned generating units and the emissions associated with these units.

Q ARE THERE CURRENT BARRIERS THAT PREVENT THE EFFICIENT USE OF COGENERATION FACILITIES?

A Yes. In most instances, an industrial customer cannot fully utilize the additional electricity from cogeneration because the cogeneration facility is at a separate location from the customer's other energy-consuming facilities. Consequently, the customer must either (1) bypass the utility by constructing privately-owned transmission lines (to interconnect the customer's cogeneration and other load consuming facilities) or (2) "put" the excess energy on the grid. In situations where a customer transmission bypass is not a viable option, payment for cogenerated energy is at the utility's hourly avoided energy cost. As a result, viable projects cannot pass the necessary economic hurdles to reach fruition.

Q ARE THERE ALTERNATIVES THAT CAN LOWER THESE HURDLES?

A Yes. There are alternatives that should be considered to encourage additional cogeneration and to allow customers to more fully utilize existing cogenerated capacity/energy. For example, multiple load management (MLM) would allow a customer to centrally manage power and energy usage at multiple locations (owned and controlled by the customer) throughout the utility's service area. This could be expanded to include using surplus capacity/energy from cogeneration to displace utility capacity/energy purchases at other locations (*i.e.*, self-service wheeling). MLM is currently allowed by rule only in certain circumstances. Such circumstances should be expanded to include self-service wheeling so that cogenerated power can be

economically developed and fully utilized. Combining the two options would encourage more widespread (and more efficient) use of cogeneration provided that it is found to be cost-effective.

Q **WHAT DO YOU RECOMMEND?**

A I recommend that the Commission open an investigation to consider MLM as described above and to audit how avoided costs are being calculated (1) in applying the RIM test and (2) in determining the real-time hourly payments for cogenerated energy. One of the objectives of the audit should be to ensure that the avoided cost calculations are both consistent and transparent. This would help to ensure that viable cogeneration projects are developed.

If the Commission decides to broaden energy efficiency measures, the utilities should specifically address industrial programs that will increase efficiency, such as the installation of premium efficiency motors. Such programs should be eligible for modest incentives. This would encourage the replacement of less efficient equipment with more efficient equipment thus resulting in demand reduction. Section 366.82(c) directs the Commission to evaluate the need for incentives.

Q **DO YOU HAVE ANY COMMENTS ON REVENUE DECOUPLING?**

A I do have some brief comments. Though it is not clear to me if revenue decoupling will be addressed in this case, I would like to comment on it in an abundance of caution. Revenue decoupling essentially advocates separating utility revenues from utility sales. It gives utilities a guaranteed return regardless of utility sales.

Q **IS DECOUPLING A SOUND REGULATORY APPROACH TO ENCOURAGING CONSERVATION?**

A Decoupling, in my view, has many flaws and I will not attempt to provide a complete review of them here. Generally, decoupling provides a utility with guaranteed revenues despite its sales and has the potential to actually increase rates with greater conservation. Thus, it penalizes consumers for successful conservation efforts. Decoupling also removes the incentive for the utilities to cut costs and improve operating efficiency as a necessary pre-requisite to earning its authorized return. And finally, proper rate design can be a more effective tool to incent customers to be more efficient, while providing utilities a more stable revenue stream.

Q **HAS THE COMMISSION TAKEN A POSITION ON THE DECOUPLING ISSUE?**

A It is my understanding that in December 2008, the Commission provided a report on decoupling to the Florida Legislature. The Commission's conclusion in that report was:

> [T]he administrative complexity of decoupling mechanisms currently implemented in other states, and the FPC revenue decoupling experiment support the position that Florida is already paving a path toward the objectives of decoupling without incurring the cost and difficulties associated with design, implementation and maintenance of a specific decoupling mechanism. (*Report to the Legislature on Utility Revenue Decoupling* at 5).

I agree with the Commission's conclusion and do not believe the revenue decoupling should be adopted.

Q **DOES THIS CONCLUDE YOUR TESTIMONY?**

A Yes, it does.

APPENDIX A

Qualifications of Jeffry Pollock

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Jeffry Pollock. My business mailing address is 12655 Olive Blvd., Suite 335, St. Louis, Missouri 63141.

Q WHAT IS YOUR OCCUPATION AND BY WHOM ARE YOU EMPLOYED?

A I am an energy advisor and President of J. Pollock, Incorporated.

Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A I have a Bachelor of Science Degree in Electrical Engineering and a Masters in Business Administration from Washington University. At various times prior to graduation, I worked for the McDonnell Douglas Corporation in the Corporate Planning Department; Sachs Electric Company; and L.K. Comstock & Company. While at McDonnell Douglas, I analyzed the direct operating cost of commercial aircraft.

Upon graduation in June 1975, I joined Drazen-Brubaker & Associates, Inc. (DBA). DBA was incorporated in 1972 assuming the utility rate and economic consulting activities of Drazen Associates, Inc., active since 1937. From April 1995 to November 2004, I was a managing principal at Brubaker & Associates (BAI).

During my tenure at both DBA and BAI, I have been engaged in a wide range of consulting assignments including energy and regulatory matters in both the United States and several Canadian provinces. This includes preparing financial and economic studies of investor-owned, cooperative and municipal utilities on revenue requirements, cost of service and rate design, and conducting site evaluation.

Recent engagements have included advising clients on electric restructuring issues, assisting clients to procure and manage electricity in both competitive and regulated markets, developing and issuing requests for proposals (RFPs), evaluating RFP responses and contract negotiation. I was also responsible for developing and presenting seminars on electricity issues.

I have worked on various projects in over 20 states and several Canadian provinces, and have testified before the Federal Energy Regulatory Commission and the state regulatory commissions of Alabama, Arizona, Colorado, Delaware, Florida, Georgia, Indiana, Illinois, Indiana, Iowa, Louisiana, Minnesota, Mississippi, Missouri, Montana, New Jersey, New Mexico, Ohio, Pennsylvania, Texas, Virginia, Washington, and Wyoming. I have also appeared before the City of Austin Electric Utility Commission, the Board of Public Utilities of Kansas City, Kansas, the Bonneville Power Administration, Travis County (Texas) District Court, and the U.S. Federal District Court. A partial list of my appearances is attached hereto.

Q **PLEASE DESCRIBE J. POLLOCK, INCORPORATED.**

A J.Pollock assists clients to procure and manage energy in both regulated and competitive markets. The J.Pollock team also advises clients on energy and regulatory issues. Our clients include commercial, industrial and institutional energy consumers. Currently, J.Pollock has offices in St. Louis, Missouri and Austin and Houston, Texas.

CHAIRMAN CARTER: Commissioners, this witness has been stipulated to by the parties. Are there any objections? Without objection, show it done. Were there any exhibits to go with Mr. Pollock?

MS. KAUFMAN: Yes, sir. He had one exhibit. It has been numbered as Exhibit Number 77 in the master list.

CHAIRMAN CARTER: Exhibit 77. Any objection of the parties? Without objection, show it done.

(Exhibit Number 77 admitted into the record.)

MS. KAUFMAN: Thank you, Mr. Chairman.

CHAIRMAN CARTER: Thank you, Ms. Kaufman.

Mr. Jacobs.

MR. JACOBS: Thank you, Mr. Chairman.

NRDC and SACE would like to call Mr. Phil Mosenthal to the stand.

CHAIRMAN CARTER: Mr. Phil Mosenthal.

MR. JACOBS: Is it your preference to continue today?

CHAIRMAN CARTER: Absolutely. We are going to press on.

MR. JACOBS: Just one moment, sir. Have you been previously sworn, Mr. Mosenthal?

THE WITNESS: No.

CHAIRMAN CARTER: Would you please stand and

raise your right hand?

(Witness sworn.)

CHAIRMAN CARTER: You may proceed, Mr. Jacobs.

PHIL MOSENTHAL

was called as a witness on behalf of NRDC/SACE, and having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. JACOBS:

Q. Would you state your name and business address for the record?

A. My name is Philip Mosenthal. My business address is Optimal Energy, 14 School Street, Bristol, Vermont 05443.

Q. And, Mr. Mosenthal, have you caused to be prepared and filed here some prefiled direct testimony?

A. Yes, I have.

Q. And if you were asked the same questions as in that testimony today, would your answers be the same?

A. They would.

Q. Would you explain the differences?

A. I do have one correction.

Q. Okay.

A. On Page 11, Line 11, where it says agricultural sector efficiency opportunities is in contradiction with the statute, that should read in

contradiction with the legislative intent of the statute.

Q. Very well.

A. And I would also like to add that I have some discussion in my testimony about the application of the Participant test based on the description of how the screening was applied and Mr. Sim's direct testimony on Page 36, Lines 11 through 20.

I have since seen his rebuttal where he asserts that that was not exactly how they did it or at least my understanding of how that was written. So, you know, subject to check, because we did get a discovery response that showed the benefit/cost ratios, which is what we used. You know, assuming that, in fact, I was incorrect on that, then that part of the testimony wouldn't apply.

Q. Okay. In reliance on Mr. Sim's testimony or a revision of his testimony --

A. Rebuttal.

Q. -- yours will be so revised? Okay.

CHAIRMAN CARTER: That's in reliance of rebuttal testimony?

THE WITNESS: Yes, sir.

MR. JACOBS: Which I understand was a modification of the direct testimony.

CHAIRMAN CARTER: Okay. We will see.

I want everybody to be on their toes. Let's don't get too far afield. We want to stay focused. If we get out there, we're going to bring this thing in for a landing. Okay?

MR. JACOBS: Exactly my purpose in alerting everyone.

CHAIRMAN CARTER: Thank you.

BY MR. JACOBS:

Q. So with that notation, are there any other modifications to your testimony?

A. No.

MR. JACOBS: Mr. Chairman, we would ask that the prefiled direct testimony of Mr. Mosenthal be entered into the record as though read.

CHAIRMAN CARTER: The prefiled testimony of the witness will be inserted into the record as though read.

I. IDENTIFICATION AND QUALIFICATIONS

Q. State your name and business address.

A. Philip H. Mosenthal, 14 School Street, Bristol, VT 05443.

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 (SACE).

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

A. I am a partner in Optimal Energy, Inc., a consultancy specializing in energy efficiency and utility planning.

Q. **Summarize your qualifications.**

A. I have over 25 years of experience in all aspects of energy efficiency, including facility energy management, policy development and research, integrated resource planning, cost-benefit analysis, efficiency potential studies, and efficiency and renewable program design, implementation and evaluation. I have developed numerous utility efficiency plans, and designed and evaluated utility and non-utility residential, commercial and industrial energy efficiency programs throughout North America, in Europe, and in China.

I have also completed or led numerous studies of efficiency potential and economics, including ones in China, Maine, Massachusetts, Michigan, New England, New Jersey, New York, Quebec, Texas, and Vermont. Most recently, I led the analysis of electric and natural gas efficiency and renewable electric potential and development of suggested programs for New York State, on behalf of the New York State Energy Research and Development Authority (NYSERDA) and the NY Department of Public Service, as well as currently working on an updated electric efficiency potential study for New York State. I have also recently

contributed to electric efficiency potential and program planning studies for the Long Island Power Authority, New York Power Authority, and Orange & Rockland Utilities.

In 2007, I was the lead author of the US EPA's "Guide for Conducting Energy Efficiency Potential Studies" for its National Action Plan on Energy Efficiency (NAPEE).[1] I also led development of the curriculum, and have conducted trainings for industry professionals on conducting potential studies and cost-effectiveness analysis, as well as program planning, design, and implementation, for the Association of Energy Service Professionals, and have spoken widely on these subjects.

Optimal Energy also has developed, largely under my direction, a comprehensive suite of cost-effectiveness analysis and program planning software widely used in the industry. Our portfolio and project screening tools, which calculate all the major cost-effectiveness tests, are currently used for portfolio planning and program implementation in virtually every state in the Northeast and elsewhere. It has been translated into a Chinese version currently used in two Chinese provinces. These tools perform state of the art cost-effectiveness screening, and include many aspects often ignored by other analysts. These include important non-energy and market transformation benefits, and timing effects that if not included will tend to significantly undervalue the cost-effectiveness of retrofit (early retirement) measures.

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[1] U.S. EPA, November 2007.

Beginning in 1998 I led development of commercial and industrial programs for the Long Island Power Authority. I continue to advise LIPA on program design, planning and implementation issues, and have recently been involved in assessment of the achievable electric potential from a portfolio of ramped up electric and gas efficiency programs on Long Island to meet New York States' goal of 15% electric efficiency savings by 2015.

I was the chief architect of the nation's first and only "energy efficiency utility" (EEU) in Vermont in the late 1990's, and led the development of the EEU, including all planning, program design and analysis, and testimony. I am currently an advisor for business energy services at Efficiency Vermont (EVT), which operates as the EEU.

I also currently lead a team representing the Massachusetts Energy Efficiency Advisory Council, which oversees and advises on all electric and gas efficiency efforts in the Commonwealth. In this role, I work closely with the utility electric and gas program administrators throughout the state. We are currently in the process of integrating existing electric and gas programs into a single portfolio, to ramp up to all available cost-effective efficiency levels in the range of 2-3% of incremental savings per year.[2]

Prior to co-founding Optimal Energy in 1996, I was the Chief Consultant for the Mid-Atlantic Region for XENERGY, INC. (now KEMA). I have a *B.A.* in Architecture and an *M.S.* in Energy Management and Policy, both from the University of Pennsylvania.

Q. Have you previously testified before the Florida Public Service Commission? ("the Commission" or "PSC")?

A. No.

II. INTRODUCTION AND SUMMARY

Q. What is the purpose of your testimony in this proceeding?

A. My testimony addresses three primary issues: (1) the consistency of the FEECA utilities' achievable potential analyses and proposed goals with the Florida Energy Efficiency and Conservation Act as revised in the 2008 Energy Act (the FEECA Statute); (2) the appropriateness and accuracy of the FEECA utilities' achievable potential analyses, and consistency with standard and accepted DSM industry practice; and (3) appropriate goals that the PSC should consider. I also discuss briefly Florida's record of DSM achievement compared to other jurisdictions, which is more fully addressed in SACE/NRDC Witness Wilson's testimony.

Q. Summarize your testimony.

A. My testimony shows that the FEECA utilities directed their consultants to use assumptions and methods for estimating the achievable potential of DSM resources that are neither consistent with the FEECA statute nor good DSM industry standards and practices. The result of the achievable potential analysis on its face is simply not a credible estimate of the maximum amount of DSM resources that could be captured cost-effectively in Florida. Indeed, it is more than

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[2] Expected goals a still being negotiated. However, assessments indicate levels of 3%/yr incremental savings as a percent of load are achievable for electric and 2%/yr for gas.

an order of magnitude lower than many states are already capturing, and roughly two orders of magnitude lower than has been achieved in targeted geographic areas.

