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BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of:

COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (FLORIDA POWER & LIGHT COMPANY).	DOCKET NO. 130199-EI
COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (DUKE ENERGY FLORIDA, INC.).	DOCKET NO. 130200-EI
COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (TAMPA ELECTRIC COMPANY).	DOCKET NO. 130201-EI
COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (GULF POWER COMPANY).	DOCKET NO. 130202-EI
COMMISSION REVIEW OF NUMERIC CONSERVATION GOALS (JEA).	DOCKET NO. 130203-EI

VOLUME 4

Pages 797 - 1060

PROCEEDINGS:	HEARING
COMMISSIONERS PARTICIPATING:	CHAIRMAN ART GRAHAM COMMISSIONER RONALD A. BRISÉ COMMISSIONER LISA POLAK EDGAR COMMISSIONER EDUARDO E. BALBIS COMMISSIONER JULIE I. BROWN
TIME:	Recommenced at 2:40 p.m. Recessed at 5:26 p.m.

LOCATION: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: MARY ALLEN NEEL, RPR, FPR

APPEARANCES: (As heretofore stated.)

I N D E X

WITNESSES

EXHIBITS

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46	JNF-1		905
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62	JF-2		965
63	JF-3		965
64	JF-4		965
65	JF-5		965
66	SACE-NAM-1		1059
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P R O C E E D I N G S

(Transcript follows in sequence from Volume 3.)

CHAIRMAN GRAHAM: Okay. I apologize for being a couple of minutes late. The vending machine wasn't working, and I couldn't get my Diet Coke out.

MR. GUEST: Mr. Chairman, if I may --

CHAIRMAN GRAHAM: Sure.

MR. GUEST: -- on the record before we start up here.

CHAIRMAN GRAHAM: Sure.

MR. GUEST: I was prohibited from placing some evidence in with the last witness. I would like to make an offer of proof to preserve it for the record. May I do that?

CHAIRMAN GRAHAM: One more time. I'm sorry.

MR. GUEST: I would like to make an offer of proof so the record is preserved. I need to preserve the record for appeal. In order to do so, I have to be able to show what I would have demonstrated.

CHAIRMAN GRAHAM: For which witness?

MR. GUEST: The last witness from --

CHAIRMAN GRAHAM: The witness from TECO?

MR. GUEST: Yes.

CHAIRMAN GRAHAM: And what did you want to put in the record that wasn't allowed?

MR. GUEST: Well, y'all had some questions about the applicability, how many folks would use these measures.

And we sought -- I said I would like to -- that was the first time that had come up, and the witness answered differently than the interrogatories were. I sought permission to clarify that one question, because y'all had brought it up for the first time here, and you entered a ruling that I couldn't do that. And so to preserve that record, I would like to put the documents in and explain them so the record is clear about what has been excluded.

CHAIRMAN GRAHAM: And who brought that subject up?

MR. GUEST: Let's see if I can remember who it was. One of y'all. I don't remember which one.

CHAIRMAN GRAHAM: One of the Commissioners?

MR. GUEST: Yes, one of the Commissioners.

CHAIRMAN GRAHAM: Mary Anne.

MR. GUEST: And if y'all are looking at the law issue, it's 90.104.

MS. HELTON: That would be helpful. Thank

you.

MR. BEASLEY: Mr. Chairman, if I may offer, while she's looking that up, I think everything -- all the discovery that Mr. Bryant is responsible for is already part of the record, because it's part of the composite exhibits. So anything that Mr. Guest wishes to refer to is already in the record.

CHAIRMAN GRAHAM: No, I think he's saying that one of the Commissioners brought up something that wasn't part of the record.

MS. HELTON: One thing that was not clear to me -- and I have to confess, due to the late hour of lunch, I may not have been focusing as much on the questions as I should have. The questions that Mr. Guest is taking issue with, was that within the scope of the direct prefiled examination of the witness, or was that outside the scope of the witness?

MR. GUEST: I don't think it was within the scope.

MS. HELTON: But it was the subject of discovery, and discovery that is in the record right now.

MR. GUEST: It's not in the record. That's my

point.

MS. HELTON: I thought Mr. Beasley just said it was.

MR. GUEST: Well, he's mistaken.

CHAIRMAN GRAHAM: No, what --

MS. HELTON: I mean, I think all these points -- I'm sorry, Mr. Chairman. I think all those points are important.

CHAIRMAN GRAHAM: Well, I think what happened, and I don't know which Commissioner, but one of the Commissioners asked a question that wasn't part of Mr. Beasley's record that he commented on -- not Mr. Beasley; Mr. Bryant's record. I don't know specifically what the question was, and I --

MR. GUEST: The question was -- what it came down to was how often these hot water heater blanket things are actually useful, which goes to how many households would --

CHAIRMAN GRAHAM: Actually, I don't think that was the question that was asked. I think that was something that he shared.

MR. GUEST: Right.

CHAIRMAN GRAHAM: That was a pet peeve of his. Maybe he didn't use those words, but that's pretty much what it was.

MS. HELTON: And I also don't remember Mr. Guest making any objection about that statement that the witness made.

MR. GUEST: Well, I'm not going to object to what they witness says. I just want, when it's raised for the first time this way, to have an opportunity to respond. But I think, really, it has been entered. All I'm trying to do is preserve my -- preserve it for the record. I'm not trying to reargue anything exactly here. I honor and respect the rulings. I'm just preserving the record.

MS. HELTON: Mr. Chairman, at this point in time, I think it would be appropriate to hear from Mr. Beasley if he had anything that he wanted to say. Or have you already said --

MR. BEASLEY: I thought Mr. Guest said he wanted to put something in the record from the discovery, was my take.

CHAIRMAN GRAHAM: No. He wanted -- because there was a comment made from the witness that wasn't in the record, he wanted to have that chance to cross-examine that part, so he wants to talk about -- you know, you're saying that the blankets on hot water heaters after '96 were inefficient.

MR. GUEST: Uh-huh.

CHAIRMAN GRAHAM: And that's what he wanted to challenge.

MR. GUEST: Right.

CHAIRMAN GRAHAM: And I said we're not going to do that now because it has already gone through. His argument is, that wasn't part of his testimony up front, so I didn't have the chance to cross-examine that, because it was offered after I went through my cross-examination.

MR. GUEST: Right.

CHAIRMAN GRAHAM: That's where we are.

MS. HELTON: Mr. Chairman, Section 90.104, which is in the Evidence Code, does say that when the ruling is one excluding evidence, the substance of the evidence was made known to the court by offer of proof or was apparent from the context within which the questions were raised, that that is, I think, an option that should be made available to Mr. Guest. So I think he should be able to make his offer of proof.

Did you want to just simply make the statement of what you thought the answer would be, or --

MR. GUEST: And the evidence supporting it, exactly, precisely. So if permitted, the question

I would ask the witness would be to direct his attention to the exhibit that I would like to put in evidence, or at least put in the record, which is TECO's response to Sierra Club's First Interrogatory 1-18, which is one of our infamous spreadsheets. And I would simply go to page 6.

CHAIRMAN GRAHAM: Do you have the exhibit number on that infamous spreadsheet?

MR. GUEST: It looks like it would be 190.

CHAIRMAN GRAHAM: 190.

MR. GUEST: For the record.

CHAIRMAN GRAHAM: I don't have a 190. We don't have a 190. Are you --

MR. GUEST: Well, it's a new one.

CHAIRMAN GRAHAM: Okay.

MR. GUEST: We're just using it for the offer so there will be a number on it.

CHAIRMAN GRAHAM: Are you handing out --

MR. GUEST: Well, we can. Would you like to see that?

CHAIRMAN GRAHAM: That's fine. Just make sure we're all on the same page.

MR. GUEST: Okay.

MR. MOYLE: Just so we're clear, it's not admitted. It's just an offer of proof, a proffer.

MR. GUEST: Yes, it's just an offer. I'm just preserving the record. I'm not trying to --

CHAIRMAN GRAHAM: That's all right.

MS. HELTON: It's a lawyer thing.

CHAIRMAN GRAHAM: I get it.

MR. GUEST: That's not a pejorative term.

CHAIRMAN GRAHAM: So, Mr. Beasley, what was the lesson learned here? Limit your comments to the question that was asked?

Okay. So we will call this Exhibit 190.

(Exhibit 190 was marked for identification.)

CHAIRMAN GRAHAM: Okay. So we're -- which page did you say in this exhibit?

MR. GUEST: Well, it's page 6, and it's the column -- well, let's see. I don't know if yours is highlighted. Is it?

CHAIRMAN GRAHAM: It says "water heater blanket."

MR. GUEST: That's it.

CHAIRMAN GRAHAM: It looks like it's about 12 or 15 down.

MR. GUEST: That's right. And then we go all the way over to the column which is the fourth from the left, which is appliable households, how many households does this apply to, and it says 86,222.

That's the only thing I wanted to establish.

CHAIRMAN GRAHAM: I don't see that 86,000 number.

MR. GUEST: Am I reading it wrong? I have trouble following these things.

No, that's wrong. You're right. It's 120,711.

CHAIRMAN GRAHAM: Okay. I guess the question I have -- I'm trying to understand. How does that specifically apply to things before or after 1996?

MR. GUEST: Because this is their current proposal. It says this is what -- this is what we think that's the applicable households for purposes of these goals.

CHAIRMAN GRAHAM: But how do you know if that household has got a hot water heater that was before or after '96?

MR. GUEST: Because it starts off with the total household number is 344,000, which is consistent with this issue about this is only for old ones. Basically, what it's showing is that roughly a third of them are really old. That's my only point.

CHAIRMAN GRAHAM: Okay. Is that it?

MR. GUEST: Yes. Yes, Mr. Chairman.

CHAIRMAN GRAHAM: So we're going to enter Exhibit 190 into the record unless TECO has got an objection.

All right. And we will call it TECO Response to Sierra Club's First Interrogatory 1 through 18.

(Exhibit 190 was admitted into the record.)

MS. HELTON: Mr. Chairman?

CHAIRMAN GRAHAM: Yes.

MS. HELTON: If I could interrupt the flow one more time, I'm not sure if everyone in the audience or sitting at a microphone is aware that our microphones are very sensitive, so if you mumble something under your breath, while we might not be able to hear it in the room, you can hear it on TV or wherever else you might be listening to it.

CHAIRMAN GRAHAM: Okay. So we are to Gulf's witness.

MR. GRIFFIN: Mr. Chairman, we could call John Floyd. He's already on the hot seat and has been there for a while.

Thereupon,

JOHN N. FLOYD

was called as a witness on behalf of Gulf Power Company and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. GRIFFIN:

Q. Good afternoon, Mr. Floyd. You were sworn yesterday; is that correct?

A. Yes.

Q. And would you please state your name, your employer, and your business address, please?

A. Yes. My name is John Floyd. I work for Gulf Power Company, and my business address is One Energy Place, Pensacola, Florida.

Q. And did you prepare and cause to be filed 37 pages of prefiled direct testimony in this proceeding?

A. Yes, I did.

Q. Do you have any changes or corrections to that testimony?

A. No.

Q. And if I were to ask you the same questions contained in that testimony again here today, would your answers be the same?

A. Yes.

MR. GRIFFIN: Mr. Chairman, we would ask that Mr. Floyd's prefiled direct testimony be inserted into the record as though read.

CHAIRMAN GRAHAM: We will insert Mr. Floyd's record into the testimony as though read.

GULF POWER COMPANY

Before the Florida Public Service Commission
Prepared Direct Testimony and Exhibit of
John N. Floyd
Docket No. 130202-EI
Date of Filing: April 2, 2014

Q. Please state your name, business address, employer and position.

A. My name is John N. Floyd and my business address is One Energy Place, Pensacola, Florida 32520. I am employed by Gulf Power Company (Gulf or the Company) as the Energy Sales and Efficiency Manager.

Q. Mr. Floyd, please describe your educational background and business experience.

A. I received a Bachelor Degree in Electrical Engineering from Auburn University in 1985. After serving four years in the U.S. Air Force, I began my career in the electric utility industry at Gulf Power in 1990 and have held various positions with the Company in Power Generation, Metering, Power Delivery and Marketing. In my present position, I am responsible for the development and implementation of Gulf's customer program offerings including the programs included in the Company's Demand-side Management (DSM) Plan.

Q. Have you previously testified before this Commission?

A. Yes.

Q. Mr. Floyd, what is the purpose of your testimony?

A. The purpose of my testimony is to propose seasonal peak demand and annual energy conservation goals for Gulf Power for the period 2015 – 2024 as required by the Florida Energy Efficiency and Conservation Act (FEECA).

Q. Please describe how your testimony is organized.

A. My testimony is organized as follows:

Section 1: Proposed Goals and Accomplishments

Section 2: Process to Develop Goals

Section 3: Statutory Adherence

Section 4: Sensitivities

Section 5: Renewable Pilots

Section 6: Conclusions

Q. Have you prepared an exhibit in support of your testimony?

A. Yes, I have. This exhibit was prepared under my direction and control, and the information contained therein is true and correct to the best of my knowledge.

Counsel: We ask that Mr. Floyd's exhibit consisting of 18 schedules be marked for identification as:

Exhibit No. ____ (JNF-1)

Section 1: Proposed Goals and Accomplishments

Q. What residential and commercial/industrial goals are appropriate and reasonably achievable for Gulf Power Company for seasonal peak demand and energy conservation for the period 2015 through 2024?

A. The Company's proposed seasonal peak demand and annual energy conservation goals for the period 2015 through 2024 are contained in Schedule 1 of my exhibit (JNF-1). In total, Gulf is proposing a summer peak demand goal of 68 MW, winter peak demand goal of 37 MW, and cumulative annual energy conservation goal of 84 GWh. These goals are based upon costs derived from Gulf's generation, transmission, and distribution planning processes and represent the total cost-effective winter and summer peak MW demand reductions and the annual GWh savings at the generator which are reasonably achievable through implementation of demand-side programs in Gulf Power's service area for the residential and commercial/industrial customer classes. The basis for the goals is the MW and GWh associated with projected adoption of measures that passed both the Rate Impact Measure (RIM) and the Participant's Test (PT).

Q. How do Gulf's recommended goals compare to current goals?

A. The cumulative annual energy conservation goals being proposed for the period 2015 through 2024 are significantly lower than the goals currently approved in Commission Order No. PSC-09-0855-FOF-EG. A comparison of the goals can be found in Schedule 2 of my exhibit.

Q. Please explain why there is such a significant decrease in the recommended goal level compared to Gulf's current goal.

A. There are several factors that contribute to these proposed goals being significantly lower than current goals. First, these proposed goals are based on Gulf's 2013 generation planning process in which the next planned generating unit addition is in 2023 compared to a 2014 projected unit addition that was used for the 2009 goal setting. These proposed goals are also based on the achievable potential of measures that pass the RIM cost-effectiveness criterion which ensures no cross-subsidy occurs between participating and non-participating customers. The currently approved goals are based on the Total Resource Cost (TRC) cost-effectiveness criterion which does not provide any protections against cross-subsidies or upward rate pressure. Finally, almost half of the current goals are not based on any cost-effectiveness criteria, but instead are based on the technical potential for certain residential measures that were initially excluded from Gulf's Technical Potential Study due to the potential for high free-ridership.

Q. How is it that nearly one-half of Gulf's current goals derive from measures that were not based on any cost-effectiveness criteria?

A. In Order No. PSC-09-0855-FOF-EG, the Commission assigned Gulf approximately 200 GWh of energy goals beyond what was evaluated as cost-effective under the TRC test. This additional energy goal was based on the technical potential of certain measures that had been previously screened out due to the potential for high free-ridership. Gulf subsequently

petitioned for reconsideration of this decision on the ground that this additional energy goal did not represent what was reasonably achievable, but instead was only technically feasible without regard to whether it was cost-effective to achieve. The Commission ultimately denied Gulf's motion for reconsideration and affirmed the rulings embodied in the 2009 goals order. See Order No. PSC-10-0198-FOF-EG.

Q. Aside from seeking reconsideration of the 2009 goals order, did Gulf engage in any other efforts to mitigate the rate impacts of the 2009 goals to its customers?

A. Yes. In Docket No. 100154-EG Gulf sought approval of a DSM Plan which was designed to achieve the goals established in the 2009 goals order. Included within Gulf's DSM Plan filing was a "Rate Impact Mitigation" proposal wherein Gulf identified a small group of programs and measures that could be deferred. Deferral of these programs and measures would have reduced the long term rate impact of the Plan by some 50% while still achieving 350 GWh over ten years –almost seven times larger than Gulf's previous goal.

Q. Did the Commission approve Gulf's Rate Impact Mitigation proposal?

A. No. While the Commission acknowledged that Gulf's approach in developing its Rate Impact Mitigation proposal was appropriate, the Commission ultimately declined to adopt the proposal on the grounds that the proposal would not enable Gulf to meet its newly established goals. See Order No. PSC-11-0114-PAA-EG.

Q. Did the Commission have occasion to address rate impacts associated with other FEECA utilities' DSM Plans?

A. It did. Shortly after approving Gulf's DSM Plan, the Commission entered proposed agency action orders modifying and approving demand side management plans for Florida Power & Light Company and Progress Energy Florida, Inc. See Order Nos. PSC-11-0346-PAA-EG and PSC-11-0347-PAA-EG. In both cases the Commission determined that the plans submitted by the utilities would effect undue rate impacts on customers. Consequently, the Commission modified the proposed DSM plans to only include programs the Commission had previously approved for the two utilities as a result of the 2004 goal setting proceeding, finding that those programs were cost-effective and would accomplish the intent of FEECA. Those programs were determined to be cost-effective using the PT and the RIM test.

Q. Please describe Gulf's progress toward achieving the goals set forth in Order No. PSC-09-0855-FOF-EG for the period 2010-2019.

A. Schedule 3 of my exhibit provides a summary of the Company's progress toward goal achievement. Notwithstanding the concerns expressed above, Gulf has endeavored to achieve the goals set in 2009. On a cumulative basis, Gulf is ahead of the goals set in Order No. PSC-09-0855-FOF-EG and has achieved the annual goals since 2012.

Q. What impact has achievement of these goals had on the cost to Gulf's customers?

A. The cost of energy efficiency programs associated with these higher goals has more than doubled since 2010. These additional costs are borne by all of Gulf's customers each year through increased Energy Conservation Cost Recovery (ECCR) charges. Although there has been substantial energy savings associated with these additional costs, these program expenses are creating cross-subsidies between non-participating and participating customers because almost all of the programs required to achieve these goals fail the RIM test. This results in upward rate pressure for all customers over time.

Q. Please elaborate on what you mean by cross-subsidies and their effect on rate pressure.

A. Energy efficiency programs offered through the Company's approved DSM Plan are a unique aspect of the Company's business in that the costs to offer these programs, including incentives paid to customers, are borne by all of the Company's customers, not just the customers who are voluntarily participating in the program. The Company depends on the energy and demand savings benefits, in the form of avoided cost savings, from customers' voluntary participation in the efficiency programs to offset the cost impacts of these programs. When these energy and demand saving benefits are greater than the cost impacts borne by all customers, then a non-participating customer is not subsidizing any costs and is, in fact, benefited by lower utility cost which causes downward rate pressure

over time. If the demand and energy savings of participating customers do not completely offset the cost impacts, including incentives paid to customers, the deficiency is re-distributed to all customers in the form of a cross-subsidy resulting in upward rate pressure over time. This is the essence of the RIM cost-effectiveness test and why it should be considered in setting energy efficiency and conservation goals.

Q. What actions can the Commission take in this proceeding to ensure that Gulf's goals for the period 2015-2024 do not impose such high cost on Gulf's customers in the future?

A. The Commission can and should set goals based on the amount of cost-effective achievable potential utilizing the RIM test. This will ensure the benefits of energy and demand reductions are greater than the cost impacts borne by both participating and non-participating customers such that both groups of customers are better off as a result.

Q. Please describe how Gulf has historically endeavored to meet the intent of the FEECA statute.

A. Gulf has a long history of leadership and innovation in the area of energy efficiency. Beginning in 1975, before the FEECA statute existed, Gulf introduced customers to the value of energy efficient construction with the GoodCents Home program. This program, now called EarthCents home, has long been the standard for energy efficient construction in Northwest Florida. An example of Gulf's innovation is the Company's Energy*Select* program. Originally offered in 1995, Gulf introduced customers to the

concept of home energy management combined with variable pricing, including critical peak pricing (CPP) with its Energy*Select* program. When first introduced, Energy*Select* was not only a new program for Gulf, but also was the first CPP program offered in the nation.

In addition to equipment-based programs, Gulf has placed great emphasis over the years on customer education through our audit programs and outreach activities. As Energy Experts, Gulf's employees provide valuable advice and recommendations to customers regarding energy use and equipment decisions. Gulf's educational efforts extend into classrooms and community settings, including low-income communities, where energy efficiency information helps shape customers of the future and aids customers who may not have access to sound and reliable energy advice.

Section 2: Process to Develop Goals

Q. Please describe the process used to develop Gulf's recommended seasonal peak demand and annual energy conservation goals.

A. Gulf developed proposed goals based on the progressive process of 1) updating the full technical potential for energy efficiency savings; 2) determining the subset of that technical potential that is cost-effective under both the RIM and TRC cost-effectiveness tests as compared to the cost of Gulf's next planned generating unit addition from the Company's 2013 Ten Year Site Plan; and 3) determining the reasonably achievable

market potential of both the RIM-based and the TRC-based evaluations considering the circumstances of our service area, existing programmatic activity, and historical experience.

Q. Please describe what is meant by technical potential for energy and demand savings and how it is used in the goal setting process.

A. Technical potential represents the amount of energy and demand savings that is technically feasible without regard to cost, customer acceptance, cost-effectiveness or other real-world constraints. Technical potential begins with a comprehensive list of energy efficiency measures that are technically feasible to implement. The energy and demand savings of each measure is multiplied by the applicable customer base to calculate what is technically possible without any regard to whether it is in the best interest of the customer or if a customer would even voluntarily adopt the measure. In this sense, technical potential is somewhat of a theoretical construct that just provides a starting point for the balance of the process. It certainly does not represent cost-effective potential that could be reasonably achieved.

Q. How did Gulf determine the appropriate technical potential for this docket?

A. The Company and the other FEECA utilities worked together, with input from the Southern Alliance for Clean Energy (SACE), to consistently update the technical potential results from a study conducted by Itron that was used in the 2009 goals proceeding. This study included a comprehensive list of energy efficiency measures that are commercially

available for implementation. The process used for updating Gulf's technical potential consisted of three steps: 1) adjust, as necessary, existing measures from the 2009 study, 2) add new measures and 3) adjust for customer growth and DSM achievements. This process is summarized in a diagram found in Schedule 4 of my exhibit.

Q. Please describe each step in more detail.

A. The first step involved identifying measures made obsolete by new building codes and standards. These "baseline" measures represent the starting point from which to calculate the incremental energy and demand savings associated with higher efficiency measures. Each baseline measure was reviewed to determine if it was still relevant based on updates to codes and standards. If it was determined to be obsolete, it was removed and a new baseline was set based on current codes or standards. At the end of this step, 5 measures were removed due to their obsolescence.

The next step involved identifying new commercially-viable measures that were not included in the previous study. The energy and demand savings impacts of these measures, along with the costs of the measures, were determined using a combination of experience from the utilities and third party information. This information was added to the existing technical potential resulting in 7 residential, 15 commercial and 5 industrial measures being added to the technical potential. After the first two steps, the comprehensive measure list included 285 total unique measures. Of

this total, 62 were residential energy efficiency measures, 91 commercial efficiency measures and 122 industrial efficiency measures. Demand Response and demand-side renewables comprised 10 measures included in the technical potential measure list. A comprehensive list of measures including those that were removed and added can be found in Schedule 5 of my exhibit.

After adjustments were made for obsolete and new measures, the technical potential was adjusted for growth in Gulf's customer base as well as DSM achievements since the last technical potential assessment was completed.

Q. What were the results of Gulf's updated technical potential?

A. After the updates were made, the energy efficiency demand and energy values represented by Gulf's technical potential are 720 MW of summer demand, 448 MW of winter demand and 3,253 GWh of energy. The demand response values include 285 MW of summer demand and 247 MW of winter demand. Finally, the solar photovoltaic technical potential resulted in 1,481 MW of summer demand, 240 MW of winter demand and 4,017 GWh of energy. All of these results are summarized in Schedule 6 of my exhibit.

Q. How do these technical potential results compare to Gulf's results in the last goals proceeding?

A. The updated technical potential results reflect slightly lower overall

potential based primarily on adjustments due to codes and standard changes. A summary comparing the technical potential from the last proceeding to Gulf's updated technical potential can be found in Schedule 7 of my exhibit.

Q. What was the next step in developing Gulf's proposed DSM goals?

A. The next step in the process was to determine the amount of technical potential that is cost-effective. This amount is called economic potential.

Q. Please describe what is meant by economic potential.

A. Economic potential is the amount of technical potential determined to be cost-effective by applying Commission approved cost-effectiveness tests to the measures in the technical potential. These are the RIM, TRC, and PT cost-effectiveness tests. This Commission has requested two sets of economic potential, one based on a set of measures that pass the RIM and the PT test and another based on a set of measures that pass the TRC and the PT test. These two evaluations are not mutually exclusive. In practice, most of the measures included in the RIM & PT evaluation also pass the TRC test.

Q. Please describe the three cost-effectiveness tests in more detail.

A. The PT, or Participant's Test, as the name implies, measures cost-effectiveness from the perspective of the participating customer. This test considers bill savings and incentives as benefits and out-of-pocket

expenses as costs. It is important that any measure included in any final DSM Plan be cost-effective to the participant.

The RIM, or Rate Impact Measure, test evaluates the cost-effectiveness of a measure from a non-participant's perspective. In this way, it measures whether cross-subsidy occurs between non-participating and participating customers that ultimately results in upward rate pressure. The RIM test considers avoided capacity and fuel costs as a benefit compared to costs of program implementation including customer incentives and utility revenue decreases. When benefits exceed costs in the RIM test, implementation of the efficiency measure or program will not result in cross-subsidy and will cause downward pressure on utility rates. This is why the test is sometimes referred to as the "no-losers test." Use of the RIM test in goal setting is essential to ensure that cross-subsidy and upward rate pressure do not occur.

The TRC, or Total Resource Cost, test looks at cost-effectiveness of an efficiency measure from the joint perspective of the utility and customer base as a whole. In this way, TRC only measures whether total costs are increased or decreased. The TRC test considers the same benefits as the RIM test while only including program implementation (not including customer incentives) and total equipment expenses as costs. Importantly, the TRC test does not provide any measure of rate pressure or cross-subsidy. For this reason, the TRC test should never be used without simultaneous consideration of the RIM test results to ensure non-

participating customers are not subsidizing customers who are voluntarily participating in an efficiency program.

Q. Please describe the process Gulf used to determine the economic potential.

A. Gulf evaluated the cost-effectiveness of all measures in the updated technical potential utilizing the Company's most recent generation, transmission, and distribution planning assumptions. These "base case" assumptions include projections of fuel costs and avoided generation costs on which the Company's 2013 Ten Year Site Plan was produced. Each measure's demand and energy savings characteristics and costs were used along with the avoided cost benefits to calculate the cost-effectiveness of the measure according to the RIM, TRC, and PT formulas. If the result of the cost-effectiveness test was positive, or greater than 1.0, then that measure was deemed to be cost-effective at this phase of the process and the measure's technical potential for energy and demand savings was included in the economic potential. Certain measures were determined to be cost-effective under one or more of the cost-effectiveness tests, but not all. A summary of the Economic Potential for the RIM & PT criteria and TRC & PT criteria is provided in Schedule 8 of my Exhibit. A complete list of measures for the Economic Potential in both evaluations is included in Schedule 9 of my exhibit.

Q. What avoided generating unit did Gulf use in the base case analysis?

A. Consistent with Gulf's April 2013 Ten Year Site Plan filing, a 750 MW combined cycle unit with an in-service date of 2023 was used for the cost-effectiveness evaluations.

Q. Please describe the other assumptions used in the base case analysis.

A. The base case analysis for evaluating the cost-effectiveness of measures in this study includes projections of fuel costs, load and energy sales, and generation costs over the planning period. The fuel cost projections used for planning purposes are developed using a collaborative process between Southern Company's Planning Coordination Team and the modeling vendor, CRA International. The load and energy forecast is developed based on a number of inputs including projections of economic growth, customer growth, and appliance codes. Generation costs are based on current projections of capital, operating, and environmental compliance expenses associated with the next planned generation unit needed to satisfy the load requirements. These cost inputs are used to develop the avoided cost values used in evaluation of the measures included in the Technical Potential Study.

Q. What was the final step in developing Gulf's proposed DSM goals?

A. The final step in the process was to determine the amount of the economic potential that is reasonably achievable in the marketplace over the ten year planning horizon. This amount is called achievable potential and serves as the proposed goals.

Q. How did Gulf determine the achievable potential for each set of measures included in the economic potential?

A. For each measure that was deemed cost-effective in either the RIM & PT or TRC & PT portfolios, customer adoption projections were developed based on the level of economic benefit provided to the customer. In order to maximize the projected adoption of these cost-effective measures, incentives were applied to increase the economic benefit to the customer. For the RIM & PT portfolio, the incentive was set at the amount to create a two-year payback for the customer or the maximum amount that would keep the measure RIM passing. For the TRC & PT portfolio, the incentive was set at an amount to create a two-year payback to the customer. Gulf considered previous adoption projections from the 2009 Achievable Potential Study and historical program experience to aid in projecting customer adoption at these incentive levels.

Q. What is free-ridership and how did Gulf take into account the effects of free-ridership in its analysis?

A. In this context, free-ridership is the adoption of an energy efficiency measure that would have occurred absent any utility program. As required by Commission rule, the goals set for energy and demand reductions must account for the effects of free-ridership. In the base case, measures that had a customer payback of less than two years without any utility incentive were considered to already present the customer with a reasonable economic proposition and therefore did not require additional incentives through a utility program. The selection of a two year payback criterion is

consistent with assumptions used in the Energy Information Administration's Load and Demand Side Management (LDSM) submodule of the Electricity Market Module of the National Energy Modeling System. The LDSM model documentation characterizes the use of a two year payback level as being "based on general utility practice."

If included as part of a utility's goal, the expense associated with promotion of these measures would be an unnecessary cost burden on all utility customers since these measures would likely be adopted even without a utility program.

Q. What is the achievable potential during the period 2015-2024 for both the RIM & PT and TRC & PT evaluations?

A. The achievable potential is 84 GWh for the RIM & PT evaluation. For the TRC & PT evaluation, the achievable potential is 268 GWh. A summary of the achievable potential results for both evaluations can be found in Schedule 10 of my exhibit. A full list of measures included in the achievable potential for each evaluation is included in Schedule 11 of my Exhibit. The achievable potential for demand and energy reductions is based on projecting customer adoption of measures in the updated technical potential study found to be cost-effective by each of the RIM & PT and TRC & PT evaluations; that is, customer adoption of measures determined to have economic potential.

Q. How were renewable technologies identified and evaluated?

A. Renewable technologies were handled in two ways for the technical and achievable potential studies. First, solar thermal water heating and photovoltaic (PV) pool pumps were included in the energy efficiency study since they both directly replace specific end-use loads and can be modeled like other efficiency measures. Neither of these measures is cost-effective under the TRC or RIM test and, therefore, no achievable potential for these measures is included in Gulf's proposed goals.

The technical potential for rooftop PV initially assessed by Itron in 2009 was adjusted to reflect known new installations and customer growth since that time. Cost-effectiveness tests were applied to rooftop PV based on the actual system installed costs participating customers have experienced during the course of the renewable pilot programs. Rooftop PV does not pass either of the Commission standards for cost-effectiveness and, therefore, no achievable potential for this measure is included in Gulf's proposed goals.

Q. How was demand response considered in the development of Gulf's proposed goals?

A. Like the process for PV, the technical potential for demand response was based on an update of Itron's projection in 2009. For the balance of the process, however, Gulf utilized actual program experience with the company's Energy*Select* program to ultimately project the achievable potential. This program, unlike traditional demand response programs,

also provides energy savings which are reflected in the Company's proposed goals.

Q. Which evaluation of achievable potential should be used to set Gulf's energy and demand reduction goals for the period 2015-2024?

A. The evaluation of achievable potential based on measures that are cost-effective under both the RIM and PT tests should be used to set Gulf's energy and demand reduction goals. This combination of tests ensures first that a participating customer will benefit from adoption of the efficiency measure and that benefits of efficiency savings outweigh the costs in a way that causes downward pressure on electric rates. This evaluation can be thought of as a subset of the TRC evaluation that not only ensures total costs are reduced, but also ensures that participating customers are not subsidized by non-participants. These two principles are critical in an energy efficiency policy that also recognizes the importance of electricity rates for the economic development of the utility area.

Q. Why is consideration of economic development appropriate in energy efficiency goal setting?

A. Economic development is an important aspect of the utility business as increased sales provide contributions towards the fixed costs of the utility system. This, in turn, benefits all customers. This Commission has been a strong proponent of utility-sponsored economic development initiatives for these very reasons and has approved such initiatives in a variety of

regulatory settings. In fact, the Commission recently approved three new economic development rate riders in connection with the settlement of Gulf's latest base rate case. See Order No.PSC-13-0670-S-EI. The importance of considering economic development in establishing energy efficiency goals is highlighted by the Commission's own rules.

Rule 25-17.001(7) clearly states that implementation of FEECA should not restrict growth necessary to support economic development and, instead, should enhance economic growth through lowering energy costs from what they would otherwise be absent cost-effective energy efficiency goals.

The primary means of achieving this objective through the goal setting process is by use of the RIM test in setting energy and demand reduction goals. The RIM test ensures that all customers benefit through lower electricity rates over time. This is the only cost-effectiveness test that can achieve this objective.

Q. What is the annual bill impact for an average residential customer using 1,200 kWh per month?

A. The projected annual bill impacts for each of the achievable potential evaluations are provided in Schedule 12 of my exhibit. These bill impacts reflect projected ECCR expenses associated with implementation of each evaluated achievable potential of energy and demand savings. In 2015, the company's proposed RIM portfolio is projected to impact a residential

customer's annual bill by $8.71, a significant decrease from the bill impact of the currently approved goals. This increases to $12.60 in 2024 assuming monthly usage of 1,200 kWh. Comparatively, the TRC portfolio is projected to impact a residential customer's annual bill by $23.34 in 2015, increasing to $66.82 by 2024, again assuming monthly usage of 1,200 kWh. These projected expenses are modeled in a similar way as the achievable potential estimates themselves and are not based on a set of proposed DSM programs designed to meet the demand and energy values determined by the achievable potential. More specifically, the cost estimates reflected in the bill impacts are based on multiplying the projected adoption by the maximum incentive determined for each cost-effective measure and are not intended to represent the actual costs associated with programs that will ultimately be developed to achieve the goals.

Section 3: Statutory Adherence

Q. Has Gulf Power provided an adequate assessment of the full technical potential of all available demand-side conservation and efficiency measures, including demand-side renewable energy systems?

A. Yes. Through a mutually agreed-upon process for updating the Itron Technical Potential Study, an adequate assessment of the full technical potential of all available demand-side conservation and energy efficiency measures, including demand-side renewables has been completed. This

assessment included the evaluation of 285 individual end-use energy efficiency, demand response and solar photovoltaic measures.

Q. Section 366.82(3), Florida Statutes, requires the Commission to evaluate the full technical potential of supply-side conservation and efficiency measures. Does Gulf Power's Technical Potential Study evaluate supply-side conservation and efficiency measures and, if not, why?

A. Gulf Power has not conducted an assessment of supply-side conservation and efficiency opportunities in the same manner as the demand-side opportunities have been evaluated. Gulf does recognize that these opportunities may exist and, in fact, considers energy efficiency in selecting supply-side projects in all generation, transmission, and distribution functions consistent with the requirements of Rule 25-17.001(5). However, the Commission has not developed guidelines for such an evaluation that would provide a methodical approach to identifying, quantifying, and proposing goals for supply-side conservation and efficiency measures. For this reason, Gulf Power does not believe that consideration of supply-side conservation and efficiency measures is appropriate in this proceeding.

Q. Has Gulf Power provided an adequate assessment of the achievable potential of all available demand-side conservation and efficiency measures, including demand-side renewable energy systems?

A. Yes. Beginning with the updated technical potential results, Gulf performed cost-effectiveness screening in accordance with Commission

rules and determined energy efficiency measures that are cost-effective for goal setting purposes. Gulf projected the reasonably achievable potential for energy and demand savings of these cost-effective measures.

All demand-side renewable energy systems were evaluated using the same cost-effectiveness standards as other energy efficiency measures. No renewable measures are cost-effective under these standards and, therefore, none are reflected in the achievable potential results. In past FEECA proceedings, the Commission determined that it was appropriate to set goals equal to zero in cases where no DSM measures were found to be cost-effective. See Order Nos. PSC-00-0588-FOF-EG; PSC-00-0587-FOF-EG; PSC-04-0768-PAA-EG; PSC-04-0767-PAA-EG. Given that no renewable measures passed the Commission's approved cost-effectiveness criteria, setting renewable goals at a level above zero in this proceeding would not be appropriate. A summary of the achievable potential results can be found in Schedule 10 of my exhibit.

Q. What cost-effectiveness test or tests should the Commission use to set DSM goals for Gulf Power?

A. The Commission should use the combination RIM and PT cost-effectiveness tests to set goals for Gulf Power. This combination of tests provides an appropriate balance between participating and non-participating customer benefits and ensures downward pressure on overall

electric rates while still supporting significant conservation activities over the period 2015 through 2024.

Using the combination of RIM and PT cost-effectiveness tests to establish goals for Gulf Power is consistent with the requirements of section 366.82(3), Florida Statutes, to consider impacts to participating customers as well as non-participating customers, together comprising the general body of customers.

Q. Do Gulf Power's proposed DSM goals adequately reflect the costs and benefits to customers participating in the measure?

A. Yes. The measures included in development of the goals reflect the costs and benefits to the participating customers. This is done by performing the participant cost test and ensuring that all measures contemplated for inclusion in the goals pass this test.

Q. Do Gulf Power's proposed DSM goals adequately reflect the costs and benefits to the general body of ratepayers as a whole, including utility incentives and participant contributions?

A. Yes. By passing the RIM test, Gulf's proposed goals reflect costs and benefits that minimize overall rate impacts for the general body of customers, whether or not they participate in one of the resulting conservation programs. In addition, by only including measures that also pass PT, these proposed goals adequately consider participant contributions as a component of overall customer impact.

Q. Do Gulf Power's proposed DSM goals adequately reflect the costs imposed by state and federal regulations on the emission of greenhouse gases?

A. Yes. Gulf is not incurring costs associated with existing state or federal regulations on the emissions of greenhouse gases and, therefore, Gulf has appropriately not included assumptions of costs of greenhouse gas emissions in the development of proposed goals. Gulf's DSM evaluations are consistent with assumptions used in determining the next generating unit identified in the Company's 2013 Ten Year Site Plan.

Q. What is Gulf Power's position relative to the Commission establishing incentives to promote both customer-owned and utility-owned energy efficiency and demand–side renewable energy systems?

A. Prior to 2009, the Commission's preference for relying on the combination of RIM and PT in the evaluation and approval of utility conservation programs provided the necessary structure to ensure that the interests of all stakeholders were balanced. In practice, these tests provided incentives to customers through the payment of rebates, to the general body of customers by preventing cross-subsidization between DSM program participants and non-participants, and to the utility by ensuring that incorporation of DSM in the resource planning process results in net benefits that put downward pressure on rates. Therefore, reliance on the RIM test in goal-setting obviates the need for utility incentives.

Section 4: Sensitivities

Q. Has Gulf completed any sensitivities to the evaluations performed in this proceeding?

A. Yes. Gulf has performed additional cost-effectiveness screening on the energy efficiency measures included in the technical potential for alternative fuel cost projections and free-ridership periods. The purpose of these additional evaluations was to determine how sensitive the economic potential is to these factors. The first sensitivity was performed for two additional fuel cost scenarios, “low fuel” and “high fuel.” Since fuel cost projections are an input in the cost-effectiveness evaluations, different fuel cost assumptions can increase or decrease the avoided cost benefits of each measure’s savings, and, consequently, the cost-effectiveness results. Each of these fuel cost projections represent a planning scenario utilized by Gulf Power in the resource planning process. These high and low fuel cost projections have the most impact on the RIM evaluations with a range of -22% to +14% changes in the economic potential for energy savings. The TRC evaluation is much less sensitive with a range of -2% to +4% change in economic potential compared to the base case analysis. A summary of these results can be found in Schedule 13 of my exhibit.

The second sensitivity was for shorter and longer free-ridership periods. For this evaluation, Gulf calculated the economic potential utilizing a one-year (shorter) and three-year (longer) payback period to determine how sensitive the economic potential is to these free-ridership periods. This

evaluation was completed by removing measures from the economic potential for which customer payback was less than one or three years without any utility-provided incentive. The shorter and longer free-rider period evaluations have the most impact on the TRC evaluation with a range of -25% to +33% change in the economic potential. The RIM evaluation is less sensitive with a range of -22% to +16% change in the economic potential compared to the base case. A summary of these results can be found in Schedule 14 of my exhibit.

Section 5: Renewable Pilots

Q. Please describe Gulf's current solar pilot programs.

A. Gulf's DSM Plan currently includes four solar pilot programs. These programs include rooftop PV systems for residential and commercial customers, PV systems for schools, solar thermal water heating (STWH) systems for residential customers, and STWH systems for low-income customers.

The Company's PV pilot program provides residential and commercial customers an incentive for installation of a solar energy system on their home or business. Customers installing qualifying systems receive $2/watt with a maximum per-customer incentive of $10,000.

Gulf's Solar for Schools pilot program provides capital funding to supplement deployment of PV systems up to 10 kW in qualifying public education facilities served by Gulf Power. This program offers the added benefit of providing resources to enable the data collected from the installed systems to be used in the schools' energy curriculum.

Gulf's STWH pilot program provides an incentive to residential customers to install a STWH system. Customers installing qualifying systems receive up to a $1,000 incentive.

The STWH for Low-Income pilot program facilitates the installation of STWH systems in qualifying low-income housing. Through the program the STWH systems are provided at no additional expense to the customers. This program offers up to 15 system installations per year.

Q. How have these pilot programs performed since their approval in early 2011?

A. Annual participation for these programs can be found in Schedule 15 of my exhibit. Participation in the PV pilot program has been fully subscribed each year. Participation in the STWH rebate and low-income STWH pilot programs has fallen well short of projected participation in each of the program years. Finally, the Solar for Schools pilot program has performed as projected in 2012 and 2013.

Q. Please describe the Company's PV pilot program performance in more detail.

A. Reservations for incentives under this pilot program are made available annually prior to the beginning of the program year. Each year the program has been fully subscribed shortly after the new program year funding becomes available. If any reservations are cancelled, those funds are once again made available for additional customer reservations. Through 2013, 132 PV systems have been installed in Gulf's service area under this program. Through March 2014, reservations for an additional 51 PV systems have been received. The installed cost of PV systems installed under this program has decreased consistent with the national trend of declining solar PV costs. Based on the information collected in the solar pilot programs, a more stable and viable solar contractor base has developed in Gulf Power's service area. As the pilot programs began, there were several contractors installing systems on a one-time basis. However, in recent years, a base of contractors installing multiple installations has been established. These contractors are actively competing for market share and providing customers more competitive options for system equipment and design, installed costs, and other services to meet customers' needs and expectations.

Q. Please describe the Company's STWH rebate and Low-Income STWH program performance in more detail.

A. Like the PV program, reservations for rebates under the STWH program are made available annually prior to the beginning of the program year. In

no year has the number of reservations for installations of STWH systems approached the projections. Gulf developed the projections for likely installations under this program based on results of a 2008 STWH pilot program with the same rebate level. Unlike the improvements in panel efficiencies for PV systems, STWH technology has seen virtually no change or improvement in the last six years. Gulf has not recognized any increase in the STWH contractor base over the course of the pilot program. Additionally, the costs for STWH systems installed under this program actually increased between 2011 and 2013 program years. Customers are seemingly unwilling to make such a significant investment in a system for water heating when other alternatives, such as heat pump water heating, are much more cost-effective.

Even in the STWH for low-income program where, working through low-income organizations, the systems are installed for free, it has been difficult to find customers willing to accept the risk and long-term operational costs associated with the STWH systems. In 2011, 15 systems were installed working with two low-income housing agencies. In 2012, 14 systems were installed with two agencies, and in 2013 only 1 system was installed. Additional planned installations for 2013 were cancelled by the low-income agency due to lack of interest. Currently, 14 installations are planned for 2014. Low-income housing providers have been reluctant and in some cases unwilling to install the solar thermal water heating systems on low-income housing recognizing their customer

base will not have the ability to pay for up keep and maintenance costs of the installed systems.

Q. Please describe the Company's Solar for Schools program performance in more detail.

A. The schools program is designed to provide a PV system up to 10KW for one public education institution each year. The program was initially designed to supplement the E-Shelter program being managed by the Florida Solar Energy Center (FSEC). Due to the launch of the E-Shelter program in 2011, no schools were identified for Gulf's program in 2011. In 2012 and 2013, one PV system was installed each year under the program. For 2014, Gulf is currently working on a PV installation with a school that had initially been selected under the E-Shelter program, but was dropped due to installation difficulty. Identification of schools for the program has been more difficult than expected. Schools are often reluctant to install the systems on roofs due to wind loading and maintenance concerns. Consequently, all systems installed to date have been ground mount systems which are more expensive and more difficult to site due to land availability, proximity to load centers, and shading considerations.

Q. Has Gulf collected any additional information about customers who have participated in these pilot programs?

A. Yes. Gulf has conducted customer surveys during the course of the pilot programs. For the PV and STWH programs, most of the responding

customers were satisfied with the program enrollment and rebate process as well as contractor performance. Additionally, 76% of the customers participating in the solar pilot programs have annual incomes above the Northwest Florida median of $47,800 and 63% have home values greater than the Northwest Florida median of $170,000.

Q. What expenses has Gulf incurred as a result of these programs?

A. Expenses for these programs can be found in Schedule 16 of my exhibit. Expenses have tracked with participation. Due to lower participation than anticipated in the STWH programs, Gulf's expenditures have been below the total spending cap established by the Commission in each year.

Q. For customers who have participated in the pilot programs, how have installed equipment costs for both PV and STWH systems trended since these programs began?

A. Equipment cost information collected during the pilot is provided in Schedule 17 of my exhibit. The cost of systems installed under the PV pilot program has decreased from an average of $5.54 per watt in 2011 to $3.42 per watt for systems being installed in 2014. This decrease reflects the national trend of declining solar PV costs.

Installation costs for STWH systems actually increased from the beginning of the pilot program through 2013. Costs for systems projected to be installed in 2014 indicate a slight decrease to near 2011 levels. Gulf

cannot determine whether this increase is a result of intentional markups because of the incentive or inflationary cost pressures.

Q. Based on the results of the pilot, have the cost-effectiveness results of these programs improved?

A. For roof-top PV, the cost-effectiveness from the participant's perspective has improved. This is in part due to panel cost decreases, the rebate provided under the pilot program, and the increasing competitiveness of area solar installers. Under both the RIM and TRC tests, however, PV remains non-cost effective. For the RIM test, the peak demand avoided cost savings does not outweigh the revenue impact thus failing this standard even with no incentive. For the TRC test, these same avoided cost savings do not outweigh the total cost of these systems.

For STWH, the cost-effectiveness results have not improved materially over the course of the pilot program. The cost-effectiveness results of these technologies are shown in Schedule 18 of my exhibit.

Q. What would systems have to cost for them to be cost-effective?

A. The cost of installed PV would have to be below $2 per watt to be cost-effective under the TRC test at Gulf's current avoided cost. Since the RIM test does not consider equipment cost, there is no cost point at which PV would be cost-effective at Gulf's current avoided cost.

For STWH, the installed cost of an average system would have to be below $1,925 to be cost-effective under TRC. With actual costs over $5,000, costs would have to decline precipitously for these systems to become cost-effective.

Q. Should the Company's existing solar pilot programs be extended and, if so, should any modifications be made to them?

A. Based on the results of the pilot, Gulf recommends not continuing the pilot programs past 2014. Neither the PV nor the STWH technologies are cost-effective under the RIM or TRC test and therefore cause a cross-subsidy to occur and ultimately cost Gulf's general body of customers more than the benefits realized by these systems. This is not to say that PV systems cannot be cost-effective to the participating customer. In fact, the decreases in system costs have improved the cost-effectiveness of PV systems to the point that additional ratepayer subsidized funding is not appropriate.

Q. Aside from extending the existing solar pilot programs, are there other actions Gulf Power could take to promote renewable energy in Florida?

A. Yes. Gulf can increase efforts around education on alternative energy sources, including solar, through the existing Energy Education component of Gulf's DSM Plan. As these technologies evolve, customer education is an increasingly important aspect of the service the company provides to all customers. Helping customers understand the opportunities and limitations associated with alternatives like PV can lead to a better

customer experience as well as continued discovery of ways these technologies can be incorporated into the utility grid. Increasing the focus on these alternatives in our school-based and community education efforts can help accomplish this goal.

Gulf can also work with area low-income agencies to seek educational opportunities for this customer base. As PV costs continue to decline, customers in lower income brackets may have opportunities to leverage the benefits of renewable energy alternatives. Increased customer education among this customer base can help ensure successful development of these projects.