The flaws in this analysis include, but are not limited to: unreasonable assumptions and criteria that screen out virtually all achievable DSM potential; a flawed understanding of the principals of integrated resource planning and the language of the FEECA statute; unreasonably low assumed penetration rates; inaccurate analysis of cost-effectiveness; and the lack of consideration of new and enhanced innovative program strategies in Florida that could result in much higher penetration of cost-effective efficiency and demand resources than is currently occurring in Florida.

I will also suggest goals for the Commission to consider, in the absence of any more thorough and appropriate analysis.

My testimony covers the following issues, identified by Commission staff:

ISSUE 1: Did the Company provide an adequate assessment of the full technical potential of all available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems, pursuant to Section 366.82(3), F.S.?

ISSUE 2: Did the Company provide an adequate assessment of the achievable potential of all available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems?

ISSUE 3: Do the Company's proposed goals adequately reflect the costs and benefits to customers participating in the measure, pursuant to Section 366.82(3)(a), F.S?

ISSUE 4: Do the Company's proposed goals adequately reflect the costs and benefits to the general body of ratepayers as a whole, including utility incentives and participant contributions, pursuant to Section 366.82(3)(b), F.S.?

ISSUE 7: What cost-effectiveness test or tests should the Commission use to set goals, pursuant to Section 366.82, F.S.?

ISSUE 8: What residential summer and winter megawatt (MW) and annual Gigawatt-hour (GWh) goals should be established for the period 2010-2019?

ISSUE 9: What commercial/industrial summer and winter megawatt (MW) and annual Gigawatt hour (GWh) goals should be established for the period 2010-2019?

III. TECHNICAL & ACHIEVABLE POTENTIAL ANALYSES (Issues 1, 2, 3, 4 & 7)

Q. Have you examined the achievable potential analyses done by the FEECA utilities and Itron/KEMA?

A. To some extent. Unfortunately, due to the schedule for this testimony, the lack of detailed information provided in the utilities' and Itron Witness Rufo's testimony, the receipt of discovery responses, along with the utilities' unwillingness to provide an electronic version of the DSM ASSYST model used in the analysis except for viewing in Tallahassee, I have not been able to access the DSM ASSYST model, nor all the detailed inputs or outputs of the model. As a result, while I have had access to some data, and have reviewed the testimony describing conceptually how the analysis was done, I have not been able to perform a fully comprehensive analysis. Further, while I believe all my comments apply to all the FEECA utilities, I have most thoroughly scrutinized the analysis as it was

done for FPL. Where applicable, I use FPL numbers as examples, however, my testimony should be considered as applying to all the FEECA utilities where not otherwise noted.

Q. What are your primary concerns with the achievable potential analysis?

A. I believe the analysis dramatically understates the achievable potential for the following reasons:

1. The analysis begins with a low estimate of technical potential that does not address all possible opportunities.
2. The analysis inappropriately removes a large portion of the technical potential by simply considering any measure that offers a customer payback of less than 2 years not an appropriate or eligible DSM resource, in violation of the FEECA Statute.
3. The analysis inappropriately removes an additional large portion of potential from any measures that do not pass the participant test absent any utility incentives or federal tax credits.
4. The analysis inappropriately relies on the ratepayer impact measure (RIM) test, rather than the total resource cost (TRC) test, as required under the FEECA Statute.
5. The analysis inappropriately includes (at least for some if not all FEECA utilities) program administrative costs when screening individual measures, rather than programs.
6. The analysis inappropriately bundles measures together for screening out measures, but then unbundles them again.

7. The analysis uses a flawed model of achievable penetration that effectively constrains the achievable potential to no more than Florida is currently capturing.
8. The analysis inappropriately assumes that DSM programs can not be designed to better overcome barriers associated with awareness and information that currently preclude greater adoption of efficiency opportunities.
9. The analysis fails to consider the design of new and more innovative and aggressive approaches to capturing DSM potential than the currently limited Florida offerings.
10. The analysis results in estimates that range from 0% to 0.7% cumulative maximum achievable potential over ten years, which quite simply defies logic and the vast amount of DSM experience over several decades throughout North America.

Q. Why do you think the technical potential analysis provides a low starting point for the achievable potential analysis?

A. Technical potential is somewhat of an academic construct to begin with, and in my opinion not a very useful exercise to undertake. As Witness Rufo states, "technical potential is defined in this study as the complete penetration of all measures analyzed in applications where they were deemed technically feasible from an engineering perspective."[3]

[3] Rufo direct testimony, p. 12, ll. 4-6.

Consider, for example, that we know how to build *net zero* electricity buildings.[4] While in many cases these are not cost-effective, from a technical standpoint, this can be done. So, in theory, technical potential is by definition 100% of the electricity used in residential and commercial buildings. In such a scenario, the remaining demand would consist of industrial process load, but even this demand can often be offset by combined heat and power or other distributed generation strategies, in combination with efficiency improvements. In actuality, technical potential studies are generally very similar to economic potential studies. This is because analysts do not bother to include a lot of measures that they know will not pass cost-effectiveness screening. As a result, the majority of technical potential is typically also included in economic potential.

Regardless, I believe the technical potential study performed by Itron is a reasonable first cut of potential, but on the conservative *(i.e.*, low) side. First, it ignores technology advancement or future price reductions for efficiency opportunities by 2019.[5] For example, LED lighting is fast becoming cost-effective and significantly more efficient than current lighting technologies, as well as offering many non-energy benefits. Many experts predict that LEDs will offer very large and cost-effective savings opportunities within just a few years. Secondly, the

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[4] Net zero buildings refer to buildings which, through a combination of efficiency and distributed generation (either renewable or combined heat and power), result in a zero net load on the utility system.

[5] "The scope of measures proposed for consideration in the study was limited to measures that are currently available in the Florida market for which independently-verified cost and savings data are available. In this sense, non-commercialized 'emerging' technologies were specifically excluded from the study." Itron/KEMA, *Technical Potential for Electric Energy and Peak Demand Savings in Florida,* March 12, 2009, p. 3-27.

measures list, while large, does not fully include all potential opportunities, nor fully incorporate important synergies between measures and systems that can result in very deep and cost-effective savings.[6]

Building commissioning and retrocommissioning are just two examples of important measures that were not included, despite specific requests by collaborative parties to include them, as NRDC/SACE Wilson explains. Commissioning refers to a process of independently reviewing design specifications and actual equipment and systems installations and controls to ensure that all systems are performing as designed, and adjusting as appropriate to optimize the real world efficiency in new buildings or systems.

Retrocommissioning refers to a process of performing a similar assessment on existing buildings to adjust operating procedures, control settings, etc. In most buildings even efficient equipment often underperforms because of the many adjustments and modifications made over the years by often untrained maintenance personnel. This low cost process, which relies mostly on behavioral changes and adjustments rather than capital improvements, has been shown to be highly cost-effective. A major study found average (median) savings of *total building energy use* for this single measure of 15%, with a typical customer payback of 0.7 yrs.[7]

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[6] The Itron study does take into account interactions between measures, but in an asymmetric way. They only reduce each measure savings based on prior savings. However, they ignore the important synergies that can allow for deeper and more cost-effective savings by considering whole buildings as systems. For example, well designed buildings can often result in dramatically downsizing major system components (e.g., by reducing cooling loads), resulting in deeper savings and lower incremental costs.

[7] Mills, Evan et al., *The Cost-Effectiveness Of Commercial-Buildings Commissioning: A Meta-Analysis of Energy and Non-Energy Impacts in Existing Buildings and New Construction in the United States,* Lawrence Berkeley National Laboratory, 2004, p. 1.

Just these two single measures can offer substantial cost-effective savings opportunities in the commercial and industrial sectors. SACE/NRDC witness Wilson discusses this in more detail.

Finally, there are many general reasons that technical potential estimates tend to be conservative. For example, it is impossible to accurately account for every possible opportunity in every market segment. As a result, for reasonable resource and other reasons, any analysis is somewhat constrained in its comprehensiveness. For example, the Itron analysis chose to not analyze any opportunities from the agricultural sector, despite some successful agriculture programs in California and elsewhere. I note also the exclusion of consideration of agriculture sector efficiency opportunities is in contradiction with the legislative intent of the statute, which states: "It is the policy of the State of Florida to consider in its decisions the energy needs of each economic sector, including residential, industrial, commercial, **agricultural,** and government uses, and reduce those needs whenever possible." (Section 377.601 (2)(g)).

Similarly, they omitted wastewater treatment facilities and outside lighting, where many programs have found large and cost-effective opportunities. Any time that a particular market segment or opportunity is excluded, the default is to assume zero potential. Obviously, we know there is potential in these markets, but the default assumption is zero rather than some non-zero estimate such as the average of other proportional opportunities. This method, while understandable, virtually guarantees that any analysis will understate the true opportunities.

Q. Please explain how the two year customer payback rule was applied to the achievable potential analysis.

A. As described by witness Rufo, "measures that demonstrated simple payback periods of less than two years with no incentive applications were excluded from the RIM and TRC 'portfolios' and screened from the achievable potential analyses."[8]

Q. What was the FEECA utilities' logic for doing this?

A. Witness Haney explains "the assumption underlying the two-year payback criterion is that a reasonable customer will adopt DSM if the DSM measure provides them a payback on incremental costs in terms of lower utility bills or bill savings within two year or less of the adoption of the measure."[9] He goes on to state that:

> "FPL's customers should only have to pay customer incentives necessary to encourage additional customer adoption of DSM measures. When a customer has a sufficient incentive to implement a DSM measure – a cost-effective incentive that results in a two-year payback – the remaining FPL customers should not have to pay a higher incentive. A two-year payback is a sufficient economic incentive for a customer to implement DSM. Paying a higher incentive to encourage a customer to do what the customer already has a sufficient incentive to do does not make economic sense for FPL's general body of customers."[10]

Q. Do you agree with Mr. Haney's logic?

A. No. Mr. Haney's first statement is both illogical and circular for a number of reasons. First, the technical potential analysis begins with the base case forecast

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[8] Rufo test., p. 20, ll. 4-6.

[9] Haney direct testimony, p. 23, ll. 1-5

of future load, which already effectively includes the level of efficiency that is expected to naturally occur without DSM efforts, as well as the efficiency FEECA utilities have assumed will come from pending federal efficiency standards.[11] It also specifically accounts for estimated base case adoption of naturally occurring efficiency. As a result, all the efficiency potential identified that offers customers a payback of less than two years is, *by definition, efficiency opportunities that customers have not and are not expected to adopt on their own.* While Mr. Haney may believe the two year payback alone should be sufficient inducement, the analysis has explicitly estimated the *remaining potential over and above naturally occurring efficiency that exists*.

This is supported by Witness Rufo's testimony. Exhibit MR-11 shows the numerous and well documented market barriers that prevent economically rational efficiency from being adopted. There is a large body of literature on these barriers and they are in fact the fundamental basis behind DSM in the first place. Essentially, the purpose of DSM is to intervene in the market to overcome these barriers that otherwise prevent highly economic efficiency opportunities from being adopted within the current marketplace.

Q. Does witness Rufo discuss this issue?

A. Yes. Rufo confirms this: "The implicit premise of efficiency programs is that it is the existence of these barriers that necessitates program interventions to increase adoption of energy efficiency measures."[12]

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[10] Haney direct test., p. 23, ll. 8-17

[11] Sims direct test., p. 23, ll. 16-19

[12] Exhibit MR – 11, p. 5

Rufo goes on to:

> "note that for the moderate, high and extremely high barrier curves, the participant benefit-cost ratios have to be **very high** before significant adoption occurs. This is because the referential participant benefit-cost ratios are calculated using a 15-percent discount rate. A consumer discount rate of roughly this level reflects likely adoption **if there were no market barriers or market failures**, as reflected in the no-barriers curve in the figure (*i.e.*, under the no barriers curve roughly half the market adopts with a part B-C ratio of 1.0 using the 15% discount rate). Real-world program and market experience shows, however, that actual adoption behavior does not follow the no barrier curve **for the vast majority** of measures. Instead, most measure adoption levels observed in real markets and programs correlate with implicit discount rates several times those that would be expected in a perfect market (*i.e.*, a market without barrier to the adoption of efficiency measures)."[13] [emphasis added]

Rufo goes on to explain in a footnote to the above paragraph:

> "For comparison purposes, a long-lived measure of 15 years and a 15-percent discount rate, the equivalent payback **at which half of the market would adopt a measure is roughly 6 months,** based on the low [sic — I believe it should read "high"] barrier curve in the exhibit (or roughly 2 years based on the low barrier curve). **At a 1-year payback, one-quarter of the market would adopt** the measure on the high barrier curve. The curves reflect the real-world

[13] Exhibit MR – 11, p. 5

observation that **implicit discount rates can be well over 100%.**"[14] [emphasis added]

Q. What do you conclude from witness Rufo's above statements?

A. Witness Rufo's statements are quite clear. Even for measures with paybacks as short as 6 months, there may still remain fully half of the potential that will not be captured absent DSM programs. With a 1-year payback, fully three-quarters of all the opportunities will be left on the table if DSM does not promote them. It is also important to note that the technical potential only includes the remaining portion not naturally adopted by these measures. This means that 100% of the estimated technical potential associated with measures that payback in less than 2 years will not be captured in Florida absent some DSM intervention.

Q. Do you have other comments on witness Haney's rationale?

A. Yes. Witness Haney seems to assume that the only effective or important DSM program strategy is rebates to customers. He further makes an ideological judgment that it is unfair for ratepayers to support DSM that he believes economically rational customers should do on their own.

On the contrary, some of the most important and effective DSM strategies are the non-financial ones. These include things like educating customers about their efficiency opportunities, performing technical analyses, working with and training architects and engineers to ensure efficiency opportunities are effectively considered and promoted, training builders and other trade allies, working with distributors and retailers to ensure that efficient products are stocked and promoted, coordinating and facilitating procurement and installation processes, and many

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[14] Exhibit MR – 11, p. 5, footnote 5.

other services specifically designed to overcome important market barriers. The most effective programs include combinations of many of these strategies, often along with financial incentives that can include cash rebates but also can use market-rate financing, to increase customer adoption. As a result, it may well be that many of these measures can be captured cost-effectively by FEECA utilities with little or no cash rebates, and while minimizing free ridership – which I discuss below – thereby alleviating Haney's concerns. Even if rebates are deemed necessary, the FEECA utilities' approach has the ironic result of leaving on the table the most cost-effective and beneficial efficiency opportunities that should be a high priority for any DSM portfolio to capture.