Section 5: Conclusions

Q. What is your recommendation to the Commission regarding appropriate goals for the company?

A. My recommendation is that the Commission set goals for energy efficiency and demand-side renewables based on all measures that are cost-effective under the combination of the RIM and PT tests including the effects of free-ridership based on a two-year payback criterion. This policy will ensure all Demand-Side Management activity is evaluated consistent with supply-side resources for the purposes of meeting customer energy and demand needs in a least cost manner that effects lower electricity rates than would otherwise result. This policy is also consistent with the

Commission's recognition of the importance of implementing FEECA in a manner that supports economic growth and economic development.

Q. Does this conclude your testimony?

A. Yes.

BY MR. GRIFFIN:

Q. And, Mr. Floyd, did you have one exhibit attached to your direct testimony titled JNF-1, consisting of 18 schedules?

A. Yes.

MR. GRIFFIN: And I would note, Mr. Chairman, that that is identified as Hearing Exhibit 46 in staff's Comprehensive Exhibit List.

CHAIRMAN GRAHAM: Duly noted.

BY MR. GRIFFIN:

Q. Do you have any changes or corrections to your exhibits?

A. No.

Q. And have you prepared a summary for the Commissioners here today of your direct testimony?

A. Yes, I have.

Q. Would you please provide that?

A. Yes.

Good afternoon, Commissioners. Gulf Power's customers are at the center of everything we do. We have a long history of promoting energy efficiency to our customers. In fact, energy efficiency has been a key part of our value proposition since before the FEECA statute even came into existence.

Gulf has also been an innovator when it comes

to demand-side management. With this Commissioner's support, Gulf has operated the longest running critical peak pricing program in the country, EnergySelect. One key element of this program is customer choice. Customers like the choice, and that's an important consideration in this docket, because ultimately, customers choose to participant in energy efficiency programs when they make sense for them.

In my testimony, I propose the energy and demand reduction goals for Gulf Power for the period 2015 through 2024. These proposals are cost-effective under all three of the Commission-approved cost-effectiveness tests, RIM, TRC, and participant test, and they represent the reasonably achieveable potential for the next 10-year period. And as this Commission has recognized previously, all three of these tests are important.

Gulf's process in developing these goals meets all the statutory requirements contained in FEECA and the applicable Commission rules. The foundation of Gulf's proposed goals begins with assessing the technical potential for energy-saving measures. This step of the process is somewhat of a theoretical exercise because it does not measure what is cost-effective or achievable in the marketplace, but it

does establish baselines that are important in ultimately setting goals.

The next of step of the process is very utility-specific, determining the cost-effectiveness of these energy efficiency measures compared to the next planned generating unit need. For Gulf, this need isn't until 2023, which significantly impacts the cost-effective efficiency potential.

Finally, the market or achievable potential of these cost-effective measures is projected. This step also addresses free-riders by reducing the achievable potential for those measures more likely to be adopted without a utility program because they have a short payback to the customer.

The resulting achievable potential is cost-effective under all three tests and minimizes rate impacts to all customers, whether they participate in DSM programs or not. These proposed goals are lower than Gulf's current -- lower than Gulf's proposed goals in 2009, and this is entirely appropriate for a number of reasons.

First, Gulf's next avoided unit is much further out than was projected in 2009. Second, there are new building codes and appliance efficiency standards that reduce the potential energy savings from

utility programs. These proposed goals are also lower than Gulf's currently approved goals and recent results.

Again, this is entirely appropriate, because Gulf's proposed goals are based on the amount of energy efficiency that does not cause cross-subsidies and minimizes free-ridership. Gulf's currently approved goals do not have those protections in place.

The issue here isn't about how much energy efficiency can be achieved, but instead, how much is cost-effective to achieve. Cost-effectiveness is an important consideration in this docket, and it's the primary means of protecting the interests of Gulf's customers. Despite the well-publicized decreases in the cost of distributed PV systems, incenting these systems actually costs our customers more than the benefits they provide to the utility system.

For this reason, it's appropriate for the Commission not to continue the current pilots and employ other ways of encouraging development of demand-side renewables. Gulf has proposed that this can be accomplished through increased education efforts to our customers.

In closing, my testimony supports goals for Gulf that pass all three required cost-effectiveness tests. These goals were developed using the rigorous

process established by this Commission. Gulf's recommended goals afford the company the opportunity to continue offering innovative energy efficiency solutions to our customers, while at the same time minimizing cross-subsidies.

Thank you.

MR. GRIFFIN: We tender Mr. Floyd for cross-examination.

CHAIRMAN GRAHAM: Thank you, very much. Mr. Floyd, welcome.

THE WITNESS: Thank you.

CHAIRMAN GRAHAM: First is OPC, Mr. Sayler.

MR. SAYLER: All right. Thank you, Mr. Chairman, Commissioners.

CROSS-EXAMINATION

BY MR. SAYLER:

Q. Good afternoon, Mr. Floyd. How are you today?

A. Good afternoon. Good, thank you.

Q. Good deal. Are you familiar with your company's response to Office of Public Counsel Interrogatory No. 10, where we asked if the Commission approves the company's goals for that period of 2015 to 2024 and if the company becomes eligible for a reward under the FEECA statute? Are you familiar with the response?

A. Yes.

Q. Isn't it correct the company responded, "Gulf does not believe that incentives or rewards are necessary if the Commission approves goals based upon the RIM test"?

A. Yes, that is correct.

MR. SAYLER: All right. And I have a short series of rate impact questions for you.

Commissioners, for your benefit, yesterday when I was examining Mr. Koch, I had passed out a demonstrative exhibit that had the X on the top right. That provides the responses to both FPL, Duke, Gulf, and TECO all together in one handy handout if you want to look at that.

BY MR. SAYLER:

Q. Mr. Floyd, are you familiar with your company's responses to Interrogatories No. 22 and 24?

A. Yes.

Q. All right. For the 1,200 kWh customer, what would the rate impact be for 2015 if the company continues the current goals?

A. The currently approved -- the rate impact for the currently approved goals for 2015 -- I'm sorry, 2014, is $2.71.

Q. Okay. And if the Commission approves the

company's proposed RIM-based goals, what would the rate impact be starting in 2015?

A. 73 cents per 1,200 kilowatt-hours.

Q. Okay. Same question if the Commission approves TRC goals for the company.

A. $1.94 per 1,200 kilowatt-hours.

MR. SAYLER: Thank you, Mr. Floyd. Appreciate it. Thank you, Commissioners.

CHAIRMAN GRAHAM: Okay. Department of Agriculture?

MR. HALL: No questions.

CHAIRMAN GRAHAM: NAACP.

MR. DREW: No questions.

CHAIRMAN GRAHAM: Okay. FIPUG.

MR. MOYLE: Just a few.

CROSS-EXAMINATION

BY MR. MOYLE:

Q. Just to follow up on Mr. Sayler's questions, I represent large users of electricity, and you gave those calculations based, I think, on a 1,200-kilowatt usage; is that right?

A. Yes.

Q. And the percentages were -- right now it's 2.71, and it would go down to 71 cents if your proposal was approved?

A. I believe the response was 73 cents.

Q. I'm sorry, 73. So 2.71 now, and then it goes down to 73?

A. Yes, that's correct.

Q. Okay. What's the -- just ballpark, what percent reduction would that be?

A. That would be more than 50 percent.

Q. Do you believe your proposal still achieves the goals and objectives of FEECA, even given this amount of reduction?

A. Yes. The proposed goals that Gulf has recommended here meet the objectives of FEECA by being cost-effective to the general body of customers utilizing the RIM test and the participant test.

Q. And you would agree that while your analysis was done on 1,200 kilowatts, that big users, big companies that are industrial customers of Gulf, that the savings that they achieve may be the same on a percentage basis, but it would a lot more on a per dollar basis; correct?

A. That's correct.

Q. And then with respect to the payback screen that was used, you used a two-year payback screen; is that right?

A. Yes, that's correct.

Q. Okay. You also did a screen on a three-year screen -- a three-year payback; is that right?

A. As requested in the Order Establishing Procedure, Gulf provided a sensitivity to the economic potential for a three-year payback screen and a one-year payback screen.

Q. Right. And isn't it true that while we're talking about these numbers here, the 2.71 that would come down to 73 cents, if a three-year payback screen was used, that that reduction would be even more; correct?

A. Logic would suggest that, yes, that a three-year screen would eliminate more potential, which would result in a lower proposed goal, which would have a lower cost.

MR. MOYLE: Thank you. That's all I have.

CHAIRMAN GRAHAM: Okay. Sierra Club.

MS. CSANK: No questions, Mr. Chairman.

CHAIRMAN GRAHAM: SACE.

MR. GUEST: Thank you.

CROSS-EXAMINATION

BY MR. GUEST:

Q. Good afternoon, Mr. Floyd.

A. Good afternoon.

Q. Have you had a chance to hear the testimony of

the previous witnesses?

A. Yes, I have.

Q. Okay. So are you prepared to answer the questions you expect me to ask about these four measures? I just want to really cut this -- I need to go through them, don't I?

A. No, you don't need to go through them. You know, I can say up front, I think where you're going with that is demonstrating that there are some measures that have a short payback that fail RIM and TRC, and so as a consequence, they were not included in the goals that the company has recommended here.

And the logic for that is that they would cause cross-subsidies to occur, particularly if you think about having lower income customers paying for things like faucet aerators and low-flow shower heads that maybe a customer with more means could afford to adopt. So that's the reason, you know, really from an economic evaluation standpoint, they're not included in there.

That doesn't mean, though, that those measures aren't applicable to low-income customers. In fact, Gulf's current low-income program includes those measures. That's our Community Energy Saver program. And we would intend to continue to offer those kinds of

measures, because in that situation, very targeted at low-income customers, that amount of subsidy would be appropriate to overcome the barriers that exist for getting the low-income engaged in energy efficiency.

So I think that's the essence of the questioning on those measures.

Q. Just to be very clear, what I was talking about was your hot water heater blankets, which I believe your records show about 80,000 households could use them. Do you need to look to see that?

A. No. I'll take your word for that.

Q. Okay. And the faucet aerator, which is cheap, pays off in seven months, also has about 80,000 people that could use it. Low-flow shower heads, cheap, pays off in eight months, about the same concentration, same with heat trap. So you agree with all of that that I just said?

A. Yes.

Q. Okay. So the low-income programs, do you agree that that's 5.5 percent of eligible customers? Do you need some calculations for that?

A. I'll take that. I believe from our most recent participation reports, that number sounds correct.

Now, that would be to our Community Energy

Saver program that I just mentioned a minute ago, where as an income qualified program, we target specific neighborhoods throughout our service area and target customers in those neighborhoods to provide these services. And through 2013, that sounds like the percentage of eligible customers that have participated in that.

Q. So just to be clear here, you've got about 135,000 eligible customers, low-income folks? Does that sound about right?

A. Yes.

Q. And over the three years, last three years, you've reached 7,400 of them?

A. Yes, that's correct.

Q. So in all of three years, the entirety of three years, you've got 5.5 percent; is that right?

A. Yes, that's correct.

Q. Now, let me turn to another question I've been asking other folks. Do I have to go through everything, or can you simply say -- agree with me that all of the residential measures that pass the RIM test are related to heating and cooling? Do you need to look at them?

A. Sure. I'll take a look at those.

Q. Okay. I guess we will -- this is PSC Exhibit 46. It's an excerpt, as always, which would be Floyd

Exhibit JNF-1.

CHAIRMAN GRAHAM: Which one is it?

MR. GUEST: One. I think that's 1, Schedule 11.

CHAIRMAN GRAHAM: You don't have to pass that one out. I believe we have that one.

MR. GUEST: 191 will be the number.

CHAIRMAN GRAHAM: All right. We'll call this 191.

(Exhibit 191 was marked for identification.)

BY MR. GUEST:

Q. Okay. Did you get a chance to take a look at that? I'm on page -- I'm on the first page. Is it highlighted in yours?

A. No.

Q. Okay. It's this piece right here in the upper left-hand corner.

A. Right.

Q. Now, the question is, would you agree that all of these are air conditioning and heating ideas? They're heating and cooling relating to peak rates?

A. They're not all air conditioning measures, but I would agree that they are all related to the thermal envelope of a home. And that's very appropriate, especially considering the climate in Florida. Florida

has the highest heating degree days of any state in the country, and so weather-sensitive energy uses are particularly important. And so those are just demonstrating that those are the most cost-effective for this region.

Q. And the portion of the statute that calls for goals related to weather-sensitive demands, that comports fully with that; correct?

A. Yes, that's correct.

MR. GUEST: So let me turn to the last items. I think we probably need to move these into evidence, which will be 180 -- now, here's the problem we have with this exhibit, is that the original is -- that's not the one?

I'm trying to figure out if we need give you an excerpt or not, because it's -- okay. Yeah, I think we can use this one. So we're just going to use the -- this is an excerpt of PSC 46. Again, this is Schedule 6 of Exhibit 1, Exhibit 192.

CHAIRMAN GRAHAM: Okay. We'll call this Exhibit 192.

(Exhibit 192 was marked for identification.)

MR. GUEST: Okay. And the next one is Gulf's response to staff's first interrogatories, No. 9, and this is an excerpt for PSC 11 -- I'm sorry,

111.

CHAIRMAN GRAHAM: So 192, what's the title for this? It's going to be --

MR. GUEST: Gulf Power Company's -- I guess it would be witness Floyd, Exhibit No. 46, Schedule 6.

CHAIRMAN GRAHAM: Page 1 of 1.

MR. GUEST: Right, that's correct.

CHAIRMAN GRAHAM: All right.

BY MR. GUEST:

Q. I have just a handful of questions. If you could -- is your copy highlighted?

A. No, it's not.

Q. Okay. I'll wait.

CHAIRMAN GRAHAM: All right. This one is going to be 193, and do you have a title for this one?

MR. GUEST: Yes. This is Schedule -- 193. It's this one. That was Gulf's response to staff's first interrogatory No. 9, which is a portion of PSC number 11 -- 111. I'm sorry. 111.

(Exhibit 193 was marked for identification.)

CHAIRMAN GRAHAM: Okay. I think everybody has got it. Mr. Floyd, do you have both of those documents?

THE WITNESS: Yes.

BY MR. GUEST:

Q. Okay. So we've got them both here. Okay. First let's turn to No. 192, and if you look at Tables 1 and 3, you see the total in the second to the left column, bottom row, for annual gigawatt-hours for efficiency, energy efficiency, is 3,253?

Yes? I see you nodding yes.

A. Yes.

Q. And then the total for solar is 4,017?

A. Yes, that's correct.

Q. The total technical potential then is 7,270?

A. Correct.

Q. So now you compare that to your -- on 193. I'm turning to 193 now. I'm in the fourth group of boxes on the far right. Are you with me?

A. Yes, sir.

Q. All right. The fourth boxes on the far right, so we look at the ones that made it through to achievable potential, and it's 84 gigawatt-hours?

A. Yes.

Q. And for the TRC, it's well over three times that, three and a half times that. It's 268.

A. 268.

Q. So if you compare the fraction of technical potential down to what you ended up with for the RIM

test, you're at 1.2 percent?

A. Okay. I haven't done the math, but I accept that.

Q. And for the TRC, you're at 3.7 percent?

A. I accept that.

Q. Okay. So now, let me turn quickly to the two-year payback issue we talked about earlier.

A. Okay.

Q. I would like you to start with -- I think we could do all this on No. 193, the long one?

A. Okay.

Q. So let's start with the -- let's start with the free-riders over here on -- let's see. It's the second box from the right. Yes, second box from the far left, which is economic potential. And RIM, you've got 923 as the total. Does that sound right? Do you see it?

A. Yes, 923.

Q. And then you move over to the next box over, and after the two-year payback, you've dropped to 633. So that's a drop of 290 gigawatt-hours. Do you agree with me?

A. Yes.

Q. Okay. And then the total achievable potential is 84; right?

A. Yes.

Q. So if you add those two together, you get to 374?

A. I haven't done the math. I accept that.

I will say here, as we move from the economic potential numbers to the achievable potential numbers, we're mixing apples and oranges a little bit, because an economic potential, we're basically looking at the technical potential of the measures that are cost-effective at that phase of the process. So at this phase, we're not considering how many would be adopted by customers and how much could be achieved over the next 10-year period.

When we move to the achievable potential, though, that is actually projecting customer adoption over the next 10-year period, which, of course, is a function of benefits to the customer, awareness about the availability of measures, the marketing efforts, that sort of thing. So when we move from one of these to the next, there's a lot more that goes into it than just subtracting two numbers.

Q. Well, before I inquire about that, let me just get to the last point, which is that -- I think that we said the total came to 374. And you agree with me that's about four and a half times what you would get if

you excluded -- when you exclude the free-riders, arithmetically?

A. Right. I think we actually evaluated the technical -- or the achievable potential without excluding the two-year payback measures in the RIM scenario and have a number for that. If you could give me a minute to look that up, I --

Q. Sure, please do.

A. -- think I could find that.

Q. And while you're at it, we'll do the same with the TRC.

A. The achievable potential under the RIM portfolio without excluding any of the two-year payback measures is 98 gigawatt-hours compared to the 84 that we're looking at here.

Q. Okay. And that's -- and how about the same exercise for the TRC test?

A. 555 gigawatt-hours.

Q. So it's roughly double?

A. Roughly.

Q. So now just one question I end up being puzzled at here. We had two of the utilities that found that these four measures were never cost-effective and two of them that excluded them because they were too cost-effective. So I think what I hear you saying is

that you're somewhere in between, that you calculated it and you found that it was, you know, a gain that roughly doubled under TRC. Can you explain how you end up with those seemingly conflicting positions, where you are kind of in the middle?

MR. GRIFFIN: Object to the form.

A. I'm not sure I understand the question.

Q. Pardon me?

A. I'm not sure I understand the question.

Q. Okay. Let me just do it step by step. You know that two of the utilities found that these four inexpensive, quick payback measures never were cost-effective, and that you and another utility found that they were so cost-effective that you couldn't use them because they paid back in two years.

MR. GRIFFIN: I continue the objection. I don't know that Mr. Floyd has testified that he does know that.

BY MR. GUEST:

Q. Let's assume that --

MR. GRIFFIN: I think it lacks a premise.

BY MR. GUEST:

Q. Let's just assume that the record shows that.

CHAIRMAN GRAHAM: Hold on a second. Let's let him answer first before you continue on.

MR. GUEST: An answer from the witness?

CHAIRMAN GRAHAM: If he does recall -- I don't know if he was in the room earlier when you made that -- when those determinations were stated.

MR. GUEST: Okay. That's -- I get that. My only point is that if the record shows that, I'm entitled to inquire, "Well, the record shows that. Can you help me explain why?"

CHAIRMAN GRAHAM: Okay. Ask that question.

BY MR. GUEST:

Q. So how can it be? Can you help us explain how it can be that two of the utilities find that these are never cost-effective, and the other two find out -- find that they're so cost-effective that you shouldn't use them? Can you help us with that?

A. I can't explain how the other utilities would have performed their evaluations. I can only speak to how Gulf evaluated these measures in our process.

MR. GUEST: May I have a moment?

CHAIRMAN GRAHAM: Sure.

(Pause in the proceedings.)

BY MR. GUEST:

Q. Just to be absolutely clear, the four ones we talked about, the cheap ones, shower head, aerator, hot water heater blanket, and trap, those all failed the RIM

test?

MR. GRIFFIN: Is that a question?

MR. GUEST: Yes, it's a question.

BY MR. GUEST:

Q. Isn't that right?

A. Actually, could you provide that for me just to --

Q. Sure.

A. -- make sure I'm --

Q. Just a moment.

A. -- speaking correctly on that?

MR. GUEST: Now we need some exhibits. This will be Gulf's response to Sierra Club's first set of interrogatories, item number 18, which we'll mark as --

CHAIRMAN GRAHAM: Do we have -- are you passing out the full exhibit and the excerpts? Let's just pass out the excerpts if that's going to do the job.

MR. GUEST: Okay.

CHAIRMAN GRAHAM: I don't think we need to pass out the full exhibit. If there's an objection to it, we can pass it out later. Let's start with the excerpts?

MR. GUEST: 194 will be excerpts?

CHAIRMAN GRAHAM: That's correct. You made me wish I was back in the paper company still.

(Exhibit 194 was marked for identification.)

BY MR. GUEST:

Q. Have you had a chance to look at it?

A. Yes.

Q. Okay. So do all four of those fail the RIM test?

A. Yes, they do.

MR. GUEST: No further questions. Thank you.

CHAIRMAN GRAHAM: So the title for 194 will be Excerpts from Gulf Response to Sierra Club First Set of Interrogatories, No. 18.

Okay. EDF.

CROSS-EXAMINATION

BY MR. FINNIGAN:

Q. Good afternoon, Mr. Floyd. My name is John Finnigan with the Environmental Defense Fund.

A. Good afternoon.

Q. I just have a few questions for you about your solar program.

A. Sure.

Q. Mr. Floyd, what is the amount of the incentive that you pay in your solar program?

A. Currently, we pay $2 per watt in our pilot

program for PV.

Q. And how was $2 per watt determined?

A. That amount is based on the installed capacity of the solar photovoltaic system.

Q. Are you saying that you pay $2 per watt based on whatever the installed capacity of the system is?

A. Up to a maximum of $10,000.

Q. Okay. I'm sorry. I phrased my question poorly. What I meant to ask was, why is it $2 per watt?

A. That was the amount that was selected at the beginning of the pilot programs in 2011 to be used -- I'm sorry, in 2010, when the plan was filed to be used for the PV program.

Q. Was it selected by the Commission in their order?

A. I don't recall that the Commission selected that amount. That was the amount agreed to with all the utilities to offer the -- in their solar pilot program.

Q. Now, we've had a pretty significant change since that time, in that the prices for solar have come down dramatically since then, haven't they?

A. Yes, they have decreased.

Q. And would it be fair to say that if the price has come down so dramatically, maybe you don't need such a high incentive to incent distributed solar?

A. That could be a conclusion.

Q. And if you lower the incentive, that would make the program more cost-effective, wouldn't it?

A. That would serve to improve the cost-effectiveness of the program. In my testimony, I talk a little bit about that and our evaluation of the pilot and determine that even with no incentive, the solar doesn't pass RIM or TRC. So at that point, really, lowering the incentive, while it would improve the cost-effectiveness, it doesn't bring it to be passing either of those.

Q. But you could improve the results of the program in terms of paying a lower incentive, and you could get a lot more customers to deploy the solar and get the benefits of more distributed solar on your system?

A. I can't conclude that that would absolutely happen, but that seems like a reasonable suggestion.

Q. Now, the Commission puts out a report every year when it does an annual report on the FEECA statute, doesn't it?

A. Yes.

Q. Do you review those reports?

A. Not in detail.

Q. Okay. Did you review the testimony of

Mr. Jamie -- Dr. Jamie Fine, the witness for the Environmental Defense Fund?

A. Yes, I did review his testimony.

Q. He references that report in his testimony. And it's just one portion of the report. I know it's a long report, but the part in question has to do with the amount of the incentive. And what the Commission concluded in their report was that -- the incentive sells out immediately after it's released to customers, and the Commission concluded that the incentive could probably be ratcheted down and still be a successful incentive, and the indicator of that would be the fact that it's oversold or sells out or is oversubscribed immediately after it's released. Do you recall seeing that in Dr. Fine's testimony?

A. I don't recall that specifically, but I'll accept that that's there.

Q. Now, I went onto the Southern Company website for Georgia, and I found that Georgia Power is doing a study with EPRI, the Electric Power Research Institute. Are you familiar with that?

A. I'm familiar with EPRI. I'm not familiar with the study necessarily.

MR. FINNIGAN: Your Honor, I have an exhibit I would like to have passed out at this time.

CHAIRMAN GRAHAM: We have it.

MR. GRIFFIN: And, Mr. Chairman, at the risk of losing my right to object later, I mean, I think we can give him some leeway to talk about it, but Mr. Floyd has indicated that he's not necessarily familiar with the study, so I think Mr. Finnigan needs to lay a foundation if he expects to introduce this into the record.

MR. FINNIGAN: Well, I'll lay the foundation that I got it off the Southern Company website, and it shows on the face of the document that it's from the Southern Company website. So I submit that's an adequate foundation to enter the document into evidence. Now, the witness can -- he can indicate in his answers whether he knows anything about it. I don't think he needs the attorney to tell him whether he knows anything about the document. But the document would be -- I submit would be admissible on the face of it from being on the website.

CHAIRMAN GRAHAM: Well, our attorney has stated it earlier that if there's going to be an objection, she would like to hear about it early on. As he said, he can't reserve his right to do it later. So I understand where you're coming

from. We'll continue down this path, and we'll see where it goes. Ask the question you have to ask.

BY MR. FINNIGAN:

Q. Do you have the document in front of you, Mr. Floyd? It's the EPRI study.

CHAIRMAN GRAHAM: Before you continue, let's go ahead and labeling this Document 195 -- I'm sorry, Exhibit 195.

MR. FINNIGAN: Thank you.

(Exhibit 195 was marked for identification.)

BY MR. FINNIGAN:

Q. Mr. Floyd, do you have that Exhibit 195 before you, which is described as the EPRI study from the Georgia Power website?

A. Yes, I do.

Q. And that Georgia Power logo up on the top is the correct logo for Georgia Power, and the Southern Company that's indicated at the top of the document is the parent company of Gulf Power; isn't it?

A. Yes.

Q. And Georgia Power is your affiliated company?

A. Yes. Georgia is one of the holding companies of -- I'm sorry, one of the affiliates of Southern Company.

Q. Okay. And this document from the Georgia

Power website talks about a study with EPRI on solar power lines, and it says here that EPRI is the Electric Power Research Institute. That's an institute that does research projects for electric utilities all around the country, isn't it?

A. Yes, it is.

Q. And it says that this document is dated back in 2011, and it says that Georgia Power is conducting a study with EPRI over an 18-month period to install distributed solar in a number of cities around the state of Georgia on different distribution lines and testing for a number of factors like temperature and cloud cover and solar intensity; is that correct?

A. That's my understanding from a brief review.

Q. Has Gulf Power done such a study about those types of conditions in Florida?

A. No, we have not.

Q. Okay. If Georgia Power thought it was important to do such a study at so many different locations and test for so many variables, do you think it would be reasonable for Gulf Power to do such a study to measure the same impact of those conditions in Florida?

A. I can't speak to really the reasoning behind Georgia selecting to do the study there. You know, Gulf

has operated the solar pilots since 2011 as a means of evaluating the opportunity to improve the cost-effectiveness of PV systems in our service area. That's what we have done during that time period to evaluate solar.

Q. What have you done differently during the time your program has been in effect to improve the cost-effectiveness?

A. What have we done to improve the cost-effectiveness?

Q. Yes.

A. Well, aside from working with our customers and contractors that come into our area to help them understand, you know, local -- maybe code requirements, access to installers, how the net metering process works, that sort of thing, really just to facilitate installations, that would be the extent of what we've done. We don't set the pricing for solar systems. We don't affect the production or have the ability to change that or improve that. We can only give recommendations to customers on how to best install them to maximize the operation, orientation, avoiding shading, that sort of thing. But there's nothing that we can do to affect the cost of that.

Q. Now, you mentioned earlier that you were here

for Mr. Bryant's testimony earlier today?

A. Yes.

Q. Did you hear his response to the questions from Commissioner Brown about where does his company, where does TECO go next with solar starting to proliferate on the system?

A. Actually, I think I had stepped out during the time he was being questioned by the Commissioners.

Q. Okay. Well, what he talked about was -- if may summarize, was just the idea that solar is starting to proliferate. And he described how it might be important for the company to better understand the impacts of solar on the system, because as it reaches higher penetration levels, there may be some integration issues. And so he said that the company -- I think he used the term "grappling," that they're grappling with what to do about it, and I think he said that they were considering a study.

Does it sound reasonable for any company to consider studying the impacts of distributed solar on their system because of the different variables that have to be measured, because the local conditions may be different for each utility, and because distributed generation is coming down in price and starting to proliferate more?

A. That seems like a reasonable thing to pursue.

Q. A couple of the utilities in this case have suggested that there should be a solar research and development program. Have you reviewed their testimony in that regard? I think FP&L was one of the companies that talked about it, and then Duke, Mr. Duff talked about it in terms of a conceptual study. I don't know. Have you had a chance to review their testimony, or were you present during any of their testimony?

A. I have been present. My understanding is that Mr. Duff's proposal was not a study, but in fact, more of an utility-owned solar installation.

Q. But do you think it's reasonable that these factors ought to be studied in some more detail to determine the impacts on the system, and also to study the incentives to see if the incentive level could be driven down to make the program more cost-effective, get greater deployment, and have lower impacts on the bills of customers, because you can maybe cut the incentive and still get it fully subscribed?

MR. MOYLE: I'm just going to object to the form. It's compound. There's like five questions there.

MR. FINNIGAN: Let me withdraw the question.

BY MR. FINNIGAN:

Q. Do you think it would be reasonable perhaps to establish some sunset period for this program, where during that time you could experiment with the different levels of incentive and see if you could get greater deployment of solar with a lower incentive?

A. In the development of my testimony, we considered a number of different options. I think we reflected that in one of the interrogatory responses. But ultimately, none of those were cost-effective. And so at the end of the day, our concern was that no matter what we did that provided financial incentives around solar, that it was not cost-effective and it caused our customers to pay more than the benefits they received for it, you know, as a general body of customers.

But certainly, you know, Gulf is interested in looking for ways to incorporate demand-side renewables into our system in a way that doesn't put upper pressure on rates and doesn't cause cross-subsidy between the customers who are able to invest in those technologies and our other customers who are not. So we are certainly interested in that and continually looking for those kinds of opportunities across all of our customer groups and well beyond the scope of being just limited to demand-side renewables, which is what's being considered here. So I want to make sure we understand,

Gulf is looking for those opportunities, interested in that. And continuing to evaluate how solar can be incorporated into our system to provide benefits to our customers is certainly an objective that we have.

Q. But you do not have a study about how distributed solar functions on your Florida service territory, so you don't know what the benefits are that solar might provide to the grid here, like reduced line losses, avoided distribution system capacity, reduced air emissions, improved power flow and voltage regulation? You haven't studied any of that in Florida, have you?

A. We haven't studied those specific things. As I described in my testimony, when we evaluated the solar technologies, we did it in the same way that we evaluated the other energy efficiency measures, where we do consider the capacity benefits that solar would provide during our peak conditions, the energy saving benefits of the production of kilowatt-hours that solar provides, as well as the line losses that having that resource at a customer's site would avoid. So we do take all those into consideration in how we evaluated solar.

Q. Well, you take it into consideration, but that's without the benefit of a study regarding how

distributed generation performs in Florida; right?

A. We took it into consideration, in that we gave solar the capacity value that it provides at our peak conditions and the energy production value that it provides, and those are fairly well understood values. And we grossed those up for the line losses that would be avoided by placing those resources out on our distribution system at a customer premise in exactly the same way that we evaluate all the other energy efficiency measures.

Q. Was that analysis that you just described, was that performed using values for the factors such as line losses and avoided generation capacity derived from any study measuring the impacts of distributed solar on your system in Florida?

A. The values that we used were derived from the PV watts calculation, which is a -- I forget the government resource that that comes from, but it's a widely used resource that quantifies the capacity and energy production of solar systems, and we're able to model that at specific geographic locations in our service area, and that was the source of the capacity and energy savings data that we used.

Q. Now, we've heard a lot of testimony from other witnesses in this case that you can't bring in

information about energy efficiency programs to Florida because Florida is different. But you're saying you can bring in information about distributed solar from other states to Florida because it's the same?

A. Well, I just said that we're able to use geographic-specific information that is available in that modeling tool that provides production data for three of the metropolitan areas in Northwest Florida, the Pensacola area, the Fort Walton area, and the Panama City area. So it is actually using Florida-specific data.

Q. Is it true that the study you're referring to is by NREL?

DR. FINE: It's a modeling tool provided by NREL.

BY MR. FINNIGAN:

Q. Is it a modeling tool provided by NREL?

A. That's my understanding.

Q. And that's a study that has to do with the generating characteristics of distributed solar; is that right?

A. It's a tool that's used to model the production output of solar, yes.

Q. Did NREL come down to Gulf Power's service territory in Florida and install any distributed solar

down there like the EPRI study that Georgia Power is doing that took 18 months to do and study the result of those installations?

A. I don't know if they came to Northwest Florida to do that.

MR. FINNIGAN: That's all the questions I have. Thank you, Mr. Floyd.

CHAIRMAN GRAHAM: Thank you, sir. Staff.

CROSS-EXAMINATION

BY MS. TAN:

Q. Good afternoon, Mr. Floyd.

A. Hi.

Q. The Order Establishing Procedure asked for Gulf to provide the RIM and TRC portfolios. Gulf provided annual values for the RIM portfolio but not for the TRC portfolio, so I have a few questions regarding Gulf's TRC portfolio.

A. Okay.

Q. If you can look at Schedule 10 of your exhibits, which provides Gulf's projected achievable DSM savings assuming the use of a TRC portfolio.

A. Okay.

Q. All right. Would it be possible to present in a format similar to the Schedule 1 of your exhibit what your annual DSM goals would be based on the TRC

portfolio?

A. Yes. As a matter of fact, I have that here.

Q. Excellent. If you could just read those out loud?

A. Yes. I'll start with annual energy. For 2015 -- I'm just going to go sequentially 2015 through 2024.

Q. That sounds perfect.

A. Beginning in 2015, 10 gigawatt-hours; 2016, 14 gigawatt-hours; 2017, 18 gigawatt-hours; 2018, 22 gigawatt-hours; 2019, 26 gigawatt-hours; 2020, 30 gigawatt-hours; '21, 33 gigawatt-hours; '22, 36 gigawatt-hours; 2023, 39 gigawatt-hours; and 2024, 41 gigawatt-hours, for a cumulative value that matches what's in Schedule 10.

Q. Excellent.

A. I have the summer peak demand and winter peak demand reductions as well if you would like for me to read each of those, or I'll be glad to just give this to you.

Q. Is it possible for you to -- can we maybe put that into the record? Or do you want to read it out loud?

A. Whichever you prefer.

Q. If you could go ahead and read it out loud, please, sir.

A. Okay. This is summer system peak. Beginning with 2015 -- and here I'll skip all the years. I'm just going to read the numbers. There are, in megawatts, 4, 5, 7, 9, 10, 12, 13, 14, 15, 16.

And winter system peak megawatts beginning in 2015, 2, 3, 4, 5, 6, 6, 7, 8, 8, 9.

Q. Do you have the breakdown for residential and the commercial/industrial?

A. No. I'm sorry. I don't have that handy.

Q. Would it be possible to have this information presented as a late-filed exhibit under the same circumstances that was decided for Duke Energy Florida's witness, Mr. Duff? Or conversely, we could get that information from you during the rebuttal phase.

CHAIRMAN GRAHAM: Is it appropriate -- I guess this is a question to Mary Anne -- to get that information through the rebuttal phase?

MS. HELTON: I suspect that the intervenors would appreciate that more, because they would have the benefit of having received it on the record and can object here today if they have issues with it.

MR. MOYLE: I'll just jump in. As we've done in not just this proceeding, but a whole host of proceedings, late-filed exhibits are something that are problematic for FIPUG, given a long history

that I won't go into today. So we object to it, but we would withdraw that objection upon the provision of the information and a chance to look at and ask questions about it.

So we want to work to try to get the information out there. We're open, whether it can be provided on rebuttal or provided in the same context as was done with Duke, where it's provided and we have a chance to ask some questions and register an objection. We're open to doing that. We just don't want to allow things to come in without review as to what they are.

MR. GUEST: We don't have an objection as long as we get an opportunity to ask questions about it in rebuttal, to make the system work.

CHAIRMAN GRAHAM: Is this information that we have now? Is this information you have now or tomorrow morning?

THE WITNESS: Yes, we can have this information tomorrow morning.

CHAIRMAN GRAHAM: Okay.

THE WITNESS: That's no problem.

CHAIRMAN GRAHAM: So there would be plenty of time for them to review it and then be prepared to ask you on the rebuttal.

THE WITNESS: Sure.

MR. GUEST: I'm not positive that two hours qualifies as lots of time at this stage, Mr. Chairman, but we'll do what we can do. If we can have it electronically, that would be very helpful too.

CHAIRMAN GRAHAM: Okay. Can you provide it electronically as well?

THE WITNESS: Certainly, yes, sure.

CHAIRMAN GRAHAM: All right. So we will get it tomorrow.

MS. TAN: Thank you very much.

CHAIRMAN GRAHAM: Now, Mary Anne, do we need to put this as Exhibit --

MS. HELTON: I guess it depends on whether you want to call it a late-filed exhibit or not. Perhaps maybe if Mr. Griffin could send it out -- when it's compiled, he could send it out to all of the parties so that all the parties can have an opportunity to look at it, and it can be identified as an exhibit when Mr. Floyd takes the stand, which looks like it's going to be tomorrow.

CHAIRMAN GRAHAM: Okay.

MR. GRIFFIN: That's fine.

CHAIRMAN GRAHAM: Okay. Is that it for staff?

MS. TAN: We have a few more questions. Thank you.

BY MS. TAN:

Q. Mr. Floyd, given your experience with the demand-side management arena, I would like to ask a few questions regarding the propriety of using a two-year payback horizon to evaluate free-riders. Specifically, is it your experience with customer behavior that Gulf's residential class implements DSM measures with payback periods of two years or less?

A. It's our recommendation here that a two-year payback period be used as a way to reduce the potential for free-ridership for things that have a short payback which would more likely be adopted without a utility incentive.

Q. And would that also be the same for the behavior of Gulf's commercial and industrial customer classes?

A. Yes.

Q. And if you look at your testimony on page 17, and if you could let me know when you're there?

A. Okay.

Q. Here you're talking about the benefits of a two-year payback period, and Gulf's economic screening of the economic sensitivities presented here concludes

that the company excludes measures with less than a two-year payback; is that correct?

A. I'm sorry. Could you point me to some lines here?

Q. Specifically, line 11 on page 17 of your direct testimony. You can also look at line 10.

A. Okay. I think what I'm talking about there is that we set the maximum incentive level at an amount that would produce a two-year payback to the customer.

Q. And is it correct that savings from energy efficiency measures with an estimated payback less than two years are not included in Gulf's proposed goals?

A. Yes, that's correct.

Q. And is it your belief that 100 percent of the customers will install measures with short payback periods because it's in their best economic interest?

A. No, that's not our belief, and that's really not the way that the two-year payback screen ultimately works. All we're doing is reducing the achievable potential associated with those measures. So like any other measure, the adoption is a function of the payback to the customer. At no point would you expect 100 percent of the customers to adopt a measure even if you give it to them. You know, kind of going back to the low-income example earlier in our program, while we

target specific neighborhoods and income qualify an entire neighborhood, we're not able to achieve 100 percent participation in that program, just because some customers, you know, for a lot of different reasons just don't want to adopt a measure. So we're not in any way suggesting that 100 percent of customers would adopt the less than two-year payback measures.

MS. TAN: Thank you very much. Staff has no further questions.

CHAIRMAN GRAHAM: Commissioners? Commissioner Brisé.

COMMISSIONER BRISÉ: Thank you, Mr. Chairman.

Mr. Floyd, how many customers does Gulf have?

THE WITNESS: About 430,000.

COMMISSIONER BRISÉ: 430,000. So the pilot programs have been run from 2011 to 2013?

THE WITNESS: Yes, sir.

COMMISSIONER BRISÉ: How many customers have adopted?

THE WITNESS: Approximately 180 customers have adopted the solar PV program.

COMMISSIONER BRISÉ: There are two other programs, or three other programs that are listed, solar thermal water heating, and then you have the solar thermal water heating low-income, and then

the school, so if you could include all of that.

THE WITNESS: That's right. I'm sorry. In the solar thermal water heating, that's a little under 100. The solar thermal solar water heating for low-income is about 45, and three Solar for School installations.

COMMISSIONER BRISÉ: So we're talking about under 300 customers out of -- what was the number? 400 --

THE WITNESS: 430,000, approximately.

COMMISSIONER BRISÉ: And what is the cost for those programs in the aggregate?

THE WITNESS: Around 800,000, 800- to 900,000 a year, without looking specifically at the numbers, is approximately the amount that Gulf has spent in each year of the pilot programs.

COMMISSIONER BRISÉ: So we're talking about 800,000 per year?

THE WITNESS: That's correct.

COMMISSIONER BRISÉ: So that's about $2.4 million?

THE WITNESS: Yes, sir.

COMMISSIONER BRISÉ: What is the rate impact to individual customers for those programs?

THE WITNESS: It would be, on 1,000

kilowatt-hours a month, around 8 cents a month. I'm just trying to do some quick math in my head.

COMMISSIONER BRISÉ: About 8 cents a month?

THE WITNESS: Per thousand kilowatt-hours.

COMMISSIONER BRISÉ: Per thousand kilowatt-hours? What is the benefit to those who are non-participants?

THE WITNESS: The benefit to non-participants would be any fuel savings that are realized from avoiding fuel purchases across the entire system.

COMMISSIONER BRISÉ: So if we were to quantify that per customer in terms of potential rate impact, if any?

THE WITNESS: I don't -- I'm not sure what that would be on a per customer basis.

COMMISSIONER BRISÉ: Okay. So I think OPC asked you a couple of questions in terms of the current goals and the new goals that are projected. So if we were to layer onto the current goals for this year, using the RIM approach, 73 cents per customer per month, so we would add 8 cents to that --

THE WITNESS: Yes.

COMMISSIONER BRISÉ: -- for the solar programs that benefit under 300 customers; is that accurate?

THE WITNESS: Yes, that's accurate.

COMMISSIONER BRISÉ: Do you think that that is the best use of customer money?

THE WITNESS: I don't. Even though 8 cents doesn't seem like very much money, we also talk about customers where every penny is important. So we have a lot of those customers on our system that every dollar matters. So even though it seems like a small subsidy, I believe that, you know, representing all of our customers, we would want to avoid that if at all possible.

COMMISSIONER BRISÉ: And so that same calculation, if we use the TRC approach, we're talking about $1.94, so that takes us roughly over $2; is that correct?

THE WITNESS: Correct.

COMMISSIONER BRISÉ: Okay. Thank you for clarifying that for me.

CHAIRMAN GRAHAM: Commissioner Brown.

COMMISSIONER BROWN: Thank you. And you answered a lot of the questions I had from Mr. Finnigan's line of questioning, but I did have one. And in your prefiled testimony, is it accurate to say that the demand wasn't -- full demand for the solar pilot projects wasn't really

maximized or there? Would that be an accurate statement?

THE WITNESS: Not all of the pilot projects. The solar thermal water heating pilot project never -- has never enrolled to the amount that we had budgeted. The PV project had.

COMMISSIONER BROWN: Why would you -- what do you attribute that to?

THE WITNESS: The solar water heating not adopting?

COMMISSIONER BROWN: Uh-huh.

THE WITNESS: I think there's a couple of things. One, it's a fairly -- it's a very expensive technology, frankly, where there's some very good, much less costly alternatives. Like heat pump water heaters, frankly, is a fairly new technology that heats water quite a bit less expensively than solar water heating. So the technology is expensive.

A lot of customers are concerned about having that installed on their roof and having water pipes penetrating their roof. You know, there's stories of leaking and the systems freezing and causing those kinds of problems. So I think in some ways, there's customer hesitancy to adopt it because of

that.

And we have actually experienced, you know, based on the information that customers provided during the course of the pilot programs, actually a little bit of cost inflation for the solar thermal water heating systems as opposed to what we saw in the PV systems.

So I think there's a lot of different reasons for that, but ultimately, it's just not -- there's not as much customer interest in that technology.

COMMISSIONER BROWN: Thank you.

CHAIRMAN GRAHAM: Commissioner Brisé.

COMMISSIONER BRISÉ: Yes. One other question. On your Schedule 16, I noticed that the programs that you have laid out there have remained relatively static. However, the administrative cost has gone up by 68 percent. If you could sort of explain that to me, in terms of going from year 2012 to 2013.

THE WITNESS: And I believe we addressed this in an interrogatory response, but I think in the early years of this, we were including some administrative expenses associated with an old Solar for Schools program that the company operated prior to the launch of these pilots. So I think

some of that was tied up in there.

And then throughout the course of this, we've had to make some investments in some of the computer technology to manage the enrollment process for the program, not that that contributes to some of the increase in cost, although we're projecting that to be back down significantly this year.

COMMISSIONER BRISÉ: Okay. Thank you.

CHAIRMAN GRAHAM: Mr. Floyd, I've got a couple of questions for you. The first one, tell me about your landlord/renter customer incentive program.

THE WITNESS: Okay, sure. That was a program that we introduced in 2010 really as a way to try and address what I think was referred to earlier as a split incentive that occurs sometimes in the landlord/renter marketplace, where a landlord or a property owner may be hesitant to make an investment in an energy efficiency project because they don't really realize the benefits.

On the flip side, the tenant, who is paying the bill in many cases, you know, doesn't have the ability to make the investment to help them save on their bill.

So that program was put in place to give us

the flexibility to find maybe unique kind of customized solutions to situations like that. So throughout the last few years, we have focused specifically in that market and looked for ways to bring solutions to projects that would overcome that split incentive barrier.

That's kind of the concept of the program. It's structured as a custom program to give us flexibility to kind of take each project on a case-by-case basis.

My recollection is that while we've had a lot of success in having projects installed in multifamily, we've been able to do it without having to leverage the custom nature of that program so much. So we've just been able utilize some of our other incentive programs to realize those projects or to bring those to fruition.

CHAIRMAN GRAHAM: I know you said you've had a lot of success, but unless I'm looking at some wrong numbers, I just show that you have one participant.

THE WITNESS: Well, that's what I'm saying. We've had a lot of success. It's not reflected in that program because we've been able to utilize the other programs. So they're showing up as

participants in our other programs, like our HVAC program, our programs for windows, for example.

I can remember a project where we worked with a multifamily complex to change a lot of refrigerators, and those were all enrolled through our appliance program, so they didn't show up as enrollments in the landlord/renter program.

CHAIRMAN GRAHAM: Okay. Let's go through the one you just mentioned. How were those customers or landlords identified?

THE WITNESS: We went out and looked for them. Knowing that that was a segment of our customer base which faced that split incentive barrier, we went out and looked for those kinds of opportunities to bring our efficiency programs to those landlords and property managers and promote to them the benefits that they could offer to their tenants by renting with them in a more energy efficient property and some of the other benefits they could realize just in terms of better climate control of properties and that sort of thing.

CHAIRMAN GRAHAM: Are these new multifamily units you're talking about, or are these going through and replacing old refrigerators with new refrigerators?

THE WITNESS: There has been both. The refrigerator example was a retrofit project that was done, you know, to on an older property. But we've also worked with new properties to promote energy efficiency in their construction as a way of, you know, providing, frankly, kind of a competitive advantage to the property to be able to attract tenants, you know, because they know they're getting into a property that's going to save them money on their electric bill because it's built more energy efficient, that sort of thing. So we promote it in both ways.

CHAIRMAN GRAHAM: So the incentive -- in the example of the new multifamily unit, the incentive goes to the landlord or the contractor that built everything, and the renter is just benefiting from the fact that he's got high energy efficient appliances?

THE WITNESS: They're benefiting in the bill savings; right. That's correct.

CHAIRMAN GRAHAM: Okay. The other program -- another program, energy audit and education, what is that program?

THE WITNESS: Well, the energy audit program is one that's common to all the utilities. That's

the program that we offer to all of our customers to go either into their home, to evaluate their energy situation. Sometimes that's the result of a customer that calls into our call center maybe, you know, with a bill inquiry or interested in information about energy efficiency. We can go to their home, evaluate their home, make recommendations to them about things that they could do, and those would range from things like, you know, adjusting the temperature on your water heater, to settings or recommendations on thermostat settings for your heating and cooling system, to adding insulation. So it kind of ranges from things that are no cost or low cost to do, more behavioral types of things, all the way up to investments that they can make. We also provide that to customers as an Internet, you know, online audit. So that's kind of the scope of the audit program.

The education program has several pieces to it. One is a school-based piece where we go into classrooms in, I believe, the middle school range and work with the curriculum coordinators where they're addressing the energy part of the curriculum, and work with them on providing

information about energy efficiency and various energy sources, including renewables, to help educate our younger kids who are going to be customers of their own, you know, as they grow older. That program also provides opportunities to go and -- we do a lot of home expos and things like that where we may go set up booths and have collateral materials there and talk to customers about energy efficiency and give them advice and recommendations, you know, because especially in those kinds of shows, people are generally there because they're either going to be building a home or they're going to be renovating their home, and so their interest is kind of piqued for those types of things.

We also do a lot of community groups, low-income groups. We've done low-income groups. Not too long ago we had a situation where we had Section 8 housing in Pensacola that was being converted from a -- to where -- the property owner was paying all the bills. They were transitioning everything to where the tenants were going to be paying the electric bill. So we went and we hosted information sessions to educate those customers about, okay, now you're going to be -- the bills --

you know, you're going to be paying the bill, so here's some information and some education about how to manage your bill, again making recommendations about thermostat settings and those kind of things, and the types of things that affect your power bill. So the education really kind of incorporates all those kinds of components.

CHAIRMAN GRAHAM: You mentioned you have a -- I guess I would call it more of a self-audit on the Internet?

THE WITNESS: Yes, sir.

CHAIRMAN GRAHAM: And you said there's also an in-home audit?

THE WITNESS: That's correct.

CHAIRMAN GRAHAM: Is there a charge at all for the in-home audit?

THE WITNESS: No, there's no charge for that.

CHAIRMAN GRAHAM: All right. That's all the questions I have. Any more from Commissioners?

Commissioner Brisé.

COMMISSIONER BRISÉ: One last question in terms of sort of a broad look at how your company looks at efficiency and so forth. Is there any kind of promotion to consumers to look at things such as Nests and things like that so that they can

take some ownership for that at rates which may not be that much?