Q. Is the utilities' practice and Mr. Haney's perspective regarding the elimination of all measures with less than a 2 year payback consistent with the FEECA Statute?

A. No. I do not see any language in the FEECA statute that directs the Commission to exclude the most cost-effective measures from the participant cost test perspective from the goals established for the utilities. Rather, the plain language of the FEECA statute suggests that the FEECA utilities are to be directed to capture all available cost-effective energy efficiency potential. Section 366.81 indicates "the Legislature finds and declares that it is critical to utilize the **most efficient and cost-effective** demand-side renewable energy systems and conservation systems" [emphasis added]. I fail to see how ignoring the most cost-effective opportunities available over and above those naturally occurring can be consistent with that language.

Q. Do you agree with Mr. Haney's belief that it is unfair for ratepayers as a whole to subsidize programs that promote efficiency measures that customers should do on their own?

A. No. The issue of cross subsidies in general is discussed by NRDC/SACE Witnesses Cavanaugh and Steinhurst. However, for purposes of the 2-year payback issue this logic makes no sense. The legislature has made clear that they find it appropriate and important for the general body of ratepayers as a whole to contribute to funding a portfolio of programs to capture cost-effective efficiency opportunities, and directed the Commission to set goals. Given this, there is no logical reason to cause those ratepayers to only invest in the *least* cost-effective opportunities, while ignoring those opportunities that offer all ratepayers the biggest cost savings at the lowest investment and lowest long term energy costs. Through good program design, large and cost-effective savings net of free riders can be captured from these measures.

Q. Does your argument that measures with payback in less than two years should be included in the analyses mean that you disagree with FEECA utilities' incentive approach of not buying measures down to less than a 2 year payback?

A. No. They are two completely separate issues. As I mentioned above, good DSM programs must rely on a multitude of strategies and services, specifically designed to overcome the specific barriers in the markets they are targeting. In some cases, this incentive design may be appropriate. In others it may not.

One of the fundamental problems with the achievable potential study method is that it fails to acknowledge potential best practices program designs.

Rather, it simply uses a one size fits all incentive methodology and penetration model for every measure. For example, capping incentives at a 2 year payback may be entirely appropriate – and in fact probably more generous than necessary on average – as a strategy for promoting commercial or residential new construction measure packages. On the other hand, it will certainly not result in deep penetration among low income customers, or those customers with split incentives.[15]

I would encourage the Commission to note that best practice programs are not limited to a customer incentive model, as assumed in the DSM ASSYST model. Other approaches that are widely used include upstream incentives (to the manufacturer or distributor), aggressive marketing and education, and financing mechanisms. These strategies are widely used as a means of reducing program cost and increasing market penetration. The core equation utilized in the DSM ASSYST model is inherently incompatible with modeling such program designs.

Also, in practice, even if the FEECA utilities were to impose this program design rule in all cases, it is highly likely that much of the savings captured would be from individual measures with paybacks of less than 2 years. If a program is successful at addressing customer opportunities comprehensively, typically customers will adopt a combination of measures, some very cost-effective and some not so. The net result may be a combined payback of 4 or 5 years, which the utility may then buy down to a level sufficient to encourage the customer to move

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[15] Split incentives refer to situations where the party making capital investment decisions is not the same as the party receiving the benefit from those investments. The classic example is when a landlord installs equipment in a tenant-metered building, and therefore gets no energy savings benefit from additional investment except perhaps some intangible marketing and tenant retention benefits.

forward with the full package of measures. Because of this, the programs delivered may well benefit greatly from this potential that the FEECA utilities have simply wiped away as non-existent by fiat. Therefore, any goals the Commission establishes should be based on a full accounting of all achievable potential.

Q. The FEECA utilities argue that limiting incentives to no more than a buy down to a 2 year payback is designed to minimize free riders. Isn't that a good thing?

A. Designing programs to minimize free riders is certainly a good practice, so long as efforts to do it do not undermine the overall capture of cost-effective savings net of free riders. The focus of any programs should be on maximizing the net benefits to the general body of ratepayers as a whole. The level of free riders can certainly influence that, although in some cases achieving that goal may require accepting a certain level of free ridership.

The FEECA utilities, however, fundamentally misunderstand the issue of free ridership. They claim that paying higher incentives would result in an increase in free riders.[16] However, *the exact opposite occurs.* All else equal, the *lower* incentives are in a program, the *higher* the free ridership.

Free riders are those customers that, while participating in a DSM program, would have installed the efficiency measure (or some portion of it) anyway. Thus, they can consume program resources – including receiving an incentive – while not providing any net savings to the electric system. As a result, when incentives are relatively low, they have the effect of not being able to induce as many people that

[16] See, for example, Haney direct testimony p. 22, ll. 13-15, and Sims direct testimony p. 38, ll. 5-6.

wouldn't otherwise do so to adopt an efficiency measure. However, by definition, all the free riders will still adopt the measure because they would have adopted it even with no incentive. Therefore, with low incentives free ridership (as a percentage of overall program gross savings, which is what matters) tends to be very high, because those customers that wouldn't be free riders have not been induced in large number to participate. Effectively, all you are left with is the free riders. This can result in not only very little net savings, but programs that are not cost-effective.

If, on the other hand, incentives are much more generous and result in inducing large numbers of people to adopt efficiency that otherwise wouldn't have, the result is lower free ridership. While some free riders may collect these higher incentives too, the overall effect is much more cost-effective programs and greater net savings and net benefits to the Florida economy. This fundamental and stunning misunderstanding of basic program design concepts seems to permeate the FEECA utilities' testimony and basic approach to DSM.

Q. What other approaches should the utilities use to ensure that ratepayers are not paying high free ridership costs?

A. Designing programs to minimize free riders is certainly a good practice, and program design should be targeted in recognition that different barriers exist for different measures and markets. As a result, free ridership can be minimized in many ways through good program design and delivery. This includes everything from how programs are marketed and to whom, what services they offer, what measures and efficiency criteria they promote, to the specific implementation techniques used.

In fact, it appears to me that the Florida legislature has correctly anticipated the need to address these concerns at the program level rather than at the goal-setting level. The 2008 revisions to the FEECA statute indicate, "Following adoption of goals . . . In approving plans and programs for cost recovery, the commission shall have the flexibility to modify or deny plans or programs that would have an undue impact on the costs passed on to customers." (366.82(7)). It would appear to me that the Commission would correctly consider modifying or denying a program design that entailed an unacceptably high free ridership cost.

Q. Isn't customer payback the most relevant issue when considering potential free ridership?

A. No. Each measure has unique market barriers, different non-energy benefits, and different levels of awareness, understanding and overall attractiveness to customers. Retrocommissioning is a perfect example of how free ridership concerns are not correlated primarily with short payback periods. Retrocommissioning typically offers customers significant savings at very low cost, often with paybacks of one year or less, as mentioned above. However, because it is behavioral in nature, and hard to understand and monitor, it has not yet been widely adopted in building management budgets. Therefore a successful program to promote retrocommissioning would likely have very low free ridership.

On the other hand, a measure like a high efficiency chiller often has a relatively long payback, but yet will often have a relatively high level of natural adoption. This is because chillers are single pieces of equipment with readily understandable efficiency ratings, are very expensive, last a very long time, and are installed by large, sophisticated customers. Typically these customers will perform

an engineering analysis, supported by vendors or independent engineers, and make more sophisticated decisions before investing in a chiller that may cost half a million dollars or more.

These examples illustrate how a simplistic focus on customer payback, absent other issues, is a poor way to predict or influence free ridership. As explained more fully below, this is also a fundamental flaw in the achievable penetration – or "market adoption" – model relied on by Itron that assumes all penetration rates are primarily a function of customer economics.

Q. Do other DSM programs outside of Florida typically promote measures that offer less than a 2 year payback?

A. Yes. In fact, perhaps the bulk of savings in many programs come from these measures. An example is compact fluorescent lightbulbs (CFLs). These products offer very quick paybacks (often less than 6 months), but still after being available for over a quarter century, have relatively low penetration and awareness among the general population.[17] This shows clearly the effect of market barriers, as even in the early 1980's CFLs were highly cost-effective for most customers, often paying for themselves simply with avoided incandescent bulb replacement costs due to the long life of the CFLs, even when ignoring the substantial energy savings.

This may change in the relatively near future because of federal standards that will likely spur the adoption of CFLs starting around 2012.[18] However, even

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[17] Current estimated penetration nationally is only around 10%, http://www.nytimes.com/2009/07/06/business/energy-environment/06bulbs.html?pagewanted=2&_r=2&hp.

[18] The 2007 EISA standards are performance-based lighting standards that phase in from 2012-2014. However, it remains to be seen exactly what effect the standards will have on a shift from incandescent to

assuming that will happen they offer significant short-term resource acquisition opportunities, and virtually all leading DSM portfolios currently promote them.

It is worth noting that in reviewing FPL's achievable potential analysis for the commercial sector, the only indoor lighting measure to have been included based on FPL's screening criteria is LED exit signs.[19] This is contrary to the best DSM practices throughout North America, where indoor lighting has typically accounted for the largest share of commercial DSM portfolio savings, and also typically is estimated to have the largest share of cost-effective achievable potential of any commercial end use. Given the additional cooling benefits from improved lighting efficiency because of reduced waste heat, these opportunities may be particularly important in Florida.

It is further ironic that many programs have long since discontinued promotion of LED exit signs except for retrofit kits, because they are widely considered to be baseline practices now for new exit sign installations, and often required by building codes.[20] Thus, if the Commission were to adopt the FEECA utilities' approach, ratepayers would not be able to benefit from highly cost-

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compact fluorescent lighting. Currently, standard incandescent lamps do not meet the standard. However, high efficiency halogen lamps do, and recent research has developed promising new laser based technologies that can dramatically increase incandescent lamp efficiencies. See, for example, http://www.nytimes.com/2009/07/06/business/energy-environment/06bulbs.html?pagewanted=2&_r=2&hp, which indicates lighting companies have now developed a number of different incandescent technologies that will meet the standards. As a result, it is highly likely that the Itron study overestimates the savings from Federal Standards and significantly underestimates the opportunities for efficiency programs.

[19] FPL Resp to NRDC-SACE informal_discovery(prepared by Itron).xls

[20] For example, a 2000 commercial new construction baseline study done for the Long Island Power Authority estimated LED Exit sign market share at 97%. Long Island Power Authority, *LIPA Commercial and Industrial Baseline Study*, November 2001, p. 2-27.

effective investments in large amounts of commercial lighting savings, yet be forced to invest in a single, relatively expensive commercial lighting measure that would likely suffer from extremely high free ridership.

Again, CFLs and other efficient lighting measures are only one example of highly cost-effective energy efficiency measures that were inappropriately excluded by the utilities because they offered participants a payback of under two years.

Q. What is the effect of eliminating efficiency measures with less than a 2 year payback?

A. Unfortunately, I can not say with precision because the utilities did not include this information in their testimony or reports to the Collaborative, and I have been unable to review the DSM ASSYST model. However, I was able to obtain technical potential results, by measure, for FPL, which includes customer payback estimates.[21] Based on this data, more than half of all the commercial and industrial energy (GWh) technical potential is eliminated from this screen. For residential it is 26%. For the total FPL analysis, fully 34% of the starting technical potential is eliminated.

Similarly, FPL witness Sims testifies that almost half of remaining measures were eliminated from economic potential when the 2-year payback screen was applied (Exhibit SRS-4). For the RIM test, 197 of 476 measures (41%) were

[21] The files provided in response to NRDC/SACE POD 2-4 and used for this analysis are, for residential, commercial and industrial sectors, respectively, NRDCSACE POD 2-4 – Res F_Saere_Fpl.xls, NRDCSACE POD 2-4 – Comm F_Saece_Fpl.xls, and NRDCSACE POD 2-4 – Industrial Fs_Aeie.xls.

removed at this step. For the TRC test, 275 of 585 measures (47%) were removed at this step.

Effectively, the FEECA utilities have simply redefined achievable potential in a way that considers the cheapest and most cost-effective opportunities non-existent.

Q. Please explain why you think screening out measures based on the participant test is inappropriate?

A. As discussed above, the fundamental purpose of DSM is to overcome barriers to encourage customers to adopt cost-effective efficiency they otherwise would not. Obviously, it is not in a customer's interest to install efficiency measures that do not provide them with a positive economic return, nor would the Commission or utilities want to encourage that. However, if an efficiency opportunity is cost-effective when considered for the general body of ratepayers as a whole (as the FEECA statute directs), then it can be made to be in a customer's economic interest through the DSM program design. That is one of the purposes of incentives – to improve the customer economics to the point they will choose to adopt a measure.

However, the FEECA utilities have screened out measures that do not pass the participant test *without* any incentive.[22] Rather, one should include all cost-effective measures based on an all-ratepayer perspective, and then design incentives to ensure that those measures that will reduce the total costs of the electric system will indeed be attractive to participants.

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[22] This step, described as part of "Step 2" in Sims direct testimony, p. 36, precedes analysis with incentives.

Q. Doesn't the FEECA statute say that "the costs and benefits to customers participating in the measure" should be considered? Wouldn't this indicate that the participant test is a necessary screen?

A. The FEECA statute does include this criteria in Section 366.82 (3)(a). I reiterate that I am not testifying to a legal interpretation of the FEECA statute. However, based on my expertise in the field and my general reading of the statute, the context of this statement suggests to me that it concerns how the PSC should analyze the costs and benefits to participants of the portfolio of programs the FEECA utilities offer. My reading is consistent with the legislative history described by SACE witness Wilson, which appears to indicate that the utility incentive should be included in the Participant Cost Test established in the FEECA statute by the 2008 legislature. This approach makes sense as it is certainly of legitimate public interest to consider the economic costs and benefits to participants of DSM programs. I further agree that it is critical that any DSM program be designed to ensure that participants will be economically better off for having participated. This is virtually always the case. Typically, the bill impacts to participants from DSM programs are large, and highly cost-effective from the participant's perspective.

Q. Can you provide a concrete example of why it is important to only consider the participant test after incentives, at the program level?