THE WITNESS: Yes, there is. And actually, Nest, we're doing a little study on the Nest thermostats really to try to determine are the savings projections or the savings claims made by the manufacturer, are those reasonable for customers that are in Northwest Florida. And so really, the way we've approached that is, you know, to be able to give customers good advice about that -- maybe we're in a home doing an audit and a customer asks about a Nest thermostat. And by having evaluated it, we can give them good advice about what they could reasonably expect to save. So, yes, that's a good example of how we would do that.

COMMISSIONER BRISÉ: Thank you.

CHAIRMAN GRAHAM: Okay. Redirect.

MR. GRIFFIN: No redirect.

CHAIRMAN GRAHAM: Okay. Exhibits.

MR. GRIFFIN: We would move Exhibit 46 for Mr. Floyd.

CHAIRMAN GRAHAM: Okay.

(Exhibit 46 was admitted into the record.)

CHAIRMAN GRAHAM: We have 191. Who was that?

MR. GUEST: SACE. We have 191 through 195 -- 4, 191 through 194.

MR. FINNIGAN: Your Honor, we have 195.

CHAIRMAN GRAHAM: Okay. 191 through 193, I think you had. No, 194. 194; correct.

MR. GUEST: 194.

CHAIRMAN GRAHAM: Any objection?

MR. GRIFFIN: Not to 191 to 194, no, Mr. Chairman.

(Exhibits 191 through 194 were admitted into the record.)

CHAIRMAN GRAHAM: Okay. Now, EDF has 195. Any objection?

MR. GRIFFIN: I think we would object to that exhibit. That is a Georgia Power document. Mr. Floyd indicated that he was not familiar with it. He is not a Georgia Power employee. He's not testifying on behalf of Georgia Power. So I fail to see the relevance of that document for purposes of the record here.

MR. FINNIGAN: Your Honor, I submit that the document is self-authenticating because it came from the Southern Company's own website. And there would be a number of rules of evidence under which it would be admissible, such as -- an admission

against interest would be the primary one, and it would also be reports of regularly conducted activity that the company reports on and puts out on the Internet.

It's similar to the U.S. Department of Energy Internet report that is -- that was earlier admitted into evidence. That was by a different government agency. This is by Gulf Power's parent company itself, so it has more indicia of credibility and reliability than something by another government agency when it's by the same company. So I would submit that are many rules of evidence by which this should be admissible.

CHAIRMAN GRAHAM: Me just looking at this piece of paper that you have, I guess I have several questions or concerns, the first one because -- I think you said it yourself. This is not a government entity. This is a private company, number one.

Number two, I don't know what this document is. I don't know if this is a press release. I don't know if this is something that was released by the EPRI people, if this is something that was released by Georgia Power. I don't know if this second page is page of 2 of 2. Is it page 9?

There's two pages here, and I don't know if there's anything missing between page 1 and page 2.

So I -- I think there's a lot of questions here. I will defer to my attorney for advice, but --

MR. GUEST: Mr. Chairman, may I weigh in on this just in aid of the Commissioners?

CHAIRMAN GRAHAM: I will hear your opinion.

MR. GUEST: Just thoughts on some of those points. It does show that it's Southern Company at the bottom, so you do get that as the authorship.

On the issue of incomplete document, I think that's the whole document rule, which is that if any part of a document is submitted, an opposing party has an opportunity to put any other part of the document that they believe in fairness ought to be included, but that there is not a basis to exclude a document on the ground that it isn't complete.

And I believe too -- maybe I wasn't following carefully enough, but I think this might qualify as corroborative of other testimony that would fall within the ambit of the rules applicable, just in Chapter 120 I referred to earlier, 120.57(1)(c).

Those are just thoughts to share with you in

making this decision.

CHAIRMAN GRAHAM: My further concern with this is that because when the question was asked, the witness said, "I'm not familiar with the study. I don't know what they're doing in Georgia." Just because his parent company does it with the Georgia Commission, how is that relevant to what you're currently doing with the Florida Commission?

Mary Anne.

MS. HELTON: As I said, I think this morning with respect to the Department of Energy website, this is, I think, a gray area with respect to whether website pages are admissible or not. I felt more comfortable with the government website.

Here, Georgia Power is an affiliate company. I don't -- I know that there is a relationship between the affiliates and Southern Company. I'm really quite honestly not sure what the relationship is between the sister companies themselves.

The witness did say he was not familiar with the project. I think it was called a project for solar power in Georgia.

I think you could lean either way. I hear your concerns, and I think it would be appropriate

for you not to admit this document into evidence.

MR. FINNIGAN: Your Honor, may I be heard just on one point?

CHAIRMAN GRAHAM: Sure.

MR. FINNIGAN: We could probably, resolve this very simply by just submitting a late-filed exhibit, and the late-filed exhibit would be a request for admission to Gulf Power that -- do you admit that this document is from the Southern Company website?

MR. GRIFFIN: And we would object to that for a variety of reasons. First of all, discovery closed a long time ago. And we're not disputing that this is a document from the Southern Company. What we're suggesting is that it has no relevance to this case whatsoever, and a foundation has not been laid for it. This witness is not familiar with it, and it's not a Gulf Power Company document.

CHAIRMAN GRAHAM: All right. We're not going to put this in. Let's move on to -- I think we're done to this witness. Let's move on to the EDF witness.

MR. FINNIGAN: Your Honor, we would like to call Dr. James Fine to the stand.

Your Honor, Dr. Fine has not been sworn yet.

CHAIRMAN GRAHAM: Dr. Fine, how are you?

THE WITNESS: Very good.

CHAIRMAN GRAHAM: If I can get you to stand and raise your right hand. Do you hereby swear or affirm that the testimony you give here in this hearing is true?

THE WITNESS: I do.

CHAIRMAN GRAHAM: Thank you.

Thereupon,

JAMES FINE

was called as a witness on behalf of Environmental Defense Fund and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. FINNIGAN:

Q. Dr. Fine, by whom are you employed, and in what capacity?

A. Environmental Defense Fund. I'm the director of energy research and a senior economist.

Q. And for the record, can you state your full name an business address?

A. My name is James David Fine, and my business address is 123 Mission Street, San Francisco, California, 94107.

Q. Did you cause direct prefiled testimony to be filed in this docket?

A. Yes.

Q. If I were to ask you the same questions today, would your answers be the same?

A. Yes.

MR. FINNIGAN: Your Honor, I would like to move that Dr. Fine's testimony be admitted into the record.

CHAIRMAN GRAHAM: We will enter Dr. Fine's testimony into the record as though read.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

ENVIRONMENTAL DEFENSE FUND

DIRECT TESTIMONY OF DR. JAMES FINE

DOCKET NOS. 130199-EI, 130200-EI, 130201-EI & 130202-EI

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is James Fine. My business address is Environmental Defense Fund, 123 Mission Street, 28th Floor, San Francisco, California 94105.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed as Director of Energy Research and Senior Economist, Clean Energy Program by the Environmental Defense Fund ("EDF").

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I received my B.S. in Economics from the University of Pennsylvania Wharton School in 1989, and my Ph.D. from the University of California Berkeley, Energy and Resources Group, in 2003. I have over 20 years of experience working in the field of energy economics, with over the last three years spent primarily on clean energy issues. I consulted with M.Cubed and Envair from 1994 to 2007 and was an assistant and adjunct professor at the University of San Francisco. Since 2009, I have worked closely with the California Public Utilities Commission and with the California investor-owned utilities on many clean energy issues, including resource planning, energy efficiency and demand response, renewable energy and smart grid deployment. I serve as lead economist in EDF's work on smart clean energy policies.

Q. WHAT ARE YOUR RESPONSIBILITES AS DIRECTOR OF ENERGY RESEARCH AND SENIOR ECONOMIST, CLEAN ENERGY PROGRAM FOR ENVIRONMENTAL DEFENSE FUND?

A. I am responsible for developing and supporting policies and practices that appropriately value energy goods and services.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I offer testimony to inform the decision analyses used by the Commission in setting goals for the Florida Energy Efficiency and Conservation Act ("FEECA"), and to improve the realized cost-effectiveness of programs to encourage "promoting an increased use of renewable energy resources and low-carbon emission electric power plants." At the heart of my comments is my conclusion, based on a wealth of reliable evidence, that continued and enhanced investment in distributed solar photovoltaic ("PV") programs is good policy for Florida. I observe that program cost-effectiveness evaluations thus far have been too conservative because they are insufficiently inclusive of all costs and benefits. As well, I offer a variety of recommendations to support market momentum for distributed solar PV, while evolving the program to enable it to equitably achieve scales of significance.

I observe that cost trend for distributed residential and small commercial solar PV is converging quickly on cost parity with retail electricity rates. Once average electricity rates exceed the costs of distributed solar PV, adoption rates in Florida are very likely to follow those of California, Hawaii, North Carolina, among other states, which have experienced greater than 30% per annum growth in installed solar PV capacity over the past several years.

I recommend several strategies to both continue to provide avenues for low-cost distributed solar PV to reach the marketplace, and for incentives to ratchet downward as capital costs continue to decline while keeping in place funds to support distributed solar PV investments by vulnerable or other special needs electricity customers.

I provide recommendations about how to more accurately and equitably account for the costs and benefits of clean renewable energy resources. In pursuit of a more comprehensive representation of distributed solar PV values, I comment on the forecasted values for carbon dioxide compliance costs used by the utilities in developing their conservation plans. I also make several recommendations regarding the utilities' distributed solar PV programs, including strategies to enhance the cost-effectives of programs and a recommendation for the Commission to develop a more comprehensive method for valuing distributed solar PV resources using a full "value of solar" (VOS) analysis. Under this approach, the Commission would identify all the costs and benefits attributable to distributed solar PV generation and develop a value for each element of cost and benefit, the net result representing the value of distributed solar PV generation.

The value calculated for distributed solar PV using a VOS method can inform a variety of decisions for all actors in the utility sector: regulators, utilities, third-party service providers and utility customers. For utilities submitting applications to public service commissions, and for the commissions themselves, the VOS net and associated components will be useful for benchmarking and cost-effectiveness evaluations. For customers, third parties and innovators, the VOS will be a clear price signal. For meeting state and federal goals, and avoiding the effects of climate change, the VOS is a payment

mechanism which will enable clean distributed PV solar to get to significant scales of quickly and fairly.

Finally, I recommend that the Commission consider developing a pilot program where the utilities would be able to invest in and earn a return on distributed solar PV programs, as an incentive to make greater investments in these programs.

Q. PLEASE EXPLAIN THE BACKGROUND OF THIS PROCEEDING.

A. The purpose of this proceeding is for the Commission to set numeric goals for the Florida utilities under FEECA. The Commission is required under Section 366.82, Florida Statutes to adopt goals to increase the efficiency of energy consumption, reduce and control the growth rates of electric consumption and weather-sensitive peak demand, and "encourage" development of demand-side renewable energy resources. The statute requires the Commission to review a utility's conservation goals no less than every five years. The statute was amended in 2008 to direct the Commission to include goals "to encourage development of demand-side renewable energy resources." Section 366.82(2), Florida Statutes.

II POLICY OBJECTIVES

Q. WHAT POLICY OBJECTIVES SHOULD THE COMMISSION CONSIDER IN DECIDING WHETHER TO APPROVE A DEMAND-SIDE RENEWABLE ENERGY RESOURCES PLAN IN THE UTILITY CONSERVATION PLANS?

A. There are six policy goals for the Commission to consider in addition to ensuring Florida consumers receive electricity in a safe, adequate and reliable manner:

1. Encourage development of zero-carbon demand-side renewable energy resources as required by Section 366.82(2), Florida Statutes.

2. Conform to the State Comprehensive Plan.
3. Design programs which may help Florida comply with the recently reinstated EPA Cross-State Air Pollution Rule and the EPA's upcoming greenhouse gas ("GHG") pollution standards for existing fossil fuel plants.
4. Consider the costs and benefits of any distributed solar PV program per FEECA. Section 366.82(3), Florida Statutes.
5. Take actions to avoid the effects of climate change and put Florida on a trajectory to bring GHG emissions to 1990 levels by 2050
6. Prepare the energy system – and its users – for "circumstances of disrupted energy supplies or unexpected price surges".

Q. WHAT PROVISIONS OF THE STATE COMPREHENSIVE PLAN RELATE TO A DEMAND-SIDE RENEWABLE ENERGY RESOURCE PLAN?

A. The State Comprehensive Plan was amended in 2008 to specifically include an objective to increase low-carbon resources. The relevant sections of the State Comprehensive Plan are set forth below, with the 2008 amendment language in capital letters, as contained in Section 187.201, Florida Statutes:

> (10) AIR QUALITY.—
>
> (a) Goal.--Florida shall comply with all national air quality standards by 1987, and by 1992 meet standards which are more stringent than 1985 state standards.
>
> (b) Policies.—
>
> 1. Improve air quality and maintain the improved level to safeguard human health and prevent damage to the natural environment.
>
> * * *

3. Reduce sulfur dioxide and nitrogen oxide emissions and mitigate their effects on the natural and human environment.

4. Encourage the use of alternative energy resources that do not degrade air quality.

5. Ensure, at a minimum, that power plant fuel conversion does not result in higher levels of air pollution.

6. ENCOURAGE THE DEVELOPMENT OF LOW-CARBON-EMITTING ELECTRIC POWER PLANTS.

(11) ENERGY.—

(a) Goal.--Florida shall reduce its energy requirements through enhanced conservation and efficiency measures in all end-use sectors AND SHALL REDUCE ATMOSPHERIC CARBON DIOXIDE BY, while at the same time promoting an increased use of renewable energy resources AND LOW-CARBON-EMITTING ELECTRIC POWER PLANTS.

(b) Policies.—

1. Continue to reduce per capita energy consumption.

2. Encourage and provide incentives for consumer and producer energy conservation and establish acceptable energy performance standards for buildings and energy consuming items.

* * *

5. Reduce the need for new power plants by encouraging end-use efficiency, reducing peak demand, and using cost- effective alternatives.

6. Increase the efficient use of energy in design and operation of buildings, public utility systems, and other infrastructure and related equipment.

7. Promote the development and application of solar energy technologies and passive solar design techniques.

* * *

9. Promote the use and development of renewable energy resources AND LOW-CARBON-EMITTING ELECTRIC POWER PLANTS.

10. Develop and maintain energy preparedness plans that will be both practical and effective under circumstances of disrupted energy supplies or unexpected price surges.

Q. ARE YOU AWARE OF ANY OTHER POLICY CONSIDERATIONS WHICH APPLY?

A. Yes, in enacting FEECA, the Florida legislature stated: "Since solutions to our energy problems are complex, the Legislature intends that the use of solar energy, renewable energy sources, highly efficient systems, cogeneration, and load-control systems be encouraged." Section 366.81, Florida Statutes.

Q. HOW MIGHT FLORIDA BE ABLE TO USE A DEMAND-SIDE RENEWABLE RESOURCES PROGRAM AS A COMPLIANCE TOOL UNDER U.S. EPA REGULATIONS?

A. On April 29, 2014, the United States Supreme Court reinstated the U.S. EPA's Cross-State Air Pollution Rule. *Environmental Protection Agency v. EME Homer City Generation, L.P.*, Case Nos. 12-1182 and 12-1183 (Opinion and Order) (April 29, 2014). This ruling means that fossil fuel generators in Florida may face additional compliance obligations with respect to ozone and particulate matter ("PM") precursor pollutant emissions. Enhancing distributed solar PV resources could provide an additional avenue by which utilities could mitigate their compliance obligations because (a) load-side strategies can be geared to avoid using the most emissions intensive resources, thereby providing additional flexibility to the generator, and (b) conservation and self-generation will reduce to load served by fossil fuel generators to inherently limit cost risks associated with compliance. Investments in utility-scale low and zero-carbon generation resources in pursuit of renewable portfolio standard requirements will also avoid

investments in new fossil fuel generation that produces ozone precursors and both primary and precursor PM emissions.

In addition, the EPA will soon issue new GHG standards for existing fossil fuel plants and Florida may be able to use its renewable energy policies as an important compliance tool. Florida would be wise to hedge against the compliance cost risks from new EPA GHG standards by enacting policies that encourage zero carbon distributed solar PV programs, as well as other demand-side programs such as energy efficiency and demand response. These programs may increase the options available to fossil fuel generators to comply with new EPA GHG standards.

On June 25, 2013, President Obama issued a Presidential Memorandum directing the EPA to issue GHG emission rules for fossil fuel power plants. The EPA has already issued GHG emissions rules for new fossil fuel plants. The Presidential Memorandum directs the EPA to issue the new rules for existing fossil fuel power plants by June 1, 2014 and to finalize the rules by June 1, 2015. States will be required to submit state plans implementing the standards in compliance with the guidelines by June 30, 2016. EPA officials and industry and non-governmental/environmental stakeholders have been discussing the methods available for states to comply with these standards. There has been widespread discussion among the stakeholders that the EPA framework should be flexible and accommodate the successful deployment of renewable energy, distributed generation, and demand-side energy efficiency at the state level which has secured significant reductions in carbon pollution – and that the EPA framework should facilitate further deployment of these cost-effective strategies to secure the carbon pollution reductions required by EPA's guidelines.

Based on these discussions, it appears that states may be able to use renewable energy and demand-side management policies and carbon reductions to comply with the new carbon pollution standards for existing fossil fuel power plants. With clear foresight that new rules for GHG emissions are on the horizon, it is imperative to utilize all available cost-effective clean energy resources now, and to plan for it at scales of significance. Florida utilities' future compliance costs can be mitigated by putting strong, scalable clean energy policy in place now.

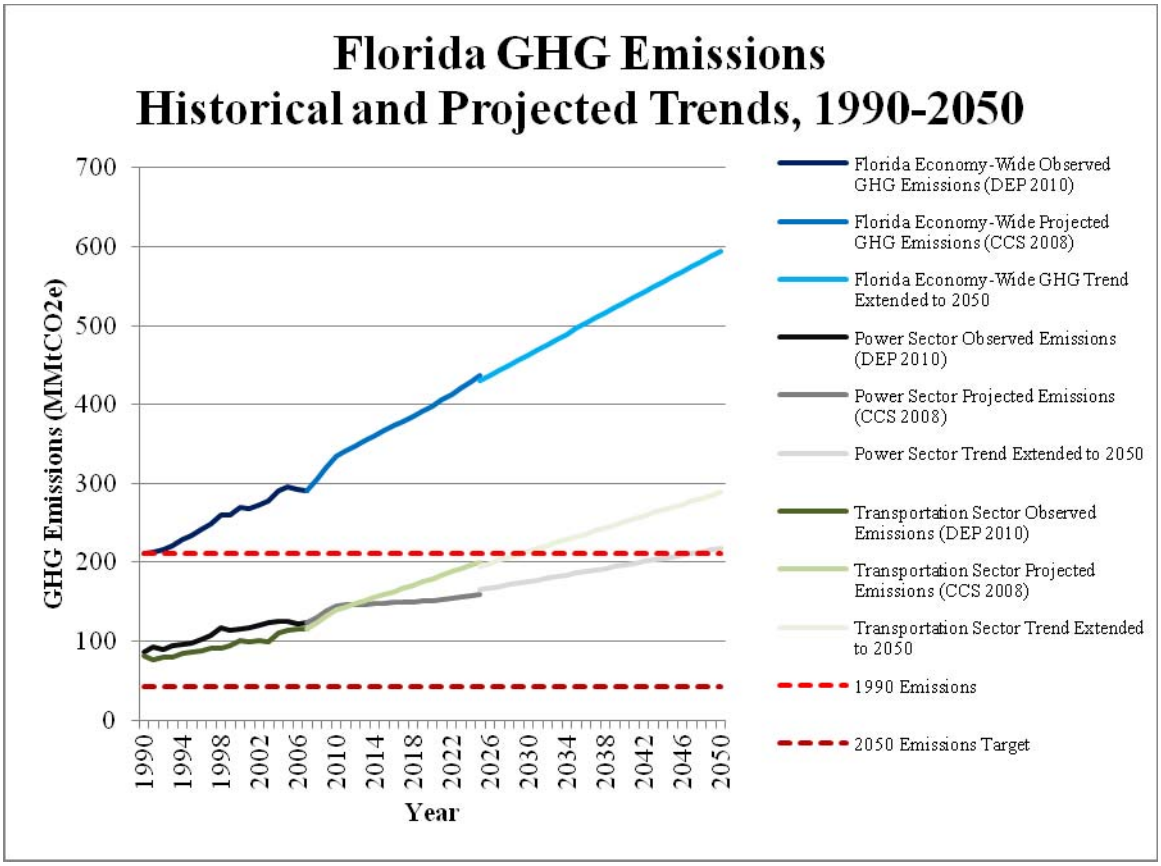
Q. HOW IMPORTANT WOULD IT BE FOR FLORIDA IF STATES ARE ALLOWED TO USE THEIR RENEWABLE ENERGY AND DEMAND-SIDE MANAGEMENT POLICIES TO COMPLY WITH THE NEW GHG EMISSIONS RULES?

A. It would be very important. According to the U.S. Energy Information Administration, Florida ranks as the fifth highest state in the country for carbon emissions from fossil fuel plants. U.S. EPA, *State and Local Climate and Energy Program: State Energy CO2 Emissions.* If Florida can use renewable energy policies and demand-side management policies to comply with these rules, these mechanisms will provide another set of tools to mitigate rate impacts and could be evaluated against alternative compliance strategies for cost-effectiveness.

The following graph shows historical trends, near-term forecasts, long-term trajectories and GHG stabilization goals for Florida. Clearly, recent trends within both the energy sector and the broader Florida economy are not on target to meet GHG emissions cap goals for 2030 or 2050 that are in line with scientific consensus about "stabilization" levels of emissions. Indeed, in 2007 Governor Crist and the state

legislature acknowledged these goals, eventually establishing a 2050 target of 80% below 1990 levels.

For Florida to have any feasible pathway toward stabilization would require significant de-carbonization of the electricity sector while electrifying the transportation sector. Recent emissions trends suggest that the state is going in the wrong direction as emissions are rising. If emissions continue to rise at the current trajectory then emissions will be closer to 600 MMtCO2e, about 15 times more than needed stabilization levels. In fact, current trajectories indicate that emissions from the energy sector or transportation sector would alone will surpass economy-wide emissions in 1990 and are already well above the economy-wide 2050 goal.



Q. ARE GREENHOUSE GAS EMISSIONS FROM FOSSIL FUEL PLANTS HAVING AN IMPACT ON FLORIDA?

A. Yes. The recently released National Climate Assessment (available at http://nca2014.globalchange.gov/report) (last viewed May 10, 2014) reports on the impacts of climate change on the United States, now and in the future. This report was prepared by a team of more than 300 experts guided by a 60-member Federal Advisory Committee and was extensively reviewed by the public and experts, including federal agencies and a panel of the National Academy of Sciences. The report describes numerous impacts of climate change on Florida. One noteworthy impact is sea level rise. The report states that the global sea level has risen about eight inches since reliable record keeping began in 1880, and is projected to rise another one to four feet by 2100. This has resulted in a new condition known as "sunny day flooding" in parts of Florida, particularly Miami Beach, where inland flooding occurs from sea level rise, without any rain. A recent New York Times article describes this phenomenon. *Miami Finds Itself Ankle-Deep in Climate Change Debate* New York Times (May 7, 2014) (available at: http://www.nytimes.com/2014/05/08/us/florida-finds-itself-in-the-eye-of-the-storm-on-climate-change.html?_r=1) (last viewed May 9, 2014). These are recent findings but they corroborate growing evidence, such as research by the Florida Oceans and Coastal Council (see http://www.floridaoceanscouncil.org/reports/Climate_Change_and_Sea_Level_Rise.pdf) (last viewed May 15, 2014).

III. FORECASTS OF CARBON DIOXIDE COMPLIANCE COSTS USED IN THE UTILITIES' MODELING

Q. DID YOU REVIEW THE UTILITIES' FORECASTS OF CARBON DIOXIDE COMPLIANCE COSTS USED IN THEIR MODELING?

A. Yes.

Q. WHAT COMMENTS DO YOU HAVE ABOUT THE VALUES THE UTILITIES USED IN THEIR FORECASTS OF CARBON DIOXIDE COMPLIANCE COSTS?

A. In my opinion, the utilities' forecasts were too low. For example, in Dr. Sims' forecast at Exhibit SRS-7, he forecasts carbon dioxide compliance costs of zero through 2021, then relatively low levels of compliance costs beginning in 2022. Yet a study entitled *Analysis of the Impact of The President's Climate Action Plan on the Cost of Electricity in Florida* (September 25, 2013) presented to the National Association of Regulatory Utility Commissions and attached as Exhibit JF-1 states at page 6 that the forecasted compliance costs for FP&L are $238 million by 2020 and $249 million by 2021, and increasing steadily thereafter. This most recent study is one of many indicating that Florida will experience very high costs from global warming and that fast actions, along with action at the global scale, can avert these impacts. For another example, see work by Stanton and Ackerman, and included as Attachment JF-2 (http://www.floridaoceanscouncil.org/reports/Climate_Change_and_Sea_Level_Rise.pdf) (last viewed May 15, 2014). In addition to forecasting billions of dollars in lost tourism revenue, land loss and ecosystem destruction from sea level rise and more damage from hurricanes, they forecast increased demand for electricity, mostly to stay cool in a warming climate.

> High temperatures will increase demands for **electricity**, primarily to supply air conditioning. The extra power plants and the electricity they generate are not cheap; the annual costs of inaction are $5 billion in 2050 and $18 billion in 2100, as reported in Table ES-1 above. The same temperature increases will also degrade the performance of power stations and transmission lines, making them operate less efficiently; partly as a result, every additional degree Fahrenheit of warming will cost consumers an extra $3 billion per year by 2100. Increased demand for electricity also has severe implications for water resources, as all coal, oil, gas, and nuclear power plants must be cooled by water. The business-as-usual case will only intensify Florida's looming **water** crisis…" (pg. vii)

I therefore recommend that the utilities re-run their alternative scenarios for their conservation plans using more comprehensive carbon compliance forecasts. One approach the Commission may adopt to encourage distributed solar PV resources is to represent the full costs borne by society when carbon and other greenhouse gases are emitted. The EPA and White House have recently revisited guidance on the appropriate value to use in representing the social costs of carbon and arrived at values shown in the table that appropriate depend on an individual's choice of discount rate, as shown in the table below.

(http://www.whitehouse.gov/sites/default/files/omb/inforeg/social_cost_of_carbon_for_ria_2013_update.pdf) (last viewed May 15, 2014).

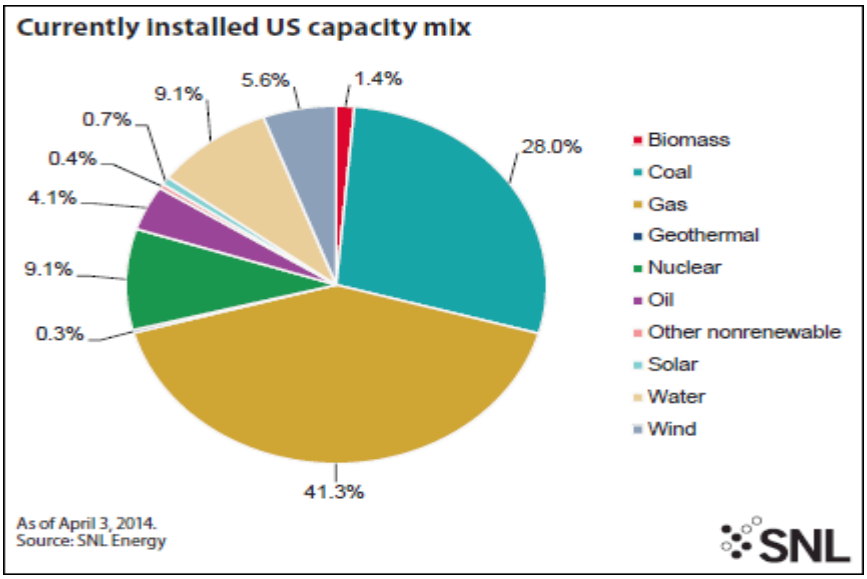
Revised Social Coast of CO_2, 2010-2050 (in 2007 dollars per metric ton of CO_2)

Discount Rate Year	5.0% Avg	3.0% Avg	2.5% Avg	3.0% 95th
2010	11	33	52	90
2015	12	38	58	109
2020	12	43	65	129
2025	14	48	70	144
2030	16	52	76	159
2035	19	57	81	176
2040	21	62	87	192
2045	24	66	92	206
2050	27	71	98	221

IV. TRENDS IN SOLAR GENERATION

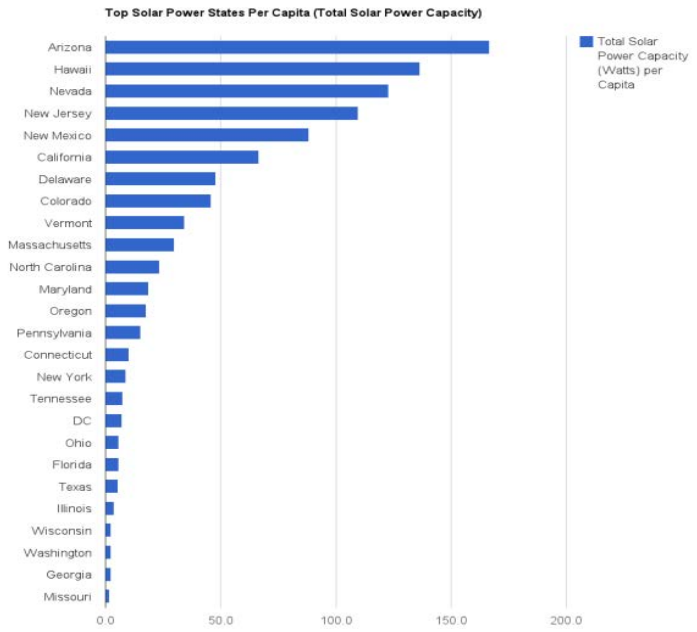
Q. HOW MUCH SOLAR CAPACITY IS THERE IN THE U.S. TODAY?

A. Solar currently makes up less than one percent of the installed generating capacity in the U.S., as shown below:



Q. WHERE DOES FLORIDA RANK IN SOLAR GENERATION COMPARED TO OTHER STATES?

A. Florida ranks near the bottom among states in solar capacity per capita, as shown below:



Source: http://cleantechnica.com/2013/06/25/solar-power-by-state-solar-rankings-by-state/ (last visited May 9, 2014).

Q. WHAT ARE THE COST TRENDS FOR DISTRIBUTED SOLAR PV GENERATION AND THE VALUE PROPOSITION FOR SOLAR PV INVESTMENT

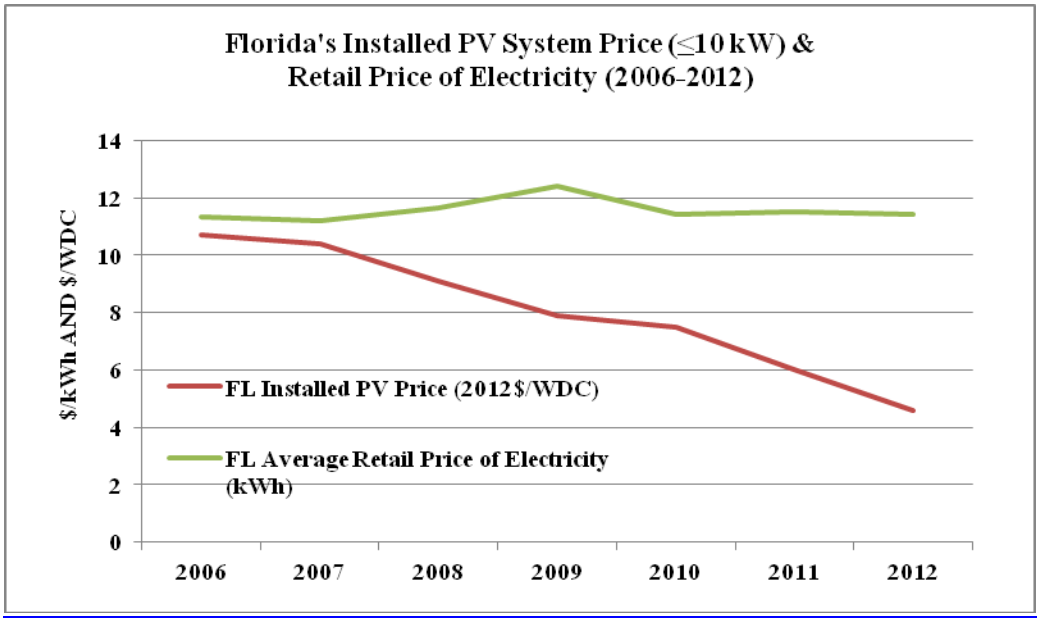
A. According to the Interstate Renewable Energy Council, *Annual Update and Trends:*

> **Lower Installed Costs.** The total installed cost for distributed installations fell 12 percent in 2012 and has fallen 33 percent over the past three years. The cost decline is even greater for utility installations. Falling module costs is the primary reason for the cost declines, but all cost components have fallen, including inverter costs and soft costs such as permitting.

The other side of the solar PV investment equation is the cost of electricity from the traditional sources. While distributed solar PV costs have been declining precipitously, electricity rates, demand and thus monthly bills have been climbing. According to EIA data, in 2012, the average price for electricity in Florida was $11.42 per kWh, which is the 22nd highest price for electricity in the US (the average price was $12.30). However,

with relatively high consumption (1,080.821 kWh per month), the average monthly utility bill for Florida residents ranked 9th in the country ($123.45), and it has grown quickly. . The average monthly bill in 2012 by contrast was $105.86. See graph below and attached. (Source: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCkQFjAA&url=http%3A%2F%2Fwww.eia.gov%2Felectricity%2Fsales_revenue_price%2Fpdf%2Ftable5_a.pdf&ei=7NB0U5nyE4ijsQTtx4HgBg&usg=AFQjCNE5g9aPKKuqdIp5VbpaCUlJ2XNwQw&sig2=c6g3lQMD8znZ4CuCcs_16Q&bvm=bv.66917471,d.cWc) (last viewed May 15, 2014).

The point at which electricity rates from the utility exceed the levelized cost of installed distributed solar PV will signal when incentives are no longer necessary for the average utility customer. While special types of customers may merit consideration for additional funding assistance to "go solar," a system-wide incentive program available to all customers will be obviated. Forecasts informed by recent trends indicate distributed solar PV will achieve cost parity before the end of this decade in Florida. The graph below shows that the installed cost of small-scale (*i.e.*, less than 10 kilowatt capacity) distributed solar PV is well below the bundled retail rate (which of course includes more than just the cost of energy).



IV. RESULTS OF FLORIDA DISTRIBUTED GENERATION PILOT PLAN

Q. DID YOU REVIEW THE UTILITIES' FILINGS REGARDING THEIR DISTRIBUTED SOLAR PV PILOT PROGRAMS?

A. Yes.

Q. HOW MUCH DID THE DISTRIBUTED SOLAR PV PROGRAMS COST?

A. The utility witnesses reported cost decreases during the three years the distributed solar PV programs were in effect, as shown below (prices are per watt; "C" denotes combined residential and commercial costs; "R" denotes residential cost):

Company	2011	2013
FP&L (R)	$5.40	$4.10
Duke (R)	$6.31	$5.19
TECO (C)	$5.50	$3.419
Gulf Power (C)	$5.54	$3.42

Q. HOW DID CUSTOMERS RESPOND TO THE DISTRIBUTED SOLAR PV INCENTIVES?

A. The utility witnesses also reported that they paid $2.00/watt incentive for the residential PV solar program and a sliding scale incentive for the commercial PV solar program. The utilities reported that these incentives are subscribed by customers very quickly after the enrollment period begins. In fact, the Commission's February 2014 *Annual Report on Activities Pursuant to the Florida Energy Efficiency and Conservation Act* states at p. 23:

> Many of the programs offering rebates for installing residential solar PV systems were subscribed to capacity just hours after approval, demonstrating high customer demand for subsidies for this type of solar technology. The subscription rate additionally implies that financial incentives offered to customers who install PV systems could still be effective, even at a reduced incentive level.

Earlier in my testimony I provided information about trends for both retail electricity rates and residential scale distributed solar PV. Clearly, these trends favor increased investments in distributed solar PV. It is no wonder the utilities have experienced very strong customer interest in the incentive program. It is also obvious that the amount of incentive for average or above-average electricity consuming homes can be ratcheted downward over time.

Q. WHAT PAYBACK PERIOD DID THE COMPANIES USE TO DETERMINE THE COST-EFFECTIVENESS OF THESE PROGRAMS?

A. The Companies stated that they used a two-year payback period.

Q. HOW DID THE COMPANIES VALUE THE DISTRIBUTED SOLAR PV SYSTEMS FOR PURPOSES OF THEIR COST-EFFECTIVENESS ANALYSIS?

A. The Companies used the installed capacity cost of the PV solar units to determine the cost-effectiveness of the program.

V. RECOMMENDATIONS

Q. WHAT RECOMMENDATIONS DO YOU HAVE FOR THE COMPANIES' DISTRIBUTED SOLAR PV PROGRAMS?

A. I recommend that the Companies continue with their existing distributed solar PV programs at least at the same level of total program funding established by the Commission in the 2009 case but with a goal toward ratcheting the incentive for average, non-special needs customers downward as installed distributed solar PV grows. One good example of an adaptive incentive program for rooftop solar is provided by California's Solar Initiative. I also recommend that the Companies make several enhancements to their programs, as discussed in more detail below. I also recommend that the Commission consider implementing a utility-owned commercial rooftop PV program, as an incentive for utilities to make greater investments in distributed PV solar generation, and provide a competitive bidding system for distributed solar PV companies as a means to use competitive pressure to bring down bids while enabling utilities to "certify" solar PV installers for the benefit of risk-averse customers looking into a self-generation investment.

Q. PLEASE DESCRIBE THE CHANGES YOU RECOMMEND FOR THE COMPANIES' DISTRIBUTED SOLAR PV PROGRAMS.

A. I recommend that the Companies make the following changes: (1) test competitive bidding practices by conducting a utility-sponsored request for proposals ("RFP"); (2) develop a plan for adjusting the level of incentives as distributed solar PV achieves cost

parity; (3) use a longer payback period to measure cost-effectiveness; (4) implement on-bill repayment to reduce the financing costs; and (5) use a different valuation method which reflects the full costs and benefits provided by distributed PV solar.

With respect to my fifth recommendation, I advise that Florida should undertake a process similar to Minnesota's to review options and provide guidance on the best method to value distributed solar PV (and, by extension, other distributed energy resources ("DER")). This approach is the best way to maximize cost-effective DER in the near term without compromising equity standards because it has the potential to minimize cross-subsidization between the with and without distributed solar PV customers. The VOS method adopted in Minnesota has the potential to achieve scales of significance, whereas net energy metering and other more simplistic mechanisms may not be structured for high levels of penetration.

Q. PLEASE EXPLAIN YOUR RECOMMENDATION REGARDING COMPETITIVE BIDDING PRACTICES.

A. The utilities' programs are incentive-based programs. Customers who wish to participate in the programs select a developer to install a distributed solar PV system, and enroll with the utility's distributed solar PV program to receive an incentive payment. The incentive payment helps defray the customer's cost of installing a distributed solar PV system. The program could be augmented by creating a list of utility-certified installers. The utility could issue an RFP from developers to bid on the installation costs and financing terms to install distributed solar PV systems in the utility's service territory. The utility would select the bidders which offer the lowest and best terms without compromising on quality requirements. The utility's customers could select a developer from this list. This could

help drive down the costs of the distributed solar PV systems with both competitive pressures to inspire innovation and least-cost offerings and, once certified by the utility, lower costs of customer acquisition for the solar company.

Q. IS THERE ANY EVIDENCE THAT INTRODUCING COMPETITIVE BIDDING COULD HELP DRIVE DOWN THE PROGRAM COSTS?

A. Yes. Duke Energy Florida witness Helena Guthrie submitted Exhibit HG-16. This is a report of average residential and non-residential installed prices of solar PV systems by state for the fourth quarter of 2013. This report shows that the leading state for the lowest cost for residential solar PV systems is Wisconsin, with an installed cost under $3.00/watt. By contrast, the lowest cost the Florida utilities obtained for their distributed solar PV program for residential customers was FP&L's cost of $4.10/watt. This shows that the Florida utilities have a significant room for improvement in driving down the costs of their programs. One way to drive the costs down would be to introduce competitive bidding.

Q. PLEASE EXPLAIN YOUR RECOMMENDATION REGARDING ADJUSTING THE LEVEL OF INCENTIVES.

A. The utilities report that when they allow customers to enroll for incentive payments for the distributed solar PV systems, the incentives are fully subscribed within a very short time period, in some cases within hours after the enrollment period opens. This suggests that the incentives might be too high. The utilities should test using lower levels of incentives through a variety of means, including competitive bidding and careful tracking of installed PV capacity and costs. This is supported by the Commission's 2014 Annual Report on the FEECA program, which I discussed earlier in my testimony.

Q. PLEASE EXPLAIN YOUR RECOMMENDATION REGARDING USING A LONGER PAYBACK PERIOD TO DETERMINE THE COST-EFFECTIVENESS OF THE DISTRIBUTED SOLAR PV PROGRAM.

A. The utilities used a two-year payback period to determine the cost-effectiveness of the distributed solar PV program. Solar panels have a longer useful life than two years. For example, SunPower offers a 25-year warranty on its solar panels (*see* The SunPower Combined 25-Year Warranty, http://global.sunpower.com/products/solar-panels/warranty/) (last viewed May 10, 2014). Similarly, the California PUC recently proposed to establish a 20-year lifetime for solar PV projects currently enrolling into the net energy metering program. (*See* Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program and Other Distributed Generation Issues. CPUC, Rulemaking 12-11-005). I recommend that the utilities use a longer payback period to measure the program's cost-effectiveness that better aligns with the useful life of the distributed solar PV investment.

Q. PLEASE EXPLAIN YOUR RECOMMENDATION REGARDING ON-BILL REPAYMENT.

A. On-bill repayment ("OBR") can provide an opportunity for residential, commercial and industrial property owners to finance energy efficiency and distributed energy improvements with capital provided by non-utility third-party investors. Under OBR, a third-party investor, like a bank, loans money to a utility's customer to make one or more energy efficiency or distributed energy improvements. The loan is repaid through the customer's utility bill. The repayment obligation runs with the meter, meaning that it survives transfers in ownership and occupancy, which allows for longer term loans with

lower interest rates that better align with the payback schedules of investments. The program can work for single-family, multi-family, commercial and industrial buildings.

Q. WHAT BENEFITS WOULD AN OBR PROGRAM PROVIDE?

A. The benefits of OBR include:

- Customer access to lower-cost capital for energy efficiency or distributed energy improvements (OBR loans often come at lower interest rates because of the credit enhancing impact of tying the loan to the customer's utility bill);
- Acceleration of clean energy investments and emissions reductions;
- Deferral or elimination of new generation capacity and reduced use of higher-cost generation for ratepayers.
- No direct costs to taxpayers or ratepayers;
- Reduced program costs through a scalable platform and standardized processes; and
- Job creation.

Q. HAVE ANY OTHER STATES ADOPTED OBR PROGRAMS?

A. Yes. California, Connecticut, Hawaii and New York have adopted OBR programs.

Q. PLEASE EXPLAIN YOUR RECOMMENDATION REGARDING USING A DIFFERENT VALUATION METHOD WHICH REFLECTS THE BENEFITS PROVIDED BY DISTRIBUTED SOLAR PV SYSTEMS.

A. I recommend that the Commission should establish a formal process for more precisely valuing the costs and benefits associated with distributed solar PV resources. The valuation established by this process could be used for determining the cost-effectiveness of the distributed solar PV programs and for setting level of payment for distributed generation owners.

Q. PLEASE DESCRIBE THE INDUSTRY STUDIES WHICH REPORT ON THE COSTS AND BENEFITS ATTRIBUTABLE TO DISTRIBUTED SOLAR PV RESOURCES.

A. Many of these studies are described in a meta-analysis *A Review of Solar PV Benefit and Cost Studies* Electricity Innovation Lab, Rocky Mountain Institute (April 2013). The Minnesota Department of Commerce recently recommended using a VOS tariff in: *Minnesota Value of Solar: Methodology,* Minnesota Department of Commerce, Division of Energy Resources (April 1, 2014). I have attached a copy of these reports to my testimony as Exhibits JF-3 and JF-4, respectively. These studies generally report that distributed solar PV provides many benefits which should be accounted for in assessing the cost-effectiveness of these systems. The VOS can address uncompensated costs to utility in the net energy metering tariff construct, and is inherently more equitable to all ratepayers. In addition, the Louisiana Public Service Commission issued a request for proposals at its March 12, 2014 meeting to hire a consultant to determine the cost and benefits of residential solar PV systems in Louisiana.

I recommend that this Commission follow a process similar to the Minnesota process for adopting a distributed solar PV valuation method. In adopting the study, the Minnesota Public Utilities Commission explained the process followed by the Minnesota Department of Commerce to develop its distributed solar valuation methodology:

> The statute required that the Department consult stakeholders with experience and expertise in power systems, solar energy, and electric utility ratemaking regarding the proposed methodology, underlying assumptions and preliminary data.'
>
> The Department contracted with Clean Power Research to help develop the methodology. Clean Power Research has experience analyzing and developing solar PV valuation methodologies for other public agencies,

and for utilities. The Department also implemented a public engagement process involving four public workshops and solicitation of written comments over a period of months. Dozens of individuals and entities participated in the Department's process, including utilities, solar power installers, renewable energy advocates, and other organizations with relevant experience and expertise.

The Department did not adopt every suggestion or recommendation made by participants. However, the Department did modify its proposal in response to some recommendations, and adequately justified its reasons for not doing so in response to others. The Commission received no complaints about the process and several participants in the process commended the Department for its open, transparent approach. The Commission concludes that the Department's extensive engagement efforts fulfilled its obligation to consult.[1]

Q. WHAT FACTORS SHOULD THE COMMISSION CONSIDER IN DEVELOPING A NEW VALUATION FOR DISTRIBUTED SOLAR PV RESOURCES?

A. I recommend that the Commission generally use as a starting point the Minnesota VOS protocol because this methodology was undertaken through an open and transparent process developed with the input of many knowledgeable and experienced electric industry stakeholders. The factors used in this methodology include the value of energy and its delivery, generation capacity, transmission capacity, transmission and distribution line losses, and environmental value. Other known and measurable evidence of the cost or benefit of solar operation to the utility may be incorporated into the methodology, including credit for locally manufactured or assembled energy systems, systems installed at high-value locations on the distribution grid. Minn. Stat. § 216B.164(10)(f) (2013).

Q. HAVE UTILITIES CITED SOME OF THESE TYPES OF BENEFITS TO SUPPORT THEIR REQUESTS TO APPROVE DISTRIBUTED SOLAR PV PROGRAMS IN OTHER STATES?

[1] *In the Matter of Establishing a Distributed Solar Value Methodology under Minn. Stat. § 216B.164, subd. 10€ and (f),* Docket No. E-999/M-14-65 (Order at 9) (Apr. 1, 2014) (footnotes omitted).

A. Yes. Duke Energy Florida's affiliate in North Carolina advocated for consideration of some of these benefits when it applied to the North Carolina Utilities Commission for approval of a utility-owned distributed solar PV program in Docket No. E-7, Sub 856. I have attached the testimony of Duke witness Owen Smith from that proceeding to my testimony as Exhibit JF-4. Mr. Smith argued for approval of Duke's distributed solar PV program in North Carolina, even though the projected cost was $8.50/watt (Exhibit JF-5, Smith testimony at p. 14). Mr. Smith explained the benefits of Duke Energy Carolinas' proposed distributed solar PV program as follows:

Q: PLEASE SUMMARIZE THE BENEFITS OF THE PROGRAM.

A: There are many benefits of this program and they include the following:

- The Program will result in the production of renewable energy that will help enable Duke Energy Carolinas to comply with its REPS obligations and, along with the power to be purchased from Sun Edison pursuant to a recent purchase power agreement, will specifically help the Company meet its obligations under the solar carve out of the REPS for the next few years.

- The Program will enable the Company to understand the impact of distributed generation on its system. The Company believes that solar PV distributed generation will become much more prevalent in the future, and this Program will enable the Company to better understand any concerns and opportunities that can arise with the introduction of distributed generation.

- The Program will enable the Company to develop and enhance competencies as owners and operators of renewable generation facilities. This competency will benefit customers because the Company will become capable of building and owning renewable resources rather than relying solely on power purchase agreements. In cases where there may be no viable or attractively priced power purchase options available to the Company, this competency will be especially beneficial.

- The distributed nature of this program promotes energy security. The electricity produced under this Program is emission free.

- The Program will promote economic development in North Carolina by attracting investment and creating jobs in the growing solar industry. The Program can drive down the cost of solar PV installations in North Carolina through standardizing inspection requirements and leveraging volume purchases.

- The Program enables the Company's customers to directly participate in the development of renewable resources in North Carolina.

Application of Duke Energy Carolinas, LLC For Approval of Solar Photovoltaic Distributed Generation Program, Docket No. E-7, Sub 856 (Direct Testimony of Owen A. Smith at pp. 16-17) (filed July 25, 2008).

Florida is different from North Carolina in that North Carolina has a renewable portfolio standard and Florida does not. Nevertheless, the other benefits cited by Duke Energy should apply equally well in Florida as in North Carolina, and support maintaining the distributed solar PV program.

Q. HOW DO YOUR RECOMMENDATIONS ALIGN WITH THE POLICY OBJECTIVES FOR DEMAND-SIDE RENEWABLE ENERGY RESOURCES PLANS IN THE UTILITY CONSERVATION PLANS, AS DESCRIBED EARLIER IN YOUR TESTIMONY?