A. Yes. Florida's history of DSM has been to focus more heavily on demand response measures rather than energy efficiency, in part driven by the past focus on the ratepayer impact measure (RIM) test. FPL offers a residential load management

program to control peak impacts from residential cooling.[23] Ironically, this is an area where the benefits are to the general body of ratepayers as a whole and not to the participant. Residential customers don't generally pay demand charges based on their monthly peak demand. As a result, shutting off their air conditioner or duty cycling it during a few hours of very high system load offers virtually no financial benefit to the customer, and imposes significant costs. These costs include both the actual measure cost of installing and operating load control equipment, but also the less tangible but real costs of reduced comfort. So, this type of measure could never pass a participant test absent consideration of the program incentives simply because the participants don't realize any significant bill savings. The whole concept of this program is to provide a financial incentive to residential customers to make it worth their while to participate, so that the general body of ratepayers as a whole can benefit. Once that is done, the participants of course benefit too because of the utility incentives.

Q. What is the effect of screening out measures that do not pass the participant test without any incentives?

A. As with the customer payback, I can not say with certainty the full effect on the achievable potential. However, based on FPL's technical potential analysis data, the participant test alone (not in combination with any other tests) eliminates fully 45% of the technical potential. In combination with the customer payback screening criteria, the net effect on FPL's technical potential of requiring measures to pass both of these screens is the elimination of a whopping 79% of all the energy

[23] Exhibit JRH-4, p. 1.

efficiency savings opportunities.[24] In other words, these two inappropriate screens by themselves simply wipe away *four-fifths of all the technical potential* before even considering the normal cost-effectiveness tests or achievable participation rates.

Q. Why do you think it was inappropriate for the achievable potential analyses to rely on the RIM test rather than the TRC test?

A. I recognize that DSM regulatory policy in Florida has been to rely on the RIM test as its primary screening criteria for over a decade. FPL witness Dean discusses this in great detail, and includes the Commission Order No. 94-1313-FOF-EG that establishes this as his first exhibit.[25] However, there are a number of reasons I believe this Order needs to be revisited given a number of changes in Florida. SACE/NRDC witnesses Cavanaugh, Wilson and Steinhurst also address this issue in depth. I have read and agree with their testimony, and will not address this issue as a legal expert, nor in great detail. However, as a nationally respected leader in the field of DSM cost-effectiveness and as a practitioner of DSM cost-effectiveness analysis, I offer some further comments.

First, and most fundamentally, Florida has passed legislation since the Commission last considered this issue. The FEECA statute states (Section 366.82 (3) that the Commission should take into consideration:

(a) "the costs and benefits to customers participating in the measure."

(b) "the costs and benefits to the general body of ratepayers as a whole, including utility incentives and participant contributions."

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[24] Based on GWh potential.

As SACE witness Wilson testifies, the legislative history indicates that the Commission is directed to consider the costs and benefits in two ways: 1) from the perspective of participants, and 2) from the perspective of the "general body of ratepayers as a whole." The first part is clearly done through a participant test at the program or portfolio level, as described above. The second part is entirely consistent with the TRC test.

Nowhere in the FEECA statute is there any mention at all of considering the costs and benefits to *non-participants*, nor to consider the impacts directly on utility *rates*, in the goal-setting process. The absence of any language about non-participants and rates makes clear the RIM test is no longer the appropriate cost-effectiveness criteria. RIM ignores the costs and benefits to the general body of ratepayers as a whole (that the FEECA statute discusses).

Q. FPL Witness Dean and others point to the statutory language about including "*all* the costs and benefits to the general body of ratepayers, including *utility incentives and participant contributions*" and state that the TRC test neither includes all costs nor utility incentives, and therefore, the statutory language can not refer to a TRC [emphasis added]. Please explain why you disagree?

A. I believe FPL Witness Dean's argument fundamentally rests on a flawed semantics argument. Quite simply, the TRC test is one of two primary DSM cost-effectiveness tests (the other being the Societal Cost Test (SCT)) that does in fact include *all* true costs and benefits to the general body of ratepayers. It is a test that considers all costs and benefits from a perspective of all ratepayers. Its fundamental

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[25] Exhibit JDW-1.

purpose is to calculate the general increase or decrease in the economic welfare of the economy. In fact, the FEECA Statute (Section 366.81) mentions its purpose as pursuing efficiency "in order to protect the … general welfare of the state and its citizens." The only tests that measure this are TRC and SCT. The RIM test clearly does not include many real economic costs, including for example, the participant contributions.

Witness Dean states that "the RIM and participant tests, **when used together,** capture all relevant costs and benefits" [emphasis added].[26] This is misleading at best, and omits important facts. Simply using two different tests to separately analyze and screen out DSM measures that, when taken together consider each cost or benefit *at least once*, does not resolve the fundamental concern that neither test considers "all relevant costs and benefits." There is no sound way to combine tests in an additive way to result in a single cost-effectiveness analysis that arrives at the correct net benefits enjoyed by the Florida economy and the "general body of ratepayers."[27]

Further, the FEECA utilities have not actually attempted to combine the two tests as Witness Dean states. If they did propose such an approach, it would result in double counting of some costs and benefits, not to mention including non-real costs and benefits and mixing different discount rates and methods of valuing these costs and benefits. This would be fundamentally unsound economics. The participant test leaves out the utility program costs – clearly a real cost to the ratepayers -- and the RIM test leaves out the participant costs – also clearly a real

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[26] Dean direct test., p. 7, ll. 13-14.

cost. While they both include efficiency benefits, these are valued in very different ways.[28] Thus, each taken by themselves leaves out important costs, and taken together would result in double counting benefits with different valuation schemes.

The TRC test on the other hand, provides in a single test, all *real societal costs and benefits,* and is designed to consider the overall effect on the electric system and "general body of ratepayers as a whole."

Dean rests his argument that the TRC test leaves out important costs primarily by stating that "it [the Commission] is told [by the FEECA Statute] to consider a specific cost -- utility incentives to customers – that is not part of the TRC test."[29] This is a semantics game meant to mislead the Commission. The TRC test considers as costs the total incremental cost of efficiency measures. This is made up of two separate cost components paid by two different parties, quite simply: the utility incentives to the participant plus the participant's own contribution to the measure cost. This is exactly the FEECA Statute's direction.

It is true that the total incremental measure cost does not change with the level of incentive, so varying the utility incentive to the customer does not change the TRC test result. It is a zero-sum game. Any increase in utility incentive is exactly offset by the decrease in the customer's contribution. Dean seems to rely on this to argue that the TRC test does not include incentives. In practice, when analyzing measures it is often simpler to ignore who pays and simply include the

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[27] Quite simply: (A/B + C/D) is not equal to (A+B)/(C+D).

[28] In the case of the participant test, benefits are valued at retail electric rates and discounted to the present using a customer discount rate, while in the RIM test they are valued at avoided costs and discounted using a utility rate.

incremental measure cost regardless of incentives. However, this is exactly the same thing as counting both the "utility incentive and participant contribution." In essence, this a distinction without a difference.

The table below shows all the costs associated with DSM, and which ones are considered under each test. As can be clearly seen, the TRC captures all of them. RIM however only captures two of the five costs.

Relevant Costs of DSM

Costs	TRC Test (Y=Included, N=Omitted)	RIM Test (Y=Included, N=Omitted)
Measure costs		
- Participant Cost	Y	N
- Utility Incentives	Y	Y
O&M Costs	Y	N
Fossil Fuel Costs	Y	N
Program Administration	Y	Y

Q. Given the current economic situation, isn't this a bad time to shift away from RIM as the primary criteria?

A. No. FPL Witness Dean argues "given current conditions [poor economy, already increased rates, etc.] now is not the time for the Commission to abandon RIM and Participant tests."[30] Putting aside the mandate from the FEECA Statute, this is *exactly the time*. As Dean notes, customers have seen their electric prices increase in recent years, and are struggling economically. Therefore, the focus of the Commission should be on setting aggressive DSM goals and a complete portfolio to ensure that all customers can participate in programs that will help

[29] Dean direct test., p. 7, ll. 12-13.

[30] Dean direct test, p. 22, ll. 2-4.

them lower their energy bills, while also providing jobs and other economic development opportunities. In fact, both the Federal government (through its ARRA funds) and numerous states are focusing renewed efforts on DSM for just this reason, recognizing it can not only reduce total ratepayer energy bills, but also creates jobs and stimulate the economy. NRDC/SACE Witness Cavanaugh also discusses this issue.

Q. Witness Sims indicates FPL's analysis is consistent with traditional IRP concepts.[31] Do you agree?

A. No. The concept behind traditional IRP is to treat supply and demand-side options on an equal footing to determine the overall least cost option to meeting the energy needs of customers. Indeed, the term "least cost planning" is often used synonymously with integrated resource planning. The FEECA utilities' focus on rates, as opposed to minimizing overall ratepayer costs, does not result in the least cost plan.[32]

Further, FPL has defined DSM as a potential resource only for their "need."[33] Need is defined as the ability to meet required reserve margins with current or planned supply capacity. Simply guaranteeing that all existing and planned supply continues to operate and then only considering new supply and demand resources for any gap in reserve margin can hardly be viewed as putting supply and demand resources on an equal footing. Quite simply, it only puts a very small amount of marginal additional resources on an equal footing.

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[31] Sims direct test., p. 19, ll. 1-11.

[32] Sims direct test., p. 10, ll. 1-2.

[33] Dean direct test., p. 7, l. 20 – p. 8, l. 2

It is quite likely that additional demand-side resources would be cost-effective to offset existing plant operation. DSM typically can be captured for 2-4 cents/KWh. This does not necessarily mean these plants sit idle, as sales into the grid can still be made, benefitting ratepayers. Also, because DSM load reductions accumulate, the more Florida captures now, the more it can defer future new capacity that might be needed after 2019, providing a present value benefit today. Finally, greenhouse gas reductions (a clear priority of the Legislature) would likely be proportionately higher with more DSM offsetting baseload coal plants rather than only those on the margin that are likely to be fueled by natural gas. A full IRP considers the least cost way to meet total resources with all available options.

Q. Is the difference between relying on RIM versus TRC significant?

A. Yes. FPL Witness Dean quotes the Commission in 1993 as finding "the record in this Docket [No. 930548-EG] reflects that the difference in demand and energy savings between the RIM and TRC portfolios are negligible."[34] Further, some of the scenarios provided in FEECA utilities' analyses would imply that perhaps this is of more academic interest than real importance.[35] However, that is not the case.

While the basic measures that pass RIM and TRC economic potential analysis do not appear to vary dramatically based on Exhibit JRH-18, the impact on actual net portfolio savings in Florida would be very large. This is because RIM can dramatically limit the ability for a utility to effectively promote a measure with

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[34] Dean direct, p. 15, ll. 11-13.

[35] For example, Exhibit SRS-4 shows the remaining measures after all screens of 279 for E-RIM and 305 for E-TRC.

a well designed program and sufficient incentives. Any increase in incentives will lower the RIM benefit-cost ratios. As I have made clear above, the result can be limited program efforts with low incentives, and very high free ridership.

This effect is not readily apparent in the record because of all the other screens, and the fixed incentive designs modeled. However, even here it can be partially seen in Exhibit MR-3, where the difference between RIM and TRC under the low incentive scenario is a 35% increase in GWh savings under the TRC Test, while under the high scenario it is 70%. With even more aggressive program strategies, it would become even larger.[36] It appears that many measures just barely pass the RIM test. Thus, there remains little opportunity to increase the budget to promote the measures as would routinely be considered in more effective programs. Indeed, FPL Witness Sim confirms that the E-TRC test "typically results....in much larger benefit-cost ratios than does the E-RIM test."[37]

Q. Have you quantified the reduction in technical potential resulting from the use of RIM instead of TRC?

A. No. The utility files I used to calculate the impact of the customer payback and participant screens only included placeholder RIM benefit-cost ratios so I could not determine how much of the remaining 21% of the technical potential made it through FPL's RIM screen.

Q. Do you have any concerns about how the cost-effectiveness was calculated?

A. Yes. I have not been able to view DSM ASSYST model, so I can not tell with certainty how the tests were conducted. However, from what I have seen and

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[36] Exhibit MR-3, p. 1: FEECA Utilities Total – Program Net Achievable Savings Potential in 2019.

read, I have a number of concerns. I believe the TRC Test may leave out important components of costs and benefits. I also believe the TRC Test relies on an unreasonably high discount rate. NRDC/SACE Witness Steinhurst addresses the appropriateness of the avoided costs used.

Q. What are the suspected omissions in the TRC costs and benefits?

A. I believe that the economic analyses are not taking into account non-electric benefits (NEBs) and market effects. They also appear to ignore important timing effects associated with early retirement measures. NEBs can be very significant for many efficiency measures. These can include, but are not limited to: fossil fuel impacts, decreases in maintenance costs (efficient equipment tends to also be more reliable, and in early retirement measures much newer too), reductions in other resources such as water, and significant industrial process benefits in terms of increased production, improved quality, reduction in waste disposal costs, etc.

Market effects refer to additional savings that can result from programs designed to transform markets, but that may not directly receive incentives and may occur after the program ends. Many programs focus on things like building awareness, education and training, and other strategies, designed to permanently modify the behavior of the market. These strategies can result in significant additional benefits beyond those from customers directly participating in a program. For example, by training HVAC contractors how to properly size and install air conditioners, these practices may well continue beyond any incentive that is paid to do this.

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[37] Sims direct test., p. 55, ll. 8-10.

For early retirement (retrofit) measures, I believe the TRC analyses may ignore the long term cost savings resulting from the replacement of older inefficient equipment with new equipment. While the initial measure cost is the total cost of equipment and labor, the customer benefits significantly from shifting out the need for future capital expenditures. For example, if an air conditioner that is 10 years old and expected to last another 10 years is replaced with a new one, the customer no longer has to buy a new one in 10 years. By shifting these planned capital investments out 10 years perpetually, the customer realizes a significant present value benefit. In addition, older equipment typically has significant maintenance costs that are avoided in the near term when replaced with new equipment.

Offsetting this cost savings, early retirement measure savings should also adjust the long term savings downward. In the example above, the savings in the first 10 years would be the difference between the old, inefficient AC and the new high efficiency one. However, in year 11 the customer would have replaced the old AC with a new standard efficiency unit. Therefore, the savings from years 11-20 should be the difference between the high efficiency unit and the expected baseline unit. As far as I can tell, neither the cost nor the benefit adjustments were done. However, in general, the cost reductions are more significant than the benefit reductions, so the result would be to underestimate the cost-effectiveness of these measures.

Q. Explain your concerns about the discount rate used in the TRC Test?

A. My understanding is that the same discount rates were used for both the RIM and TRC Tests, based on a weighted utility cost of capital. These discount rates range from a low of 5% (JEA) to a high of 8.89% (FPL). Excluding JEA, they

range from 7.64-8.89%, with an average of 8.22%.[38] I believe these are nominal (including inflation) rates. While the utility cost of capital is reasonable for a RIM test, it is not for a TRC test. Generally, TRC tests are performed using a societal discount rate that is significantly lower than this, since the focus is the general welfare of society at large.

Q. What is the impact of using a higher discount rate?

A. The higher discount rate will cause DSM to appear less cost-effective, compared to supply options. This is because virtually all the costs of DSM measures and programs are paid up front, while the benefits in terms of energy savings accrue over the life of the measures. With a higher discount rate, the present value of these future benefits is significantly reduced.

Q. Why do you think it was inappropriate for the achievable potential analyses to include the program administration costs when screening individual measures?

A. The selection of individual measures in terms of cost-effectiveness should only include the costs and benefits directly related to the measure. Once the list of cost-effective measures is determined, they can be mapped into programs. The programs and overall portfolio screening should include all program costs, including, but not limited to, that spent on marketing, administration, monitoring and evaluation, technical analysis, data tracking, and other necessary program costs (collectively referred to as program administrative costs). As noted earlier, Section

[38] Response to NRDC/SACE interrogatory 1, question 3.

366.82(7) provides for the further review of costs at the program level, and therefore it is appropriate to exclude program costs at this point.

This is because once a utility is offering a program, the program administrator should strive to capture all cost-effective measures in a given customer's facility. Encouraging a single additional measure to a customer doesn't necessarily change these other fundamental program costs, which can be considered somewhat fixed.[39] Therefore, adding in these non-measure costs can dramatically underestimate the cost-effective efficiency potential by eliminating from consideration all measures that fail.

For example, consider a direct installation program model, which is a common program for certain markets, including low income customers, high use residential all electric customers, and small commercial customers. Under this model, a program staff or contractor will go on-site to evaluate efficiency opportunities for a customer. Then they will, either in the same visit or a follow-up visit, directly install the appropriate and cost-effective measures. Under this model, the utility has already incurred or committed to certain program costs, regardless of the specific measures installed at that site. They have spent money on a marketing campaign, they have developed a tracking system, they have hired program staff to administer the program, they have hired consultants to design and plan for the program, they have committed funds to monitoring and evaluation, etc. Once on site, they have also incurred the cost of travel and the initial audit or technical

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[39] Obviously, some program administration costs can increase slightly with greater program measure activity, however, this is generally very minimal. For example, a customer applying for a rebate for one measure or two is likely to consume virtually identical administrative resources.

assessment regardless of how many opportunities they find. They will identify a number of appropriate measures to install. If they identify an additional measure – say an extra light fixture than can be retrofitted – the only change in cost is the cost of installing that specific measure. All the other costs can be viewed as sunk costs.

So, while it is certainly important to analyze programs and the portfolio including all costs to ensure they are cost-effective, it is not appropriate to eliminate from consideration individual measures based on these non-measure costs.

Q. Is it common practice when utilities screen individual measures for a given customer project to determine if they will provide a customer an incentive to include these administrative costs?

A. No. I am not aware of any program that will deny a customer a rebate for a "custom" measure based on adding on these already committed costs. Typically, a utility will require that any measure that is not offered in a standardized, prescriptive fashion (e.g., a published form that offers a set amount of money for a specific widget regardless of individual cost-effectiveness) — a so-called "custom" measure — to undergo a cost-effectiveness screening to determine if the measure qualifies for a rebate. In this case, only the actual measure incremental cost is used in the screening, because that is the incremental cost associated with that specific measure or package of measures getting installed. My firm has developed the custom project screening tools used by the majority of the DSM programs throughout the Northeast, including in CT, MA, NJ, NY, RI and VT.

Q. What is the impact on the achievable potential analyses from including these administrative costs in the screening?

A. I can not tell. I have not been able to determine what the program budgets are, nor how much additional costs were added to the measures to account for this. However, it could be quite large. In many DSM portfolios the administrative costs are quite large, in some programs they can exceed the measure costs, particularly those focused on longer term market transformation. For example, in 2008 the total program non-incentive ("administrative") costs for Efficiency Vermont were 76% of the total measure costs (including the customer contribution and incremental engineering costs) for its portfolio.[40] At this level, adding administrative costs would cause a measure with a TRC benefit-cost ratio of 1.75 to fail.

Q. Do all the utility achievable potential analyses apply this additional program cost?

A. I believe only FPL, PEF, TECO and Gulf do, based on Witness Rufo's direct testimony.[41]

Q. Please explain your concern about the bundling and unbundling of measures?

A. For each technology, Itron considered the opportunities for a number of building types or industrial sectors. This is common practice in potential studies, and can provide a higher level of accuracy assuming good data is available to

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[40] Efficiency Vermont 2008 cost data. Note that Efficiency Vermont's total cost of efficiency programs in 2008 was only 2.5 cents/KWh saved, indicating the portfolio was capturing savings relatively cheaply with this budget (EVT 2008 Preliminary Annual Report, March 2009).

[41] Rufo direct test., p. 20, ll. 10-11.

support this disaggregation. Thus, measures were analyzed for each combination of technology and building type.

The result is that some measures are cost-effective in certain building types, while not passing a specific test for others. For example, a hot water efficiency measure may be very cost-effective in hospitals, hotels, schools and restaurants, but fail in other building types. By bundling these measures together for all building types it is likely that a hot water measure could fail overall, thus eliminating any opportunity for this measure, even though it is cost-effective in significant opportunities that programs could capture.[42]

Q. What is the impact on the achievable potential analyses from this bundling process?

A. I can not tell. It is possible it could result in eliminating significant potential. However, it is also possible that it could result in additional potential for a technology that passes overall but has significant building types where it failed.

Q. Do you know why this bundling and then un-bundling was done?

A. No. I would normally assume for simplicity to minimize the number of measures to deal with in the analysis. However, it is generally easy to apply a given formula to a whole array of data (E.g.. in Excel, typically copying the formula down the column). I would think the effort to bundle, and then to unbundle again and still have to deal with the full measure set, would offset any saved efforts.

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[42] Note that typically the two largest commercial building in terms of load are offices and retail establishments, where little hot water is used.

Q. Do you have other concerns regarding bundling of measures in general?

A. Yes. While the method of screening out measures that are not cost-effective is consistent with standard practice in doing potential studies, it inherently results in conservative (*i.e.*, low) estimates of true potential. That is because the choice of including a given measure is a binary one — either it passes or it doesn't. If it fails, the implicit assumption is that there is zero cost-effective efficiency potential from that measure. In the real world however, many technologies may be cost-effective for one customer and not for another. Thus, measures that fail an overall cost-effectiveness test on average for all customers will likely still offer large and cost-effective potential among many customers. Typically, this potential will still be targeted and captured in programs, based on site-specific cost-effectiveness screening. Thus, the true achievable potential is generally larger than estimated in these types of studies.

Unbundling measures at the building type level can reduce this problem some. However, even within a single building or industrial type, there may be large variation of opportunities because of differing hours of use, coincidence with the electric system peak, and other factors.

Q. Do you have any evidence that FEECA utilities will in fact offer programs that address the specific individual customer economics, as opposed to only promoting those measures that passed the bundled screen?

A. Yes. When FPL Witness Haney is asked "Does the portfolio of measures utilized for the development of the proposed DSM Goals represent the expected measures that will be included in the DSM Plan to meet the goals?" he responds: "Not completely. FPL's DSM Plan will reflect a slight difference in the mix of

measures to achieve the goals. This reflects the difference between the modeling of the average impact across all customers versus the impacts at an individual measure installation level."[43]

Essentially, the FEECA utilities are asking the Commission to base goals on analyses that screen out virtually all of the potential savings, but then would likely meet these goals with numerous measures they have omitted from the analyses.

Q. Please explain your concerns about the measure penetration model used in the achievable potential analyses?

A. Witness Rufo explains the methodological approach to modeling achievable penetration rates in Exhibit MR–11. Essentially, Itron has used a formulaic approach that models penetration curves as a function of customer economics, with different curves reflecting some customizable non-economic factors including the level of barriers to adoption, customer awareness and the relative importance of indirect benefits.[44] In general this approach is a significant improvement over some studies that have relied solely on a single curve that assumes customer economics is the only relevant factor. As explained above with the retrocommissioning and chiller example, customer economics alone can not accurately predict either naturally occurring or program achievable penetrations.

While the addition of other variables to modify measure-specific curves is certainly an improvement, the overall method used by Itron is still problematic for a number of reasons. I focus on the most critical of these:

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[43] Haney direct test., p. 32 l. 18 – p. 33 l. 2

[44] Exhibit MR – 11, p. 1

1. The level of customer awareness and barriers are assumed to be relatively static, regardless of any DSM efforts, resulting in the *net* penetration for any measure fundamentally ending up being driven primarily by customer economics because of the static nature of awareness, barriers, and indirect benefits;
2. The penetrations do not reflect maximum achievable penetrations that could be captured with the best programs, but are constrained by a pre-specified, one-size fits all incentive scheme, that drives the customer-economic-based penetrations;
3. The penetrations were initially based on actual industry program experience, rather than the maximum achievable penetrations; and
4. The final penetrations were calibrated and constrained to limit overall goals to no more than the status quo that has existed in Florida.

Q. Please explain the first concern, that levels of awareness and barriers are relatively static?

A. While the ability to modify qualitatively levels of customer awareness is in theory a good feature of the model, it is not clear that this barrier was assumed to be significantly overcome by good program design. A primary and necessary, but not sufficient, function of successful DSM programs is to ensure that levels of customer awareness are raised significantly. It is unclear exactly how the model was used, and what changes between the base case curves and the program penetration curves were done. However, it appears that the same basic curves were used for both scenarios. Witness Rufo states that: "The effect on the amount of

adoption estimated depends on where the pre- and post-incentive benefit-cost ratios fall on the curve."[45]

Q. What is the effect of this approach?

A. In essence, it ignores the ability of successful DSM programs to overcome the non-economic barriers to efficiency adoption, and simply assumes that things like awareness and other non-economic barriers can not be influenced. This is contrary to general DSM theory, and simply assumes Florida could not deliver different and more effective DSM programs than they already offer. In my experience, the non-economic barriers are the most critical ones to achieving adoption. Indeed, experience shows that penetration rates among some programs with relatively low incentives have outperformed those that offer higher incentives, but do a poorer job of overcoming other barriers. It is as if a program that simply puts a rebate form on a website will have the same impact as one that aggressively uses broad-based marketing, upstream education, training and promotion efforts, technical assessments and other aggressive non-financial strategies.

The analysis and record support no discussion whatsoever of the actual program designs it assumes, and why they reflect the best and most aggressive achievable portfolio that could be offered in Florida.

Q. Explain what you mean by the penetrations are not based on the maximum achievable potential that could be captured?

A. Quite simply, the FEECA Statute requires an analysis of "all *available*" efficiency.[46] The Legislature has directed the Commission to establish goals after

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[45] Exhibit MR – 11, p. 6

consideration of this full available potential. However, the penetrations modeled simply do not reflect that. For example, the incentive level scenarios clearly constrain the customer economics that drive the penetration results. While it may be determined that incentive designs similar to these scenarios are appropriate for a given market or program, they certainly could be increased. By definition the maximum achievable potential should reflect the most cost-effective savings that could be captured, with the most aggressive, well designed, and fully funded programs.

For example, successful program models have been proven to capture 80% measure penetration when relying on direct installation programs with significant incentives or financing designed to offer customers immediately positive cash flow.[47] NRDC/SACE Witness Cavanaugh discusses the Hood River program that achieved even higher penetration.

The average of the maximum penetration rates for each measure for FPL's analysis of the residential sector ranges from a low of 6.8% (RIM-Low scenario) to a high of 17.1% (TRC-High scenario). For the commercial sector, the figures are 9.3% and 17.9%.[48] In addition, it is worth noting that the penetrations modeled are constant from 2010 to 2019, implying that the FEECA utilities would not be

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[46] Section 36.82 (3).

[47] See, for example, Nadel, Pye & Jordan, *Achieving High Participation Rates: Lessons Taught by Successful DSM Programs*, American Council for an Energy Efficient Economy, January 1994 and Mosenthal & Wickenden, *The Link Between Program Participation Rate and Financial Incentives in the Small Commercial Retrofit Market,* Proceedings of the International Efficiency Program Evaluation Conference, 1999.

[48] I have not been able to obtain the Industrial sector files, nor other scenarios. From: FPL Resp to NRDC-SACE Penetration rates (prepared by Itron).xls.

capable of ramping up program penetrations over time as awareness and capability builds.

Q. Why do you criticize the penetration curves for being based on typical DSM program results?

A. Actual DSM program results are certainly important results to consider when modeling penetration. However, it is very rare that existing programs, even in those areas with the most aggressive programs, have unlimited budgets and have strived to capture all achievable potential. In reality, existing program results certainly establish a floor of what can be done, but do not represent the most that can be done. Programs are almost always budget constrained.

For example, Efficiency Vermont has been considered a leader in efficiency since it began delivering programs in 2000. During the first half of this decade, it captured net savings of roughly 1% of load incrementally each year, similar to many other leading jurisdictions. While this put Vermont in the category of a leading DSM state, it was still far short of capturing maximum achievable opportunities. In 2006 Efficiency Vermont's funding was dramatically increased — although still fixed. As a result, from mid 2006 to 2008 Efficiency Vermont ramped up programs in a short time and captured 2.5% of load in incremental savings in 2008 — a 250% increase in effort.[49] In addition, it achieved 4.5% of load in incremental net savings among specific geographic areas it was asked to target because of potential T&D constraints.[50] This shows that, while considered a leader

[49] Efficiency Vermont Preliminary 2008 Annual Report, March 2009.

[50] Geotargeted area savings and load data provided by Efficiency Vermont.

at 1%, the program activity at that level was still far from the full savings that could be achieved.

It is not clear what specific program designs are assumed for Florida, how aggressive they are, or if the analyses even consider specific program strategies beyond incentive levels when estimating penetrations. However, it is worth noting that in 2008 in the geographic areas targeted Efficiency Vermont achieved roughly an order of magnitude more savings *in a single year* than FEECA utilities have estimated as the *total 10 year achievable potential.* This results in an *average per year savings level roughly 100 time higher* than FEECA utilities proposed goals.