A. I believe my recommendations are well-aligned with these policy objectives. Florida has articulated a clear policy in favor of demand-side renewable energy programs as a means of reducing carbon emissions from fossil fuel plants. My recommendations should help demonstrate the reasonableness of the distributed solar PV programs.

Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING UTILITY-OWNED DISTRIBUTED SOLAR PV PROGRAMS?

A. Yes. I recommend that the Commission develop a pilot program for utility-owned distributed solar PV programs. These programs could compete with the incentive-based programs currently in effect. Allowing the utilities to own the distributed solar PV

systems on customer property would permit them to rate base these investments and earn a return. This may provide a greater incentive for utilities to promote these systems. FEECA provides that the Commission should consider allowing utility incentives for their conservation plans. In my opinion, this would be a reasonable incentive to encourage the utilities to deploy distributed solar PV systems. As I described earlier in my testimony, Duke Energy promoted a utility-owned distributed solar PV program in North Carolina when the cost was $8.50/watt. If a utility-owned distributed solar PV benefitted customers when the price was $8.50/watt, then such a program would surely benefit customers when the cost is closer to $3.50/watt.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

MR. FINNIGAN: Your Honor, witness is available for cross-examination.

CHAIRMAN GRAHAM: You're allowed a five-minute summary of his testimony if you wish.

MR. FINNIGAN: I apologize. Yes.

CHAIRMAN GRAHAM: Unless you want to waive it.

MR. FINNIGAN: No. He would like to give a summary, but he will keep to it five minutes. And he does have prefiled exhibits that I'll move into evidence at the conclusion of his testimony.

CHAIRMAN GRAHAM: That's correct. Thank you.

THE WITNESS: Your Honor, members of the Commission, my name is James Fine. I'm employed with the Environmental Defense Fund as director of energy research, and I'm a senior economist, where I've been working for seven years.

My testimony explains why the utilities' distributed solar voltaic PV programs are good policy for Florida and should be continued at the same level of funding, at a minimum. I also testify that the current program cost-effectiveness evaluations have been too conservative because they do not include all costs and benefits. Finally, I offer recommendations to improve the distributed solar PV program.

The utilities' distributed solar PV programs have been very successful to date. The utilities report dramatic cost decreases during the short time the program has been in effect. And there is good reason to believe that these trends will -- positive trends will continue. The cost trends for distributed residential and small commercial solar PV is converging quickly on cost parity with steadily rising retail electricity rates. Once average electricity rates exceed the cost of distributed solar PV, adoption rates in Florida are likely to follow those in California, Hawaii, North Carolina, and other states which have experienced greater than 30 percent per annum annual growth in installed solar PV capacity over the past several years.

But until this happens, incentive programs should be used to spur greater solar PV deployment in Florida. This is consistent with state policy to increase renewable generation. Florida has much less solar generation than one would expect given the amount of sunny days and the high customer bills.

In deciding the cost-effectiveness of this program, the Commission should account for all the

benefits this resource provides. In my opinion, the utilities' cost-effectiveness tests did not account for the distribution grid benefits or the air quality benefits completely provided by distributed solar PV. The Commission should account for the air quality benefits for several reasons. The EPA recently released its Clean Power Plan on regulating greenhouse gas emissions from existing fossil fuel power plants --

MR. BUTLER: I will object to this because this is not in his prefiled testimony, the reference to the recently published EPA Clean Power Plan. It couldn't have been. The testimony was filed before it was published.

THE WITNESS: I did refer to that anticipated filing in my testimony.

CHAIRMAN GRAHAM: Is it in your testimony?

THE WITNESS: Yes, sir.

CHAIRMAN GRAHAM: All right. You can talk about the anticipated filing.

THE WITNESS: Okay. My point was simply that this will establish a new compliance cost which must be accounted for in evaluating the costs and benefits of supply-side resources or demand-side measures.

In addition, the State will probably be able to use the air emissions reductions from this program, the solar PV program, to comply with the new Clean Power Plan rules. The compliance may be less costly than retrofitting or shutting down existing fossil fuel plants. So the distributed solar PV program could very well lead to lower electricity rates than would otherwise be the case if the program were canceled and utilities needed resort to more costly compliance alternatives.

There are additional benefits to society and the grid from solar PV. By displacing fossil fuel generation, solar PV avoids both greenhouse gas and conventional urban and regional air pollution, such as oxides of nitrogen and hydrocarbons, which are two precursors to the formation of harmful ozone and particulate matter.

As well, solar PV requires no water to operate, but fossil fuel based generation involves both consumptive and degratory [ph] water usage.

Additionally, in some circumstances, distributed solar PV can provide cost-effective alternatives to utility investments in distribution infrastructure for constrained circuits. In those cases, strategically incented distributed solar PV

could replace or defer the need for substations or other distribution equipment and reduce transmission losses.

There are two examples of approaches to this under way now, Con Edison's recent efforts to defer investments in a substation capacity expansion in North Central Brooklyn and Southern California Edison's preferred resources pilot, which are endeavoring to do exactly these -- avoiding more expensive infrastructure upgrades. These examples are opportunities to stimulate changes in behavior by customers, including engagement in distributed resource programs, and as a result, change distribution system efficiency and/or avoid infrastructure capacity upgrades. Use of economic incentives such as rates and rebates with a goal of reducing peak demand and effective customer education and empowerment may be able to stimulate changes in customer behavior. The value of distribution level benefits should be included in cost-effectiveness testing in this respect.

I recommend that the utilities facilitate the customers' ability to select their own solar companies. This is a demand-side management program, and the intent is to reduce customers'

load by installing distributed solar PV on the customer side of the meter. I therefore recommend that the utilities provide information to customers about companies who meet the state law requirements to sell the equipment in order to facilitate a customer's opportunity to participate in the incentive program.

By facilitating the customers' ability to connect with solar PV companies and thereby reducing the customer acquisition cost for solar PV companies, the utility could reduce the cost of expanding distributed solar PV in Florida.

Finally, I'll also recommend that the Commission continue to use the incentives for this program, but the amount of incentives per project could be reduced. The utilities report that the incentives are quickly exhausted. I therefore recommend that the total program funding be maintained, or even increased, but the per customer incentive could be reduced. This would enhance the cost-effectiveness of the program and allow more customers to participate and would result in greater deployment of distributed solar PV.

I have one additional comment, and that is that my testimony is limited exclusively to how to

decide on the cost-effectiveness of distributed solar PV for demand-side management programs.

Thank you.

MR. FINNIGAN: Your Honor, the witness is available for cross-examination.

CHAIRMAN GRAHAM: There you go. OPC.

MR. SAYLER: No questions, but I thought it was the utilities that would go first.

CHAIRMAN GRAHAM: Well, we're going to go through the intervenors to see if there's any non-friendly cross, and then we'll go to the utilities.

MR. SAYLER: No questions, Your Honor.

CHAIRMAN GRAHAM: Okay. Department?

MR. HALL: No questions.

CHAIRMAN GRAHAM: NAACP.

MR. DREW: No questions for Dr. Fine.

CHAIRMAN GRAHAM: FIPUG.

MR. MOYLE: I have just a few.

CHAIRMAN GRAHAM: Sure.

CROSS-EXAMINATION

BY MR. MOYLE:

Q. Good afternoon, sir. I'm Jon Moyle. I represent the Florida Industrial Power Users Group.

Let me refer you to page 2 of your testimony.

You make a comment about the convergence of residential and commercial PV on cost parity with retail electric rates. How quickly is that taking place?

A. Well, the costs of installed solar PV have been declining about 20 percent per year for the last several years. Looking at Florida's reported numbers, there was a 20 percent cost decline between 2010 and 2011 and then another 20 percent cost decline between 2011 and 2012. So these cost declines are coming quickly.

Q. Do you expect that trend to continue?

A. I do.

Q. Do you know what the average cents per kilowatt-hour is of electricity in North Carolina?

A. In North Carolina, I don't.

Q. California? You're in San Francisco; right?

A. Yeah.

Q. And what is the -- are you a PG&E customer?

A. I'm not. I'm an Alameda Municipal Power customer.

Q. Okay. Do you know what your average cost is on a kW basis?

A. Well, I have two blocks. I have a 12-cent rate and a 19-cent rate.

Q. You may not be the best person to ask that

question of. I'll ask it from the standpoint of PG&E. Do you have any information about average kilowatt --

A. I would have to double-check. It's on the order of about 13 or 14 cents per kilowatt-hour. It's on parity with Florida's average, which is about 12 cents per kilowatt-hour.

The structure of the retail rate design in California is different. They have inclining block rates. The calculation of average rate is a little tricky.

Q. How about Hawaii, same question?

A. The average rate in Hawaii is well over 30 cents per kilowatt-hour.

Q. And if I understand what your point here is, you're saying essentially, hey, markets are working, is that right, in some of these other jurisdictions?

A. Yes.

Q. Okay. And you said California is close to being on parity with Florida or is on parity with Florida; is that right?

A. On the cost of installed PV, I would have to compare the numbers directly, but it -- the cost parity argument I'm making is that a customer in Florida essentially faces a choice. They can buy energy from the utility, or they can self-invest. And if the

economics look pretty much the same, that's what I mean by cost parity.

Q. Yeah. And I guess you would agree, if you're suggesting here markets will work and the California price is similar to the Florida price, that would argue for letting markets work in Florida without a need for subsidies --

A. It actually wouldn't --

Q. -- or incentives. If you could just answer yes or no, that would be helpful. The Commission has in their prehearing order -- did you get a chance to look at the prehearing order?

A. You've asked are markets working. The market in California has subsidies too.

Q. Okay. The question I was trying to get you to answer is just yes or no. If California has a similar price -- let me withdraw that question.

One other point. Let me ask you this. If you assume that there was testimony this case that in certain areas where there were solar programs, that there was 50 percent of the people who had put solar on their houses and done a solar program did so without any incentives, wouldn't that suggest that solar is being well received in Florida without the need for incentives or subsidies? And if you can answer yes or no, that

would be helpful.

MR. FINNIGAN: Objection, Your Honor. No foundation.

CHAIRMAN GRAHAM: Mr. Moyle.

MR. MOYLE: My recollection -- I mean, the record will speak for itself. My recollection is that there has been testimony already in this proceeding that one of the -- I can't remember which utility, but one of the utilities had a 50 percent rate of people doing distributed solar without receiving incentives. If I'm wrong, you know, I'm wrong. I guess I can ask him to assume that question.

CHAIRMAN GRAHAM: Dr. Fine, if you can answer the question, you can answer it. To go more specific to what Mr. Moyle said earlier, you can answer yes or no, and you're allowed briefly to explain your answer.

A. Okay. Yes, markets are working, but it's not that customers in California see the same prices that Florida customers see. Customers in California who are adopting solar PV are doing so to avoid paying their top tier prices, which could be well over 30 cents per kilowatt-hour.

Q. And we had moved on from that question, and my

question that I was trying to get you to answer now was, if you assumed in Florida that there was a 50 percent uptake on solar without people being offered any money, wouldn't that suggest that, you know, there's not a huge need for subsidy/incentives?

MR. FINNIGAN: Same objection, Your Honor, for the record.

CHAIRMAN GRAHAM: So noted. If you can answer, you can answer it. If not, just say you can't answer it.

A. Yes, for customers receiving high costs, high gross or paying high rates. That's not all customers. And so the market works, but there will always be market failures, customers who face split incentives, customers who don't see the -- who aren't purchasing large quantities of solar and thus don't have those large monthly bills, but would still like to invest in a portion of a solar project. These are market failures that aren't kind of smoothed out even if you have cost parity.

Q. Thank you.

A. For high energy using customers, certainly the market is working well in California, Hawaii, North Carolina, and elsewhere.

MR. MOYLE: Thank you for making a long trip

to come to Tallahassee. Thank you. I have no further questions.

THE WITNESS: Thank you.

CHAIRMAN GRAHAM: Sierra club.

MS. CSANK: No questions.

CHAIRMAN GRAHAM: SACE?

MS. TAUBER: No questions, Mr. Chairman.

CHAIRMAN GRAHAM: Okay. Florida Power & Light.

MR. BUTLER: No questions for this witness, Your Honor.

CHAIRMAN GRAHAM: Duke.

MS. TRIPLETT: No questions, Mr. Chairman.

CHAIRMAN GRAHAM: TECO.

MR. WAHLEN: No questions.

CHAIRMAN GRAHAM: Gulf?

MR. GRIFFIN: No questions.

CHAIRMAN GRAHAM: Staff.

MS. TAN: No questions.

MR. BUTLER: Commissioners. Commissioner Balbis.

COMMISSIONER BALBIS: Thank you, Mr. Chairman. And thank you, Dr. Fine, for coming here. I just have a quick question on page 12, line 15 through 17 of your testimony.

THE WITNESS: I'm looking at it.

COMMISSIONER BALBIS: Okay. And starting with "This most recent study," are you referring to Exhibit JF-1 with that statement?

THE WITNESS: No. I'm referring to exhibit -- yes, I'm referring to Exhibit JF-1, yes.

COMMISSIONER BALBIS: Okay. And your statement is that this most recent study is one of the many indicating that Florida will experience very high costs from global warming and that fast actions, along with actions at a global scale, can avert these impacts.

THE WITNESS: Yes.

COMMISSIONER BALBIS: Do you know who that study was prepared for?

THE WITNESS: No, I don't.

COMMISSIONER BALBIS: If I told that the study was prepared for me, would you be surprised?

THE WITNESS: No, I wouldn't.

COMMISSIONER BALBIS: Well, the purpose of the study was to make a presentation at NARUC, and the conclusions of the study were not what you stated. The conclusions of the study were that if a 30 percent reduction in carbon emissions were to be realized through the assumptions made in the study,

it would result in very high costs. It did not touch upon climate change effects, costs associated with climate change. So how did you come to that conclusion?

THE WITNESS: That was my read of the study, that these were costs that could be avoided by taking fast action to avert -- and it was one of several corroborating bits of evidence that I offered in my testimony. So there's JF-2, for example, by Stanton and Ackerman. There's a study -- there was another study that I referred to also. I want to make sure I give you the right title.

COMMISSIONER BALBIS: Well, let's focus on JF-1, because, again, you said that statement refers to JF-1. And I don't believe anywhere in that study does it indicate a cost associated with climate change.

THE WITNESS: It was a compliance cost that FP&L would face to comply with the EPA rules. It's not a cost to the state from the effects of climate change. The best example of that I had is the Stanton and Ackerman study, but there was also an oceanic agency whose study I'm trying to find in my own testimony that I haven't --

COMMISSIONER BALBIS: But it's not in JF-1, is it?

THE WITNESS: No, sir.

COMMISSIONER BALBIS: Okay. I just wanted to correct for the record that the report that was prepared for me did not address climate change costs, and only a compliance cost for that theoretical reduction that was presented in September of last year.

That's all I have, Mr. Chairman.

THE WITNESS: I'm sorry. I think I misspoke. My statement says clearly that the forecasted compliance costs for FP&L are 238 million in 2020 and 249 million in 2021.

COMMISSIONER BALBIS: And I agree with that. It's the next sentence that I'm having an issue with.

THE WITNESS: And increasing steadily thereafter, or the most recent study is one of many indicating that Florida will experience very high costs from global warming.

COMMISSIONER BALBIS: Yes, that one.

THE WITNESS: Okay.

COMMISSIONER BALBIS: Thank you.

CHAIRMAN GRAHAM: Commissioner Brisé.

COMMISSIONER BRISÉ: Thank you, Mr. Chairman.

On page 13, I think it's line -- starting at line 14, you mention costs borne by society when carbon and other greenhouse gases are emitted. Have you been able to quantify what those actual costs are and how they relate to both RIM and TRC and the potential impact?

THE WITNESS: Yeah. Well --

COMMISSIONER BRISÉ: Specifically per customer, as I've been asking for each one of the utilities --

THE WITNESS: No, I haven't.

COMMISSIONER EDGAR: Okay. So how would we as a Commission set goals based on something that we don't have anything to quantify?

THE WITNESS: Oh, there are quantifications. It's not -- it wasn't my work. I gave reference to EPA guidance, from the White House, estimating what the appropriate social cost of greenhouse gas pollution should be in the analysis of policy decisions such as these. It's not my own analysis, though.

COMMISSIONER BRISÉ: Sure. Okay. So --

THE WITNESS: Could I take a moment to explain to you what I understand those costs to be?

COMMISSIONER BRISÉ: Sure.

THE WITNESS: One example is additional compliance costs that the utilities would see to reduce greenhouse gas pollution. But the broader costs here are costs that I'm sure are not unfamiliar to Floridians, such as the risks of sea level rise, lost revenues from tourism, increasing costs to your energy system. These are estimates provided by the other scholars, not mine.

The social cost of carbon guidance that the EPA and the White House have suggested is, when we think broadly about the best investments that society should be making -- I heard Mr. Floyd comment earlier, "We're educating our children, who are our future customers." Well, when we take a total resource cost perspective, we ought to be considering the perspective of our future customers too.

I understand that the scenario analysis that -- I believe it was Mr. Duff's description of his scenario analysis on the different costs of carbon assumptions that you might use, they considered a scenario where they applied a regulatory compliance cost of carbon of $17.47 in 2020, growing at a rate of 8.3 percent per year.

So what the social cost of carbon does is recognize that the costs associated with global warming to society are going to be growing, are anticipated to be growing unless we make investments now that could avoid some of those costs.

COMMISSIONER BRISÉ: So what would the investment be today? Quantify it for me.

THE WITNESS: Expanding non-emissive resources --

COMMISSIONER EDGAR: Rate impact. That's what I'm interested in.

THE WITNESS: I'm sorry. I didn't understand exactly the question.

COMMISSIONER BRISÉ: What would be the rate impact per utility that we're trying to set goals for?

THE WITNESS: What cost of carbon assumption should be used in that calculation?

COMMISSIONER BRISÉ: Uh-huh.

THE WITNESS: For the rate impact test, the compliance cost of carbon is appropriate. For the Total Resource Cost test, where you're thinking -- where you're taking the perspective of society, including our children and their children, the total social cost of carbon should be considered,

and that's what the White House guidance is.

Ultimately, we're going to have to make a subjective judgment about what the economists call the discount rate you use for future costs and benefits. That's why I provided you with a table. Depending on what discount rate you feel is appropriate for using the social cost of carbon.

And the reason the discount rate matters is quite simply that if you are looking at costs far in the future, but you use a high discount rate, in today's present value, they seem very small, almost irrelevant. And if you use a low discount rate, costs and benefits in the future look relatively the same as costs and benefits today.

So when we think about how that plays out, for example, for a given resource investment consideration, we could choose to invest in fossil fuel generation that has relatively lost capital costs, but fuel costs going into the future and uncertain fuel costs, compared to a high capital cost renewable project today that has no fuel cost going forward.

So when you compare those two and you have a high discount rate for future costs what you find is that the higher capital cost project, the

non-fuel using project looks more costly today, but you're not incurring variable fuel costs going forward. Compare that to the fossil fuel generation project, which might have relatively lower fossil fuel -- capital costs today, but variable fuel costs going forward, and that actually exposes customers to fuel price risks that non-fuel-using projects don't do.

So that's an example of how, if you think about the rate at which you discount costs and benefits in the future and making decisions today, that that discount rate you use is going to have a big impact on how different resources compare.

I know I didn't directly answer your question about the RIM test, but to be clear, the Total Resource Cost test ought to consider the total social cost of greenhouse gas pollution, amongst other benefits.

COMMISSIONER BRISÉ: Thank you.

CHAIRMAN GRAHAM: Commissioner Balbis.

COMMISSIONER BALBIS: Just a follow-up from Commissioner Brisé. Your discussion on adjusting the incentive amounts, you know, especially those programs where they're oversubscribed very quickly, did you review the utilities' testimony where they

did sensitivity analysis and even reduced those incentives down as to zero, and they still didn't pass one or more of the cost-effectiveness tests?

THE WITNESS: Yes.

COMMISSIONER BALBIS: So how do you explain that?

THE WITNESS: I'm having trouble explaining it, quite frankly. I'm having a hard time getting my head around that finding. The finding that a customer who's making an investment in rooftop solar is still not seeing a positive RIM test doesn't jive for me.

And what I think is happening is the same thing you saw happening five years ago in California or North Carolina or Hawaii, which is, customers were actually making investments of their own dollars. The subsidy helped, but they were still spending more on energy than they would have been had they been buying from the utility. And I don't know if that's what's playing out in Florida and why they're coming upon this calculation.

But customers that are voluntarily making these investments, one of the things us economists do is look at ourselves in the mirror regularly and say, you know, there are non-monetary factors that

people consider. And I think there are people who are making investments in solar PV not strictly because of monetary considerations.

COMMISSIONER BALBIS: So you think that if the incentives are brought to zero or even eliminated -- if you eliminate the pilot program, those customers are still going to invest on their own?

THE WITNESS: Well, I did hear Mr. Bryant say that there were customers waiting for the incentive programs to be announced, and then they all jumped in line. And arguably, those customers are still going to be in line even if the incentive isn't there.

COMMISSIONER BALBIS: Okay. Thank you.

THE WITNESS: Thank you.

CHAIRMAN GRAHAM: EDF, redirect?

MR. FINNIGAN: No redirect, Your Honor.

CHAIRMAN GRAHAM: Okay. Exhibits.

MR. FINNIGAN: Your Honor, we have premarked exhibits 61 through 65 there were included with Dr. Fine's prefiled testimony that we would like to move into the record.

CHAIRMAN GRAHAM: Sixty-one through 65, we will move into the record. And there were no other exhibits offered.

(Exhibits 61 through 66 were admitted into the record.)

CHAIRMAN GRAHAM: Dr. Fine, thank you very much for your testimony.

Okay. We have SACE's first witness.

MR. CAVROS: Thank you, Chairman.

Thereupon,

NATALIE MIMS

was called as a witness on behalf of Southern Alliance for Clean Energy and, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CAVROS:

Q. Good afternoon, Ms. Mims.

A. Hello.

Q. Thank you. Ms. Mims, could you state your name and business address for the record.

A. My name is Natalie Mims, and my business address is P.O. Box 1868, Knoxville, Tennessee, 37901.

Q. And where are you employed, and in what capacity?

A. I'm employed by the Southern Alliance for Clean Energy, and I'm the energy efficiency director.

Q. And did you prepare and cause to be filed direct testimony and exhibits, the exhibits identified

as NAM-1 to NAM-9, in this proceeding on May 19, 2014?

A. I did.

Q. And do you have that testimony and those exhibits with you today?

A. I do.

Q. And if I asked you the exact same questions today that are in your direct testimony, would you answer them the same?

A. Yes, sir.

Q. And do you have any changes to your prefiled testimony or exhibits?

A. No, although I think there are some errors. I think I saw an extra word in there a couple of times, but I'm just going to let it go.

MR. CAVROS: Chairman, at this time, I ask that the prefiled direct testimony be entered into the record as though record.

CHAIRMAN GRAHAM: We will enter Ms. Mims' prefiled direct testimony into the record as though read.

MR. CAVROS: Thank you.

1. Introduction

Q. Please state your name, position and business address.

A. My name is Natalie Mims. I am Director of Energy Efficiency for Southern Alliance for Clean Energy ("SACE"), and my business address is P.O. Box 1842, Knoxville, TN 37901.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of SACE.

Q. Please summarize your qualifications and work experience.

A. I graduated from the Pennsylvania State University in 2002 with a Bachelor of Arts degree in English and Political Science. I received a Master of Environmental Law and Policy from the Vermont Law School in 2004. Since 2004, I have worked in the non-profit sector on a wide range of energy and environmental policy issues, including energy efficiency potential studies; energy efficiency program design and implementation; and evaluation, measurement and verification of efficiency programs.

I joined SACE in 2010, and became the Director of Energy Efficiency for SACE in 2013. I am the senior staff member responsible for SACE's utility energy efficiency advocacy across the Southeast, including Georgia, Alabama, Mississippi, Florida, North Carolina South Carolina, and Tennessee. In this capacity, I am responsible for leading dialogue with utilities and regulatory officials on issues related to energy efficiency policy, program design and evaluation. My work includes conducting detailed analysis of utility-run energy efficiency portfolios; providing written testimony and comments in regulatory proceedings; conducting presentations before regulators and interested stakeholders; and participating in energy efficiency stakeholder working groups, including Georgia Power's Demand Side Management ("DSM") Working Group, and Duke Energy Carolina's Energy Efficiency Collaborative. I have testified in energy

efficiency proceedings in front of the North Carolina Utilities Commission, the South Carolina Public Service Commission and the Georgia Public Service Commission.

A copy of my resume is included as Exhibit SACE-NAM-1.