Q. Why do you conclude that penetrations and programs were constrained by existing Florida program performance?

A. Witness Rufo's testimony makes this clear:

> "A critically important step in the achievable potential methodology is to calibrate the adoption estimates to actual program adoptions as much as possible. For this study, program accomplishments were received from the FEECA utilities and used in this calibration process....Itron began with measure-specific adoption curves developed from other recent Itron and KEMA potential studies. Itron then compared the results from using these curves to the FEECA utilities' recent program results. Adjustments were then made to some of the adoption curves to obtain results that better align with **actual program accomplishments in Florida**. This process was repeated in consultation with the FEECA utilities **until the utilities and Itron agreed that**

the results were consistent with program experience in Florida."[51] [emphasis added]

Q. Isn't recent Florida data the most relevant information for what can be done in Florida?

A. No. If the FEECA utilities had unlimited budgets and had been pursuing very aggressive DSM efforts for years, with well designed, mature programs, then this might be appropriate. However, that is far from the case. Compared to leaders in DSM, Florida is far behind in its DSM accomplishments, as is discussed in detail by SACE/NRDC Witness Wilson. For example, FPL, despite arguing that it is a national leader in DSM, has historically captured approximately 0.2% of electric load from DSM per year.[52] This is less than an order of magnitude lower than leaders have already achieved, and than many jurisdictions are currently setting as future goals. Even some states with virtually no history of DSM have established DSM goals an order of magnitude larger than Florida's recent accomplishments. For example, in 2007 Illinois passed legislation requiring utilities to ramp up to 2% per year incremental savings.[53]

Q. What is the effect of relying on historic Florida accomplishments for calibrating penetration rates?

A. Quite simply, it is to arbitrarily limit the achievable potential analyses to no more than what Florida is currently doing. In actual result it has limited the achievable potential analyses to substantially less than Florida has been doing and

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[51] Rufo direct test., p. 24, ll. 4-18

[52] NRDC/SACE Witness Wilson Direct Testimony, Exhibit JRW-1.

[53] Illinois Power Agency Act (Public Act 095-0481).

even than its currently established goals for 2010-2014. This is because, as I have shown above, the analyses already screened out at least 4/5ths of the potential prior to applying these status quo penetration rates.

Simply constraining the analysis to past accomplishments is clearly contrary to the intent of the Legislature in passing the FEECA Statute. Presumably if the legislature had deemed the current FEECA utilities' DSM efforts sufficient, they would have seen no need to enact new legislation.

Q. What is the basis for your statement that the achievable potential results are not credible?

A. I base this on a number of factors. Besides the major methodological problems described above with the analysis, I focus on the outcome and its plausibility from my experience as an expert in the DSM field. I supplement that with the simple fact that there are numerous jurisdictions currently pursuing DSM that is an order of magnitude more aggressive than the FEECA utilities' proposed goals. Finally, I explain how, while different than other states, if anything I would expect efficiency opportunities in Florida to tend to be higher than in many of the states that are achieving well beyond the proposed goals.

Q. Can you expand on this discussion?

A. Yes. We now have in North America about two decades of DSM efforts in various regions of the country, across different climates and in jurisdictions with widely varying avoided electric costs and retail rates. A number of jurisdictions have been capturing incremental net savings in the range of 1.0% of total electric

load per year for over a decade.[54] Recent ramp-ups and goals or accomplishments are 2.0% per year or more savings in a number of areas. Exhibit PHM – 1 shows currently established legislative or regulatory goals for numerous states, including many with little or no history of DSM activity. This table was compiled from ACEEE data, with adjustments as appropriate to correct errors or provide newer information. This shows that levels of 1% per year to considerably higher have been captured or are planned in a variety of areas through-out the country.

Florida, like any state, has many unique aspects. Climate, demographics, industrial sectors, energy costs, and other things can vary considerably from place to place. However, fundamentally, the market place for energy using systems and equipment is a national, if not global, one. Floridians are purchasing and using the same lights, air conditioners, motors, and other equipment that are being purchased and installed elsewhere.[55] Further, while Florida's energy costs may be lower on average than those in California and the Northeast, they are certainly higher than other areas that have found large and cost-effective efficiency resources, including the Pacific Northwest in the U.S. and many parts of Canada. In fact, lower energy costs should translate into greater efficiency potential because customers have less incentive to adopt efficiency on their own. Finally, Florida's hot climate and high saturation of all electric buildings should result in higher cost-effective achievable efficiency than in states with milder climates and substantial use of fossil fuels for buildings.

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[54] For example, but not limited to, CA, CT, MA and VT.

[55] Although probably proportionately less of the most efficient ones compared to states that have aggressively pursued past DSM.

Q. Why would Florida's situation indicate that, on average, potential may be higher than other places with leading DSM achievements or goals?

A. First, it is useful to think about efficiency potential in terms of the percentage of existing or forecast load. While different end uses and climate will of course vary the absolute magnitude of efficiency (in terms of kWh or kW), the *percentage* opportunities don't generally vary dramatically. In the case of Florida, I would expect there might be proportionally higher potential than other areas for the following reasons:

1. The relatively hot climate should result in much longer cooling hours than places like the Northeast and West Coast. As a result, many more cooling opportunities should be cost-effective.
2. The long cooling hours also will increase the cost-effectiveness of commercial indoor lighting measures somewhat, because efficient lighting provides non-trivial cooling benefits from reduced waste heat. In other more temperate places, lighting cost-effectiveness is actually reduced by the need to increase space heating energy during the winter to offset the lighting savings.
3. Florida does not have a history of deep efforts in DSM. At most, Florida has been capturing about 0.2% per year in electricity savings. Therefore, I would expect more efficiency to still be available than in places that have been capturing roughly five times this amount for as long as two decades.

Q. How does Itron/KEMA's estimate of potential in Florida compare to recent studies they have done?

A. KEMA has recently completed an electric potential study for Connecticut, which has had aggressive DSM programs for about two decades.[56] KEMA found a very similar technical potential (36%) as they found in Florida (34%). However, it estimated *economic* potential at 33.1%, or 91% of the technical potential. This is fairly typical of most studies, since generally measures that are likely to not be cost-effective are omitted, as explained above. I do not know what the results of the economic potential in the Florida analysis would come to, since only four of the seven utilities reported these essential data at a summary level (only). However, I have shown above that only 21% of the technical potential (7% of load) remains after applying just two of the three screens for FPL.[57]

KEMA's Connecticut study also estimated *achievable* potential of 22.5%, or roughly 62% of the technical potential. This again is fairly typical. In contrast, Florida's analysis has only found between 0% and 2% of the technical potential depending on utility. This study also estimated the achievable potential net of Federal and State codes and standards and naturally occurring efficiency. The table below shows a comparison.

[56] KEMA, *Potential For Energy Efficiency in Connecticut,* prepared for the Connecticut Energy Conservation Management Board, United Illuminating, and Northeast Utilities, May 2009.

Potential Study Results

State	Technical Potential	Economic Potential		Achievable Potential	
	(% of load)	(% of load)	(% of Technical)	(% of load)	(% of Technical)
CT	36.4%	33.1%	91%	22.5%	62%
FL	34%	< 7%*	< 21%	0 - 0.7%	0 – 2%

* Based on FPL analysis just applying the two screens of customer payback and participant test results in 7%. This is without even including the final screen of the RIM test, so clearly the final number is less than 7%.

Q. Isn't it possible that these extreme differences in what can be achieved is a function of the differences between the states?

A. No. Virtually all the primary differences between states are already accounted for in the technical potential, which is extremely similar between the two. These could include, but are not limited to, things like climate, building stock, average efficiency of existing equipment, demographics, fuel shares, and industrial sectors. Differences in avoided costs will have some effect on economic potential, but that is not typically large as most efficiency opportunities are highly cost-effective. The only logical explanation would be that Floridians are somehow less capable than Connecticut residents of participating in well designed and implemented programs. Rather, the low goals appear to be a result of the unreasonable assumptions, methods and constraints imposed on Itron/KEMA by the FEECA utilities in their analysis.

IV. DSM GOALS (Issues 8 & 9)

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[57] While Exhibit SRS-5 shows "economic potential" under the E-RIM and E-TRC tests, as far as I can tell this does not include the other two screens used to exclude measures prior to the achievable potential analysis.

Q. What DSM goals do you recommend the Commission establish?

A. NRDC/SACE Witness Steinhurst presents recommended goals in Exhibit WS-1. These reflect a ramp up to 1% of load incremental net savings per year. I support these goals *as a minimum level* for consideration for interim goals. Requiring at least 1% of load incremental net savings per year will establish Florida as one of many leading states, but still well behind a number of them, as shown in Exhibit PHM-1. As this exhibit shows, many of the leading states are now in the process of ramping up to significantly higher goals, in some cases in excess of 2% per year.[58] I believe the true achievable potential is likely much higher than this level. Indeed, if one were to apply typical ratios to the technical potential results, it is likely that 2.2% per year or more net savings can be achieved.

Q. FPL Witness Haney suggests that even though the proposed program goals are lower than the current Florida goals, we should consider that Floridians will actually save more because of Federal Standards.[59] Should we include codes & standards savings in any goals we set?

A. No. It is true that Florida's future electric load will be lower than it otherwise would have been because of Federal standards that will go into effect over the next ten years. However, that is already embedded in the forecast,[60] and not attributable to FEECA utilities programs, nor under the control of the FEECA

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[58] For example, I am currently in the process of working with the Massachusetts Energy Efficiency Advisory Council and the MA utilities in discussions on ramping up goals to somewhere between 2 – 3% savings per year.

[59] Haney direct testimony, p. 29 l. 16 – p. 31 l. 23.

[60] Haney direct testimony, p. 31. l. 6.

utilities. Any goals should reflect the net savings (net of free riders and spillover) of these programs only.

Q. Why are you suggesting the Commission establish interim goals at this point?

A. I believe the record is clear that the achievable potential analysis the FEECA utilities have put forward does not adequately estimate a reasonable level of savings that could be achieved. This leaves the Commission no good choices. Therefore, I believe the most appropriate solution is to establish interim goals that evidence throughout the U.S. shows are clearly achievable, and directing the FEECA utilities to revise its analysis to better reflect the true achievable potential in Florida. The Commission can then consider increased goals in the future based on this revised analysis. Further, while 1% per year is no longer considered an aggressive goal by many in the DSM industry, it is significantly higher than current the FEECA utilities' efforts. As a result, there will need to be a ramp up period that allows time for further consideration of the achievable potential.

Q. Is there any precedent for a Commission finding a potential study done for goal setting to be problematic such that it set temporary goals and required a more detailed and appropriate potential study be done to establish future goals?

A. Yes. In Colorado the Commission recently did just that with a KEMA potential study. After finding the study excluded important residential market potential, it ordered: "Public Service [of Colorado] shall complete a comprehensive

update of the DSM market assessment on a timetable that will inform the 2011 ERP filing and in accordance with the discussion above."[61]

In fact, the interim goals approved by the Commission, and proposed by Public Service (PS), exceeded even KEMA's highest achievable potential scenario (incentives=75% of incremental cost). Public Service explicitly rejected its own study's findings as too conservative and proposed significantly higher goals than KEMA estimated was achievable.[62] PS Witness Sundin testified: "Q. Why did you not use the achievable potential estimated in the market potential study as your goal? A. ...the achievable potential factor barriers such as lack of customer awareness, concerns about new technology reliability, etc. into consideration. Based on the Company's recent experience in the Colorado marketplace, Public Service believes it can overcome many of these barriers through stepped-up marketing and education and that, with time, greater overall customer awareness of energy efficiency measures will facilitate achievement of the Company's goals."[63]

Q. Does this conclude your testimony?

A. Yes.

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[61] Colorado PUC, Order in Docket 07A-420E (Decision No. CO8-0560), May 23, 2008.

[62] Direct testimony of Debra L. Sundin before the PUC of Colorado, Docket No. 07A-___E, p. 14.

[63] Direct testimony of Debra L. Sundin before the PUC of Colorado, Docket No. 07A-___E, p. 14. ll. 14-22.

MR. JACOBS: And I believe that we have one exhibit that has already been marked sponsored by Mr. Mosenthal, Exhibit 78, attached to his prefiled direct testimony.

CHAIRMAN CARTER: For the record, Commissioners, Exhibit Number 78 for identification purposes.

(Exhibit Number 78 marked for identification.)

BY MR. JACOBS:

Q. Mr. Mosenthal, have you prepared a summary of your testimony?

A. I have.

CHAIRMAN CARTER: Before Mr. Mosenthal, since he had not been sworn, was he here yesterday? Are you familiar with our lighting system here?

MR. JACOBS: I don't think he was, Mr. Chairman.

CHAIRMAN CARTER: Okay. Let me help you out there, is that your summation should take not more than five minutes. The green light means you're good. When the yellow light comes that's lit up in front of me here, when it comes on, you have two minutes left. When the red light comes on you have 30 seconds left. When it flashes, you are all out of time. Okay?

THE WITNESS: Okay. I'll try and be quick.

CHAIRMAN CARTER: Thank you.

THE WITNESS: Thank you, Chairman and Commissioners, for the opportunity to testify today.

My testimony shows that the FEECA utilities have not complied with the letter or intent of the FEECA statute, nor followed standard industry practice in analyzing the achievable potential. This failure is fundamentally a result of a highly constrained analysis that ignores the vast majority of achievable potential in Florida.

Rather than an estimate of what could be cost-effectively and reasonably achieved with well-designed and delivered programs, the utilities have chosen to simply develop a forecast of what they would achieve under very restrictive and constraining DSM policies, assumptions, and implementation strategies. Indeed, the resulting FEECA proposed goals are more than an order of magnitude lower as a percentage of current or forecast load than have already been achieved or are currently planned in numerous jurisdictions throughout North America, and almost two orders of magnitude lower than some of the most aggressive achievements.

My testimony further shows that these dramatically lower proposed goals are not a result of any technical, demographic, firmographic, equipment

availability, or climatic differences that exist in Florida as compared to these other jurisdictions. Rather, they are simply a result of the FEECA utilities choosing to develop very low proposed goals by imposing unreasonable constraints, constraints that I find are not consistent with the plain language and legislative intent of the FEECA statute.

The two most onerous constraints are the two-year payback criterion, a criterion --

CHAIRMAN CARTER: Hold on one second.

Mr. Jacobs, would you pour him some water to drink there?

THE WITNESS: Oh, thanks. The two most onerous constraints are the two-year payback criterion, a criterion I have never seen imposed anywhere else, and the reliance on the RIM test.

Regarding the two-year payback criterion, I show how this is inconsistent with standard DSM practice, and in my non-lawyer view, the statute. The utility's basis for this constraint is claimed to be to minimize free riders. However, this argument has no merit. The technical potential starts by netting out all the currently adopted efficiency measures and those that will happen due to codes and standards.

Further, the DSM ASSYST model explicitly

estimates both the naturally occurring future measure penetrations and those that can be achieved with DSM and calculates the difference.

So as with any achievable potential study, the result would be the achievable potential net of free riders. Mr. Rufo has confirmed this. In other words, no free riders would have been included in the results that the Commission would consider in setting appropriate goals had the analysis been done properly. Rather, it appears the utility simply did not want to show this fast and highly cost-effective potential to exist at all.

Indeed, the measures that have been eliminated represent the majority of the most cost-effective measures most commonly promoted by other DSM programs. Eliminating promotion of these measures would deny Florida consumers the energy cost savings of these most highly beneficial measures with the lowest cost to ratepayers.

Regarding the RIM versus TRC argument, the statute's language is quite clear, "The costs and benefits of all ratepayers as a whole" should be considered. This doesn't mean each and every ratepayer individually, nor even the nonparticipant segment as compared to the participant segment. It means the

collective ratepayers as a whole. It does not say every ratepayer must be better off, but, rather, that the collective ratepayers should be better off.

The TRC test unquestionably does this, while the RIM test clearly does not. The utilities have argued that only the RIM test includes lost revenues and that this is a cost to ratepayers as a whole. This is simply incorrect. It is not a cost. It may result in a transfer of wealth from nonparticipants to participants, however, the total revenue requirement does not go up from DSM. In fact, it goes down due to savings of variable costs such as fuel and O&M. The simple fact is there is no possible other standard DSM test besides the TRC that could possibly meet this new requirement of the statute.

Further, even while vehemently arguing the RIM versus TRC issue, the utilities also claim it makes very little difference. I show how this is also not true both in this case specifically and also for future efficiency opportunities. Relying on the RIM test will prevent capture of large opportunities for cost-effective efficiency that will lower total costs to all ratepayers as a whole while preventing the opportunity for customers to reduce their energy costs and create economic development and local jobs. This

would deny Florida billions of dollars in net benefits to their economy.

Because of the inadequacy of the utilities study, NRDC and SACE witnesses have recommended interim goals and an improved study to form future goals. This goals recommendation is a conservative level of one percent of load and incremental savings per year with a reasonable ramp-up period. I consider these quite conservative based both on the technical potential results that Itron did and the fact that numerous jurisdictions have already proven levels significantly higher than this are readily achievable and sustainable over a long period of time. Thank you.

CHAIRMAN CARTER: Thank you. Let's see.

MR. JACOBS: We tender Mr. Mosenthal for cross-examination.

CHAIRMAN CARTER: Ms. Kaufman, do you have any questions?

MS. KAUFMAN: No questions.

CHAIRMAN CARTER: Okay. Who's on first?

MR. GRIFFIN: I think I'm on first, Commissioner.

CHAIRMAN CARTER: You're recognized.

CROSS EXAMINATION

BY MR. GRIFFIN:

Q. Mr. Mosenthal, I'm Steve Griffin. We spoke during your deposition on July 28th.

A. Yes.

Q. Good to see you in person. How are you doing?

A. I'm good.

Q. Good. Do you have a copy of your deposition transcript with you?

A. I do.

CHAIRMAN CARTER: Get a little closer to your mike.

MR. GRIFFIN: I'm sorry.

BY MR. GRIFFIN:

Q. You do have a copy of your depo transcript with you?

A. Yes.

Q. Okay. And your prefiled testimony, also?

A. Yes.

Q. I think that my line of questioning is going to be very basic, I hope. So if we can just stick to the deposition transcript and the testimony, I think we will be okay.

Mr. Mosenthal, when were you first retained by SACE and NRDC to offer testimony in this proceeding?

A. I believe it was around June 10th.

Q. Okay. And when was your direct testimony

filed with this Commission?

A. July 31st. No, July 24th. It says page numbers added July 24th. I'm not sure. It was late July.

Q. Subject to check, would you agree with me that the revised order establishing procedure required it to be filed on July 6th?

A. Oh, that's why, because page numbers were added. Sorry. Subject to check, I would agree.

Q. Okay. And the July 24th amended testimony, what was the nature of the amendment there?

A. I think it was just that it had been missing the pagination.

Q. Just the page numbers?

A. Yes.

Q. Okay. What, if any, studies or analysis did you perform prior to filing your direct testimony that were specific to Gulf Power Company?

A. I don't believe I performed any that were specific to Gulf Power, other than my general review of the methodology that was used for the potential study as described by Rufo for Gulf Power.

Q. Okay. Prior to filing your testimony, did you review the direct testimony of John Floyd, Gulf Power's witness?

A. I did not.

Q. Yet you have offered expert testimony in this proceeding that the Commission should reject Gulf Power and the other FEECA utilities proposed goals, correct?

A. I have.

Q. What, if any, studies or analysis did you conduct prior to filing your testimony that were specific to Progress Energy Florida?

A. The same. The only -- the only specific quantitative analysis I did was based on FP&L's data, partly just because of the difficulty in getting discovery, and the model being in Tallahassee, and the time constraints, I wasn't able to file everything. And I was clear in the testimony that where I give specific numbers, they refer to FPL data, but that the general concerns, and omissions, and issues that I found with the approach and method apply equally to the other utilities.

Q. Okay. So there were no specific studies or analysis specific to Progress Energy, is that right?

A. That is correct.

Q. Okay. And did you review the testimony of Progress Energy Florida's Witness John Masiello before filing your testimony?

A. I did not.

Q. Did not. The same question for Tampa Electric, any specific studies or analysis other than what you have described?

A. No.

Q. Did you review the testimony of Howard Bryant, Tampa's witness, prior to submitting your testimony?

A. I think -- I know I reviewed all the FPL witnesses and a few others. I believe Bryant I may have reviewed, but I was not able to review all of it.

Q. Okay. And other than reviewing FPL's testimony of their witnesses and the Itron reports, did you do any other analysis or study relative to FPL for purposes of your testimony in this case?

A. I was able to obtain some of the data specifically for FPL and did do some analysis, which I describe in my testimony looking at how the two-year payback criterion affected, you know, what share of the technical potential was removed.

I might add since then Mr. Rufo has responded to discovery providing that same data for all the other utilities, and my estimate for FPL was right in the middle and actually in the low end of the range for all of the utilities. So I believe my conclusions apply equally to all the FEECA utilities.

Q. What is the specific data that Mr. Rufo

provided to you that relates to the other utilities? I'm sorry, I'm not following you there.

A. I don't know if I have it up here. I think it was in response to the first set of NRDC/SACE interrogatories, Questions 1 through 8. I can't tell you off the top of my head what number interrogatory it was.

Q. Okay. Well, that's fine. Let's just move on. Mr. Mosenthal, are you familiar with Rule 25-17.0021, Florida Administrative Code?

A. Is that the cost-effectiveness rules or the DSM goals?

Q. No, sir.

A. I'm not sure by number, but I have reviewed a couple of things since my deposition that has similar numbers.

Q. Do you have a copy of 25-17.0021?

A. I do not.

MR. JACOBS: Would it be possible to get a copy?

MR. GRIFFIN: Sure, we can give you a copy.

CHAIRMAN CARTER: You may proceed.

BY MR. GRIFFIN:

Q. Now, Mr. Mosenthal, you have the rule in front of you. Are you familiar with that rule?

A. Yes, I have read it since the deposition. I had not read it before the prefiled.

Q. Okay. And that rule is the rule that sets forth the Commission's requirements for goals setting in the demand-side management context, correct?

A. Correct.

Q. Okay. And as you just mentioned, prior to filing your testimony in this case, you had not seen or reviewed that rule, correct?

A. That is correct. I would like to point out that after I became aware of the rule, I did go and look at it. And, in fact, I find it entirely consistent with my testimony and some of the criticisms I have of the approach, particularly in Section 1, the last sentence, where it says the goals shall be based on an estimate of the total cost-effective kilowatt and kilowatt hour savings reasonably achievable through demand-side management in each utility's service territory. And I think my testimony shows that what the utilities have put forth is clearly quite shy of anything that would represent the total cost-effective kilowatt hour savings that could be achieved.

Q. Okay. Well, I appreciate that clarification. Thank you. Prior to filing your testimony in this case, did you review the Florida Public Service Commission

cost-effectiveness manual for demand-side management programs and self-service wheeling proposals?

A. Prior to filing my testimony, I did not.

Q. Okay. And are you aware of whether that manual that I just referenced has been adopted by Florida Public Service Commission rule?

A. I believe it has. I'm not entirely clear on whether it continues to apply or is subject to reconsideration, but I have since read it.

Q. Okay. And subject to check, that rule would be 25-17.008?

A. That sounds right.

Q. Okay. Before you gave your summary, you mentioned a correction to your testimony concerning the utilities' application of the Participant test, correct?

A. That is correct.

Q. And let me just draw you to Page 25 of your direct testimony, so that I'm sure we are clear on the nature of the correction.

A. Okay.

Q. Okay. And specifically Lines 18 through 19. And there you say, "The FEECA utilities have screened out measures that do not pass the Participant test without any incentive," correct?

A. That's correct.

Q. Okay. And sitting here today, do you know whether that's the case for the FEECA utilities?

A. Sitting here today, I cannot be sure one way or the other. Mr. Rufo's rebuttal testimony indicates that for the utilities that Itron did the analysis for, they did not do that. I was basing that on a description in Mr. Sim's testimony of what FPL did. And having gone back and read that description, I continue to believe that it describes it the way I understood it. However, his rebuttal testimony says that that was not the case. So I take him at his word that, in fact, I was misunderstanding his direct testimony.

However, I would like to look into it a little more because my analysis was based on a discovery response provided by FPL which showed the benefit/cost ratios that it was my understanding were being used for the Participant test. And based on those numbers, a large fraction of the savings would have been eliminated because of the failing. So I don't know if those were raw numbers that didn't get used and then incentives were applied later.

Q. Okay. Assuming that the other FEECA utilities conducted the Participant test in the way that Mr. Sim indicates that it was conducted in his rebuttal testimony, you would not take issue then with the

proprietary of the way that these tests were conducted with respect to this issue that you identify here?

A. That is correct.

Q. Okay, thank you.

A. I will point out that in the rebuttal testimony what I understand it to say was that when done in combination with the RIM test no measures fell out because of the participant, and it's entirely likely that the same measures that were failing the Participant test were also failing the RIM test.

Q. If you could now just please turn quickly to Page 29 of your testimony, and I want to draw your attention specifically to Lines 9 through 12.

A. Okay.

Q. Okay. And there you offer your opinion that the RIM test is no longer the appropriate cost-effectiveness test under the FEECA statute, correct?

A. Correct.

Q. Okay. Had you ever reviewed the FEECA statute prior to your being retained as an expert in this case?

A. I don't believe I had.

Q. Okay. Do you know whether the FEECA statute has ever expressly referenced nonparticipants or rate impacts?

A. I do not.

Q. You would agree with me, sir, that the FEECA statute does not mention any specific cost-effectiveness test?

A. Not by name. It certainly gives direction in generic English as to what kinds of costs and benefits should be considered, but it does not use any of the DSM jargon in terms of the test names.

Q. And in your professional opinion, if the Florida Legislature had intended for the TRC test to apply, they simple could have said the TRC test will apply, could they not?

A. I guess I wouldn't say in my professional opinion, but in my experience as a citizen, as a voting citizen, I recognize that there is all kinds of sausage making that goes on in legislation. And, you know, I think it's entirely likely that there were parties that didn't want those terms in and parties that did and everything is compromised. And so I really can't speculate on whether it was an intentional omission. It was trying to use language that everybody was comfortable with. I just take it at what it says.

Q. But you agree they could have said that?

A. Certainly.

MR. JACOBS: Asked and answered.

CHAIRMAN CARTER: Well, not really.

MR. GRIFFIN: There was no answer.

THE WITNESS: I agree that it is technically possible that they could have typed those words. I can't tell you even if the Legislature knew those terms.

CHAIRMAN CARTER: That's an answer.

MR. GRIFFIN: That's an answer. Thank you.

BY MR. GRIFFIN:

Q. Mr. Mosenthal, in developing proposed goals, SACE/NRDC did not perform a technical potential study, correct, for developing the proposed goals for this proceeding?

A. That is correct.

Q. Okay. And in developing their proposed goals, SACE and NRDC did not calculate economic potential of measures using the TRC test, correct?

A. That is correct.

Q. And in developing proposed goals, SACE/NRDC did not perform a bottom-up analysis, correct?

A. That is correct. Although we did review the technical potential done by Itron, and that was really our starting point for developing the goals, along with broad experience throughout the country on what is achievable, and what other jurisdictions are doing, and knowledge of what differences exist between Florida and

other jurisdictions.

Q. Okay. So, essentially, you took the Itron numbers, and then you simply made a determination based on your experience that one percent was reasonable under the circumstances, and then just applied that to Itron's numbers to reach a goal for each utility based on the forecasts?

CHAIRMAN CARTER: Hang on, Mr. Jacobs. Let's see if he can answer it. He laid the foundation to ask him about what did he do. He asked him about did they perform an independent -- oh, I shouldn't be arguing his point, but I am paying attention. Let's proceed.

MR. JACOBS: If I may, Mr. Chairman.

CHAIRMAN CARTER: No, no. Let's proceed.

MR. JACOBS: Very well.

MR. CAVROS: Could you read back the question, please.

(Question read back by the reporter.)

THE WITNESS: Well, I did a couple of things. Number one, as I show in my testimony, on the table on Page 55, I did as one example a recent study also done with DSM ASSYST model by KEMA in Connecticut that found virtually the same tech potential as Florida. And I looked at, without the various constraints that I believe were inappropriately applied, what did they find

was achievable. And that came out to an average over ten years of about 2-1/4 percent per year incremental savings.

I will point out that Connecticut also has been achieving about one percent per year incremental efficiency savings for roughly two decades already, and still appears to have plenty of potential left because technologies continue to advance and more opportunities keep coming along. So one thing I did was to say, okay, if your starting point was the technical potential, which already captures all the differences between states in terms of the building stock, the types of customers, the industrial sectors, all of those kinds of things, is the same under the same model, doing a more typical scope of work with the DSM ASSYST, which was done in Connecticut, instead of removing all the things that were removed and the constraints added in Florida, it is very likely you would have come up with a similar number. Because the only real difference is would Floridians for some reason be less capable or less smart about being able to participate in a well-designed and delivered program. So that was one step.

Another step was through my professional judgment and my knowledge of what is being achieved throughout North America, including in places that have

very low rates, places that have very high rates, places that have lower or higher avoided costs than Florida, places that have more or less experience, I think there is ample evidence that one percent is sort of unquestionably achievable.

And, in fact, if it was purely up to me, I would set the goal at about two percent per year. But recognizing that we do not have a detailed bottom up Florida analysis, and what we have before us is an analysis that is really quite inadequate, we felt starting with one percent with a reasonable ramp-up was a reasonable starting point, because I think it's very clear that that's achievable and that that would allow time for the Commission to reconsider what the true potential is and revisit the goals on a number of years.

BY MR. GRIFFIN:

Q. Okay. And I appreciate that clarification. I would like to just direct you to Page 65 of your deposition. Just let me know when you are there.

A. Okay.

Q. Okay. And there toward the middle of the page we were having a discussion about how SACE/NRDC developed the proposed goals. And beginning at Line 19 you give a response, and this is what you say, you tell me if I'm incorrect. "We did not directly calculate

these goals, as I said, from a bottom-up analysis. We chose as a reasonable and, in my opinion, a clearly achievable level of one percent as sort of a minimum for consideration for interim goals. We then defined that as one percent of savings, net of free riders, and then simply took that percent and applied it to utility forecasts to determine the specific numbers for each utility." That's what it says, correct?

A. Yes. And I think that is consistent. Obviously, it goes in a little less detail than what I just said, but I think entirely consistent with what I just said.

MR. GRIFFIN: That's all I have. Thank you, sir.

CHAIRMAN CARTER: Thank you.

Staff, you're recognized.

MS. FLEMING: We have no questions.

CHAIRMAN CARTER: Commissioners, anything from the bench?

Commissioner McMurrian, you're recognized.

COMMISSIONER McMURRIAN: Thank you.

Mr. Mosenthal, I had one question about your statement, and I think it's -- I know we have hit on it. I'm not sure exactly where it was in your testimony, and I know we have talked it about it today where you talk

about the statute. You believe the statute requires use of the TRC test, because with respect to the Part 3B that we have talked about that talks about the cost and benefits to the general body of ratepayers as a whole, that that -- I believe you said that that, in your opinion, means that we should be using the TRC test. Do I have that correct?

THE WITNESS: Yes.

COMMISSIONER McMURRIAN: Does the TRC test include utility incentives?

THE WITNESS: I'm going to give you a little bit of a long answer because, you know, words matter and semantics can get confusing. The TRC test is intended to look at all the costs that all the ratepayers collectively incur and all the benefits that accrue to all the ratepayers.

You know, one of the most major costs in any efficiency program is the cost of installing the measures. And that cost, if you have a DSM program with incentives, with rebates, fundamentally is made up of two pieces. There is the participant's contribution to that measure cost and there is the utility incentive contribution to that measure cost. And in reality if the incentive goes up, the participant cost goes down. You know, the measure cost that society is really

incurring is the same.

So it doesn't actually change the TRC result if you raise or lower an incentive. And I sometimes see it defined as the sum of the utility incentives and the participant costs. Sometimes it simply says the measure cost. And I think that, you know, it's certainly possible that legislators looked at a definition that wrote it that way and just described it that way. There are really two pieces of the cost that two different parties are paying, but it's the same cost. So mechanically you can ignore incentives when you do like a model, like DSM ASSYST, and just start with the measure costs. But I see it as sort of a distinction without a difference.

CHAIRMAN CARTER: Excuse me, Commissioner. Would you mind yielding for a moment?

COMMISSIONER McMURRIAN: Sure.

CHAIRMAN CARTER: I'm so sorry. Mr. Young, I apologize.

You're recognized for cross-examination.

MR. YOUNG: My wife ignores me all the time. I'm used to it.

CROSS EXAMINATION

BY MR. YOUNG:

Q. I wanted to ask you, on Page 17, I think, of

your testimony, the question and answer that was like from 4 to 14. When I first read that --

A. I'm sorry, what page?

Q. I think it's Page 17 of your prefiled testimony.

A. Okay.

Q. Starting about Line 6, I got the impression when I was reading that that you were talking about -- the way I read that, you were talking about the -- you thought that the Legislature had somehow decided that some of the ratepayers of the utility ought to be willing to pay for the benefit of everybody, one way or the other. And you said in your opening statement something like transfer of wealth. Can you go back and tell me what you were referring to in your summary when you used the term transfer of wealth?

A. Yes.

MR. JACOBS: If I may, it would help us if -- if Mr. Young could point us to the point in the direct testimony where he refers to that.

MR. YOUNG: I pointed that out, Mr. Jacobs, and I referred him to his own opening statement, his summary that he gave. In his summary he said something about transfer of wealth, and I wanted to know whether he was talking about his prefiled testimony on Page 17.

MR. JACOBS: That's what I need to know. I'm operating in the blind here.

CHAIRMAN CARTER: Okay, Mr. Jacobs?

MR. JACOBS: Yes, sir.

CHAIRMAN CARTER: Okay.

THE WITNESS: Yes. I'm happy to answer the question based on my opening statement, but I would be interested in where -- which lines. I missed the line numbers.

BY MR. YOUNG:

Q. Well, did you or did you not use the words transfer of wealth in your summary of your testimony a few minutes ago?

A. I believe I did, or something similar.

Q. Well, you spiked my interest when you said that.

A. Okay.

Q. Those are words that are very meaningful to me, and I was trying to find in your Direct Prefiled Testimony what those words might have related to. And I looked on Page 17 and saw your answer when you were trying to refute Mr. Haney's --

CHAIRMAN CARTER: Okay. Let's shorten our questions, Mr. Young.

BY MR. YOUNG:

Q. Well, tell me what you mean by transfer of wealth in relationship to your testimony.

A. Yes. To the extent that --

MR. YOUNG: I didn't do that.

CHAIRMAN CARTER: Hang on one second. We are going to go off the record temporarily. We may have to reset everything.

(Off the record.)

CHAIRMAN CARTER: We are going to go back on the record. And just kind of -- we are back on the record. Our witness will be in momentarily. While we are doing that, Mr. Young, you were going to --

MR. YOUNG: Well, I didn't realize we had a Commissioner with -- I don't want the witness to stay around for one question. And if we can't get back on the record properly, I'll withdraw it so we can be dismissed. I just wanted him to point out to me where in his prefiled testimony, he --

CHAIRMAN CARTER: He is here. He remembers the question. Let's not answer -- no, let's not ask it again. Let's answer the question so Commissioner Argenziano -- Commissioner McMurrian can ask her question, and I can maintain the time constraints that I set on everyone. And I appreciate that.

You're recognized to answer the question, sir.

THE WITNESS: Okay. Thank you.

CHAIRMAN CARTER: Give us the short version.

THE WITNESS: Okay. Well, my understanding was you were just interested in more explanation about the transfer of wealth. To the extent DSM programs don't pass the RIM test, which many don't, and, in fact, even individual measures don't, that is a result of two things. When you save energy, the utility is now selling less energy.

MR. YOUNG: I'm sorry, Mr. Chairman. The question was could you direct me to your -- where in your prefiled testimony supports the summary that you gave where you used the words transfer of wealth. That's all I'm trying to find out. Where in your prefiled testimony do you support that statement?

CHAIRMAN CARTER: If it's not in there, just say it's not in there.

THE WITNESS: I believe it's probably in many places, maybe not exactly termed that way. It goes to the whole issue of RIM versus TRC, where TRC focuses on lowering the total cost of providing the energy services to all ratepayers. However, because energy consumption goes down, and the utilities still have a certain amount of fixed costs that they are now spreading over less kilowatt hour sales, often there will be, at least in

the short-term, a small rate increase. Often it is actually a rate decrease in the long-term as you put off new power plants and transmission and distribution upgrades. But in the short-term the rates can go up.

So to the extent somebody chooses not to participate in the program, they aren't lowering their energy usage, but the rate goes up a little bit, so they will have their bills go up slightly as a collective. And I guess what I was pointing to was the statute that directs a consideration of all ratepayers as a whole, and the TRC is what looks at lowering the total costs of all ratepayers. But some individual ratepayers may see a slightly higher rate. A good portfolio of DSM programs will have opportunities for everybody to participate and even a very small participation like installing one compact fluorescent can often offset that rate increase.

BY MR. YOUNG:

Q. That was a long answer. But I just wanted to make sure that you are not telling this Commission that you think that the Florida Legislature in passing their amendments to FEECA in any way, shape, or form directed this Commission to transfer the wealth from one customer to another in this goals-setting proceeding. Is that your -- do you believe that, yes or no?

A. Yes. I believe that the Florida Legislature, and, of course, this is as a non-lawyer reading the statute and the recent additions to the statute, my read is they specifically were focused on lowering the total cost of energy for the collective body of ratepayers and likely recognized that that may result in some rate increases. But that, you know, if someone chooses not to participate and install efficiency, you know, that that would be --

CHAIRMAN CARTER: I don't want to be rude, but I think you have answered it. And I asked for your short answer.

MR. YOUNG: Thank you very much. I appreciate your honesty.

CHAIRMAN CARTER: And, Commissioner McMurrian, I apologize to you for interrupting you. I had overlooked Mr. Young, but I apologize to you, Commissioner. I hope that you remember your train of thought.

You're recognized, Commissioner McMurrian.

COMMISSIONER McMURRIAN: Thank you, Chairman. It's fine. I don't know if Mr. Mosenthal has this schematic up there still. Ms. Brownless has been using it.

THE WITNESS: I do not.

COMMISSIONER McMURRIAN: But I think maybe we could probably work without it. I have been using it as we have gone throughout this proceeding to try to make sure I get a good handle on what is included in which test out of the three, the Rate Impact Measure, the Total Resource Cost test, or the Participant test.

Thank you, Chairman.

CHAIRMAN CARTER: Absolutely.

COMMISSIONER McMURRIAN: And, Mr. Mosenthal, if you will look at that middle column, and it has to do with the Total Resource Cost test, and it shows in the very last box there in that middle column the participant costs. And it was my -- and I think what you were saying in your earlier answer, you were saying that participant cost would be adjusted by the amount of utility incentives. Is that what you -- you were saying that the Total Resource Cost test would include the utility incentives?

THE WITNESS: Well, utility incentives are part of the utility program costs, which is the box right above participant costs.

COMMISSIONER McMURRIAN: Okay.

THE WITNESS: So this is typically how you would see the TRC test, the utilities spending a bunch of money on the program, some of which is administrative

cost, marketing, evaluations, things like that. And then the participant is paying their share of the measures. And together that is all the societal costs. This shows the increased supply costs. Which, of course, I suppose could apply if for some reason -- you know, let's say you did an efficiency measure that increased fossil fuel use or something like that.

I would disagree -- it is a little confusing, because what I see here under rate impact is that they list a box called utility program costs, and then they list incentives as though it is an additional cost. Well, incentives are just part of program costs, so I'm not -- I'm not exactly sure why that is done. But, certainly, the participant is only paying their share of the measures. So one way or the other, those incentives should be there, either in that utility program cost box or the participant cost box.

COMMISSIONER McMURRIAN: Okay. So you believe the Total Resource Cost test, at least as you have understood it to be applied in other -- maybe in other states or other proceedings, the Total Resource Cost test would include incentives paid to customers in that denominator?

THE WITNESS: It would, but just to be clear, mathematically the benefit/cost ratio won't change if

you raise the incentives. Because if you raise the incentive by a dollar, the participant cost goes down by a dollar. So that denominator of cost, it doesn't actually change, because what you are really doing is you are just transferring a little bit more money from the general body of ratepayers to that participant or a little less money in the program. Is that clear?

COMMISSIONER McMURRIAN: Well, I think what is not clear to me is that until this point in the proceeding, I had it in my mind that only the Rate Impact Measure included incentives paid to customers. So I will be asking a question like this probably when we get to some of the rebuttal as well to see if -- to see if that is others' understanding also. But I am glad you clarified that for me.

THE WITNESS: Okay.

COMMISSIONER McMURRIAN: I think that's all, Mr. Chairman. No, for this witness, that's all.

CHAIRMAN CARTER: Okay. Before we -- do you have a lot of redirect?

MR. JACOBS: No, sir.

CHAIRMAN CARTER: Okay. Redirect. I want my exhibit back from him, though.

MR. JACOBS: We will make sure we get it.

REDIRECT EXAMINATION

BY MR. JACOBS:

Q. Mr. Mosenthal, I think in response to several questions earlier, you indicated that since you filed your testimony you had done a review of testimony and discovery in this docket, is that correct?

A. Yes.

Q. Do you stand by your earlier answer to the question of whether or not you would change anything, the answers to any questions in your testimony?

A. Yes.

Q. Subject to the changes --

A. Subject to the participant cost test issue that we talked about.

MR. JACOBS: Thank you. No further questions.

CHAIRMAN CARTER: Exhibits.

MR. JACOBS: Mr. Chairman, we move Exhibit 78.

CHAIRMAN CARTER: Are there any objections? Without objection, show it done.

(Exhibit Number 78 admitted into the record.)

CHAIRMAN CARTER: Okay. Everybody, please, ma'am, please, sir, govern yourselves accordingly with our instructions for tomorrow. We really do need to push on.

MR. BURNETT: Mr. Chair.

CHAIRMAN CARTER: Oh, Mr. Burnett, yes, sir.

MR. BURNETT: If I may, sir, to that regard, we wanted to announce that I have pulled all the IOUs to my right and left and the munis, and I believe we are able to stipulate Witness Wilson into the record, if he is willing to be dismissed. And we would also encourage our intervenors to work with us tonight to see if we can work out anything else to move it along. But at this point, just to let you know logistically, if they are amenable, we can stipulate his testimony into the record if he is released.

CHAIRMAN CARTER: Okay. Are there any objections to that?

MR. JACOBS: Mr. Chairman, we haven't agreed to that. Mr. Wilson is not here now, and I couldn't do that without his input.

CHAIRMAN CARTER: Well, I suggest you guys burn some midnight oil tonight on getting ready for that.

MR. JACOBS: I can assure you we will.

CHAIRMAN CARTER: Okay.

MR. BURNETT: Thank you, sir.

CHAIRMAN CARTER: All right. See you guys tomorrow at 9:30.

(Hearing adjourned at 5:30 p.m.)

STATE OF FLORIDA)

: CERTIFICATE OF REPORTER

COUNTY OF LEON)

I, JANE FAUROT, RPR, Chief, Hearing Reporter Services Section, FPSC Division of Commission Clerk, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 18th day of August, 2009.

Jane Faurot /GB

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