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

A. No. This is my first time testifying before the Florida Public Service Commission, although I presented to the Florida Commissioners during an Internal Affairs meeting in January 2012 on the importance of robust evaluation, measurement and verification ("EMV") of DSM impacts.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present to the Commission my evaluation of Florida Power and Lighting ("FPL"), Duke Energy Florida ("DEF"), Gulf Power Company ("GPC") and TECO's (collectively, the "Utilities") Petition for Approval of Numeric Conservation Goals. Specifically, I will (1) discuss why it is inappropriate and against precedent and legislative intent to use the Ratepayer Impact Measurement ("RIM") test scores to set energy efficiency goals in Florida; (2) review the recommendations made in the recent review of the FEECA statute, and discuss the findings, (3) discuss the Utilities historic program costs, and show how they are inflated (4) explain why a two-year payback screen is an flawed proxy for free-ridership and is not used in any other state (5) discuss the flaws with the Utilities technical, economic and achievable potential; (6) discuss FPL and DEF's inadequate incorporation of energy efficiency into their resource plans and (7) make recommendations for policy and methodology improvements in Florida.

Q. Are you submitting exhibits along with your testimony?

A. Yes. I am submitting the following exhibits with my testimony:

- SACE-NAM-1: Resume of Natalie Mims
- SACE-NAM-2: Excerpt of Initial Comments of Sierra Club and Southern Alliance for Clean Energy in NCUC Docket E-100 Sub 137
- SACE-NAM-3: Excerpt of Direct Testimony of John D. Wilson on Behalf of Southern Alliance for Clean Energy in GPSC Docket 36498
- SACE-NAM-4: Excerpt of Direct Testimony of Natalie A. Mims on Behalf of Southern Alliance for Clean Energy in GPSC Docket 36498 and 36499
- SACE-NAM-5: National Action Plan for Energy Efficiency table of benefits and costs for each of the five benefit-cost tests
- SACE-NAM-6: Excerpt of Direct Testimony of Natalie A. Mims on Behalf of Southern Alliance for Clean Energy and South Carolina Coastal Conservation League in SC PSC Docket 2013-208-E.
- SACE-NAM-7: Excerpt of Direct Testimony of Jamie Barber, Richard F. Spellman, and John L. Kaduk on Behalf of the Georgia Public Service Commission in Docket 36498.
- SACE-NAM-8: SACE comment letter to Commission staff on technical potential update.
- SACE-NAM-9: Utilities technical, economic, achievable and proposed goals

2. Summary of Findings and Conclusions

Q. Please summarize the results of your review of the Utilities' Petitions for Approval of Numeric Conservation Goals.

A. Based on my review of the Utilities' Petitions for Approval of Numeric Conservation Goals ("Petitions") and the analysis I have conducted, I reach the following conclusions:

- The RIM test should not be used to determine the Utilities' energy efficiency goals. Rather, FEECA mandates that utilities use the total resource cost ("TRC") test and the

Commission has established the TRC test as the primary benefit-cost to determine energy efficiency goals.

- The Legislature identified the need for a report on FEECA, and one of the primary findings of the report was the FEECA continues to be in the public interest. The report identified improvements and make recommendations to implement those improvements. I recommend that the Commission should formally address each of the recommendations.
- Based on historic costs, more than a third of the program impacts associated with Utilities portfolios have costs that are significantly above the average cost of comparable programs. The Utilities inclusion of administrative costs and maximum incentive levels in their proposed goals continues this trend of inflated costs, which was identified in a recent Lawrence Berkeley National Lab report.
- Free-ridership should be considered in program planning, and the appropriate methodology for doing so involves using survey and billing data from customers that have participated in the Utilities energy efficiency programs. Using a payback period screen for a "proxy" of free-ridership; regardless of the number of years, is an archaic and inaccurate way to determine free-ridership.
- The Utilities' Technical, Economic and Achievable Potential is conservative, and does not accurately depict the amount of energy efficiency the Utilities are able to cost-effectively capture in the 2015-2024 time period. Further, the methodology that the Utilities use to determine their proposed energy efficiency goals is flawed, resulting in underutilization of energy efficiency as a resource.
- FPL and DEF in adequately incorporate energy efficiency into their resource planning. FPL lacks transparency and analytical rigor in its resource planning, which raises concerns about the credibility of its resource planning. DEF's modeling is

constrained in a manner that is very likely to understate its avoided costs and therefore screen out more DSM than is appropriate.

- There are policies that need to be put in place in Florida to allow the Utilities to fully support energy efficiency as a resource, including a lost revenue adjustment mechanism and performance incentives for achievement of DSM goals. The Commission has the authority to implement these policies, and should do so. There are methodology changes that need to be made in Florida, including using evaluation, measurement and verification to determine free-ridership rates and seek to balance free-ridership with market transformation (and spillover effects).

3. Utilities proposed goals do not align with Florida energy policy.

Q. What are the objectives of the Florida Energy Efficiency Conservation Act ("FEECA")?

A. As stated in the *Evaluation of Florida's Energy Efficiency and Conservation Act* report to the Florida Public Utility Commission in December 2012, the objectives are:[1]

> 1) reduce the growth rates for electricity demand at peak times, 2) reduce the consumption of electricity, and 3) conserve expensive resources, particularly oil used as fuel to generate electricity. FEECA's objectives have been amended over time to: 1) control (in addition to reduce) the growth rates of peak demand and consumption of electricity; 2) increase the overall efficiency and cost-effectiveness of electricity and natural gas production and use; 3) encourage development of demand-side renewable energy systems; 4) add greenhouse gases to the factors that could be considered in assessing the cost-effectiveness of FEECA programs; and 5) incorporate consideration of supply-side efficiency

[1] Galligan et al., *Evaluation of Florida's Energy Efficiency and Conservation Act*, December 7, 2012, p. 1, available at: http://warrington.ufl.edu/centers/purc/docs/FEECA_FinalReport2012.pdf

improvements. However, the original three objectives set forth in 1980 remain in the Act today and they continue to be the primary focus of the law.

Q. Does energy efficiency reduce the amount of money that consumers pay to the electric utility?

A. Yes. When customers install energy efficiency measures, it reduces the amount of energy they consume. All other factors being equal, this creates both total system savings that benefit all customers, and bill savings that benefit customers that install the efficiency measure. As a consequence, it reduces the amount of revenue a utility collects.

There is very little information available in the Utilities filing about system savings from energy efficiency. Our analysis of other Southeast states, where we have had access to better data, has indicated that the total system cost is less with higher levels of energy efficiency. In the Carolinas, for example, SACE analysis indicated that Duke Energy customers would save roughly $1 billion over the next 15 years if Duke Energy Carolinas and Duke Energy Progress selected a resource plan with higher levels of energy efficiency than base plans, as shown in SACE-NAM Exhibit 2.[2] Similarly, in Georgia, SACE analysis showed that Georgia Power customers could save $2.4 billion over the planning period by investing in higher levels of efficiency, as shown in SACE-NAM Exhibit 3.[3] These lower system costs result in lower costs for all customers.

We were unable to complete a similar estimate of savings for Florida utility customers because the Utilities did not provide data similar to those we were able to access in in the Carolinas and Georgia.

Q. When the total system cost is less for customers, does that result in lower bills?

[2] North Carolinas Utility Commission, Docket No. E-100, Sub 137, *Initial Comments of Sierra Club and Southern Alliance for Clean Energy*, available at: http://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=11ddfb83-53ec-44ce-b44c-57f9c3b06cf1

[3] Georgia Public Service Commission, Docket No 36498 and 36499, *Direct Testimony of John D. Wilson*, available at: http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=148134

A. Yes. SACE conducted an analysis of Georgia Power's data and showed that higher amounts of efficiency (relative to the base case) reduces all customer bills, and that the average commercial and industrial customer energy efficiency participants could reduce their annual bills by 15-24% if the Company adopted a high efficiency portfolio as compared to the base case efficiency portfolio, as shown in SACE-NAM-Exhibit 4.[4]

Q. Is a bill impact analysis possible in Florida?

A. Yes. If the Commission is concerned about the system cost of energy efficiency, it could simply ask the Utilities to perform an analysis on the long-term impact of energy efficiency on rates and bills. In Georgia Power's most recent IRP and DSM planning docket, the Commission found:

> The Commission finds that it is important to understand the long term percentage rate impact of future demand-side programs when making decisions regarding future utility spending on such certified programs in an IRP docket. It is not sufficient for the Commission to simply be presented with the dollar rate impacts of future certified programs, as the dollar level of rate impacts alone does not provide any context for the Commission to understand the significance of these rate impacts to the total Company annual revenue requirements. Also, because the Commission's policy is that energy efficiency is a priority resource, the Commission needs to know and understand the long term percentage rate impacts of future certified programs as compared to the percentage rate impacts of other generation, transmission and distribution resources.[5]

Q. Do you recommend that the Utilities conduct a similar analysis in Florida?

[4] Georgia Public Service Commission, Docket No 36498 and 36499, *Direct Testimony of Natalie Mims*, available at: http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=148133
[5] Georgia Public Service Commission, Docket No 36498 and 36499, *Final Order*, p. 29, available at: http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=148996

A. Yes. The Utilities should provide the long term percentage rate and bill impacts of future certified programs as compared to the percentage rate and bill impacts of other generation, transmission and distribution resources, taking care to identify the number of customers projected to participate in those programs as part of the analysis.

Q. What are the Utilities proposed energy efficiency goals?

A. The Utilities proposed energy efficiency goals in their applications. Tables 1-4 and Figure 1 show the Utilities Proposed Goals for the 2015-2019 time period.

Table 1. Utilities Proposed Incremental Energy Goals (GWh)

	2015	2016	2017	2018	2019
Florida Power & Light	2	3	3	4	4
Duke Energy Florida	40	37	33	27	21
Gulf Power	3	4	6	7	8
TECO	6	10	13	15	17

Figure 1. Combined Utilities Historic Energy Savings and Proposed Incremental Energy Goals

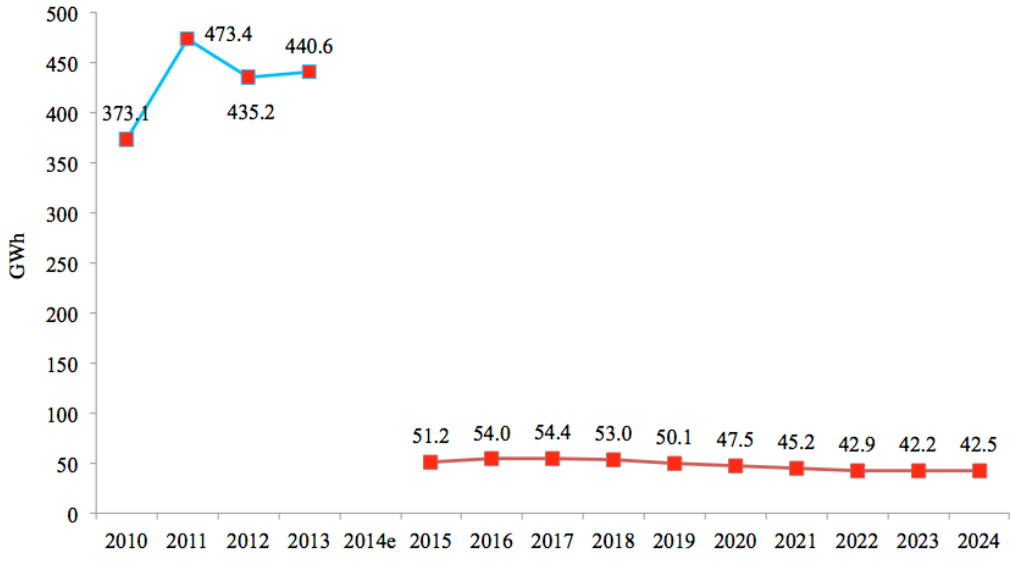


Table 2. Utilities Proposed Incremental Energy Goals (GWh Savings as a percent of retail sales)

	015	016	017	018	019
Florida Power & Light	.00%	.00%	.00%	.00%	.00%
Duke Energy Florida	.11%	.10%	.09%	.07%	.06%
Gulf Power	.03%	.04%	.05%	.06%	.07%
TECO	.03%	.05%	.07%	.08%	.09%

Figure 2. Individual Utilities Proposed Incremental Energy Goals 2015-2019 (GWh savings as percent of retail sales)

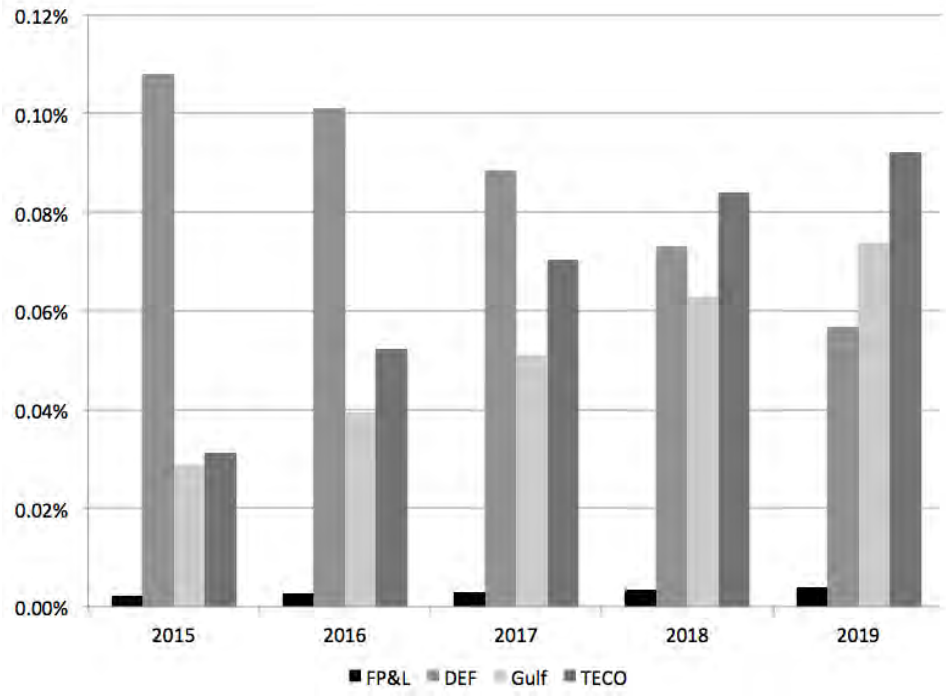


Figure 3. Combined Utilities Proposed Incremental Energy Goals 2015 -2019 (GWh savings as a percent of retail sales)

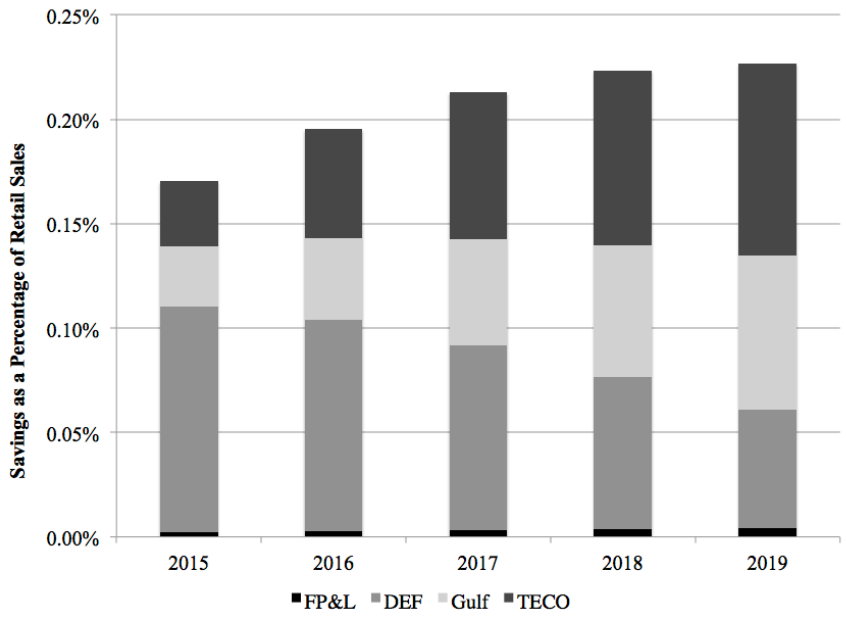


Table 3. Utilities Proposed Incremental Energy Goals (Winter MW)

	2015	2016	2017	2018	2019
Florida Power & Light	16	18	19	19	19
Duke Energy Florida	64	58	54	48	42
Gulf Power	1	2	2	3	4
TECO	4	5	7	8	9

Table 4. Utilities Proposed Incremental Energy Goals (Summer MW)

	2015	2016	2017	2018	2019
Florida Power & Light	26	30	31	33	34
Duke Energy Florida	38	36	33	30	27
Gulf Power	3	4	5	6	7
TECO	3	4	5	6	6

Figure 1, particularly for FPL.

Q. Do the Utilities' energy and peak demand reduction goals reflect the intent of the statute?

A. The Utilities argue that level of utility energy efficiency and peak demand reduction goals should be based on a very restrictive benefit-cost test, known as the Ratepayer Impact Measurement ("RIM") test. While I am not offering a legal interpretation, it seems to me that the narrow view taken by the Utilities will not result in significantly reducing the consumption of electricity nor conserving fuel used in the generation of electricity. The RIM test fails to achieve these objectives because it does not quantify all of the costs and benefits of conserving finite resources.

- **RIM is not the appropriate tool to use to assess Florida's energy goals.**

Q. What test did the Commission use to set the Utilities' efficiency goals in 2009?

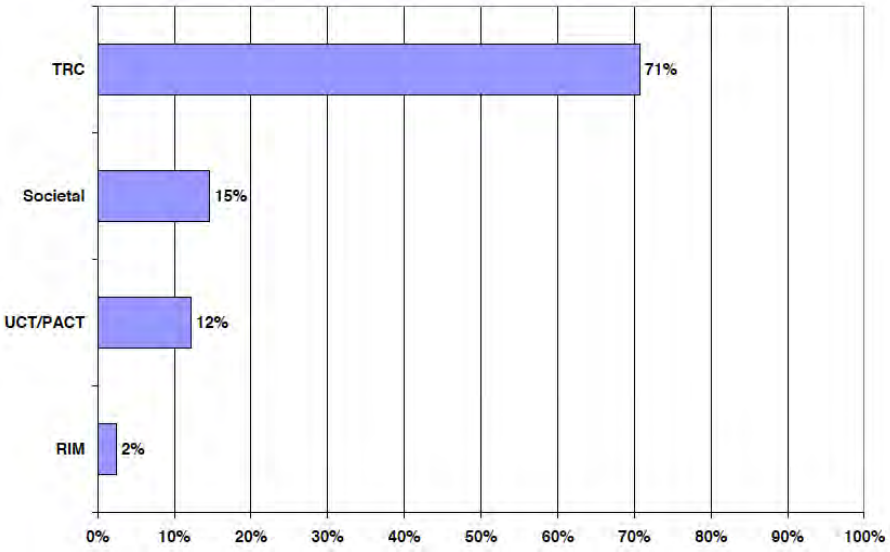
A. During the last goal-setting process, the Commission used the TRC test. In Order Number PSC-09-0855-FOF-EG, the Florida Public Service Commission stated,

> Therefore, we approve goals based on the unconstrained E-TRC Test for FPL, PEF, TECO, Gulf, and FPUC. The unconstrained E-TRC test is cost effective, from a system basis, and does not limit the amount of energy efficiency based on resource reliability needs.

Q. Is the RIM test used as the primary cost-effective test to make energy efficiency decisions by regulators in the United States?

A. No. Only one state, Virginia, relies on the RIM test as its primary benefit-cost test. 71% of states that have designated a primary cost-test use the Total Resource Cost ("TRC") test. Figure 4 shows the percentage of states that assign each benefit-cost test as its primary cost-test.

Figure 4. Primary Benefit-Cost Test (Percent of States) (n=41)[6]



Q. Should the RIM test be relied on to determine the level of energy efficiency investment in Florida?

A. No, I do not believe that the Utilities should rely on the Ratepayer Impact Measure Test (RIM) test to determine their *level* of efficiency investment. Looking elsewhere in the Southeast, in a 2010 IRP order, the Georgia Public Service Commission found, "Because the RIM test only indicates whether electric rates may increase if an energy efficiency measure or program is implemented, and not whether the impact may reduce a participant's overall electric bill, this test will screen out energy efficiency measures that can save significant amounts of electricity and can lower electricity bills."[7]

Further, as stated in the *Evaluation of FEECA*,

> This report recommends that cost-effectiveness criteria focus on two issues, namely whether program participants benefit and whether program benefits

[6] Kushler, et al., *A National Survey of State Policies and Practices for the Evaluation of Ratepayer-Funded Energy Efficiency Programs*, February 2012, American Council for an Energy Efficient Economy Report Number U122, available at: http://www.aceee.org/research-report/u122

[7] Georgia Public Service Commission, Docket Nos 31081 and 31082, July 6, 2010, *Final Order at 12*,available at http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=148996

exceed program costs for Florida as a whole.[8]

The report goes on to state that an emphasis on program benefits exceeding program costs could increase *rates*. This indicates that the report is not recommending the use of the RIM test, as the primary goal of the RIM test is to determine if *rates, not costs or bills, increases*.

Q. What cost test do other utilities in the Southeast rely on?

A. In North Carolina and South Carolina, Duke Energy Progress[9] and Duke Energy Carolinas[10] rely on the Utility Cost Test (UCT) test to evaluate cost-effectiveness, but provide all of the cost-test scores in filings. The Georgia Public Service Commission relies on the TRC test, and Georgia Power also provides all the cost-test scores in the filings.[11]

Further, the *Evaluating FEECA* report states,

> The TRC test focuses on a different objective than the RIM test, namely economizing on the cost of satisfying customers' energy demands, i.e. the value that customers place on the services they obtain from consuming electricity. Customers' energy demands can be satisfied by supplying energy and by providing improved methods for obtaining the valuable services that energy consumption provides…The TRC does this by comparing each program's costs to the projected costs of supplying the power that the program saves.[12]

[8] Galligan et al., *Evaluation of Florida's Energy Efficiency and Conservation Act*, December 7, 2012, P. 29, available at: http://warrington.ufl.edu/centers/purc/docs/FEECA_FinalReport2012.pdf
[9] South Carolina Public Service Commission, Docket 2008-251-E, *Joint Proposed Order,* P. 7, available at: http://dms.psc.sc.gov/pdf/matters/8C5EA467-D24A-0C1C-BC0C1D3B49CA0C7D.pdf
[10] North Carolina Utilities Commission, Docket No E7 Sub 1032, *Order Approving DSM/EE Programs and Stipulation of Settlement. Settlement*, page 10, available at: http://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=c1692a27-e029-46ae-a502-400f0a38d511
[11] Georgia Public Service Commission, Dockets no 36498 and 36499, *Final order at 25*, July 11, 2013, available at: http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=148996
[12] Galligan et al., *Evaluation of Florida's Energy Efficiency and Conservation Act*, ,.December 7, 2012, p. 124, available at: http://warrington.ufl.edu/centers/purc/docs/FEECA_FinalReport2012.pdf

Q. What is the UCT?

A. While the primary goal of the RIM test is to determine if utility *rates* will increase, the primary goal of the Utility Cost Test, or UCT (also known as the Program Administrator Cost test) is to determine if utility *bills* will increase. It is also notable that the UCT is the best test to use to compare the cost-effectiveness of different methods of reaching customers. For example, a utility might consider switching from the use of high incentive payments to greater training of trade allies and promotion to customers. In this example, the UCT would change not only due to different program costs, but also due to changes in free-ridership, spillover and average savings per participant. I have included a description of the costs and benefit associated with each of the five benefit-cost tests from the National Action Plan on Energy Efficiency as SACE-NAM-Exhibit 5.[13]

Q. What are the cost and benefit inputs in the RIM test?

A. The benefits for the RIM (and TRC) test are calculated from two inputs. First, the energy costs avoided by not needing to produce a kWh (by saving a kWh). Second, the capacity-related costs avoided by the utility, including generation, transmission and distribution. The costs for the RIM test are calculated from four inputs: (1) program overhead costs, (2) utility incentive costs, (3) utility installation costs, and finally, (4) lost revenues due to reduced energy bills. If the costs, including lost revenues, are greater than the benefits, then the measure or program is not cost-effective under RIM.

- **The Utilities concerns with cross-subsidization are unfounded.**

Q. One of the concerns the Utilities express with using the TRC test as the primary

[13] Energy and Environmental Economics, Inc. and Regulatory Assistance Project., *National Action Plan for Energy Efficiency :. Understanding Cost-Effectiveness of Energy Efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy-Makers.* http://www.epa.gov/eeactionplan

cost-effectiveness test in Florida is that cross-subsidization may occur. What is cross-subsidization?

A. In the energy context, it is when one customer pays for more, or receives less benefit, than another customer on the electric system.

Q. Does energy efficiency result in cross-subsidization?

A. As with any energy investment, not all customers that pay for the energy infrastructure will necessarily receive a comparable benefit. Investments in both the supply and demand side will cost customers money. However, unlike the supply side, customers have the option to participate in energy efficiency programs, and can lower their consumption and bills through their program participation. The customer has the opportunity to offset or eliminate the cost of the energy efficiency program. This is not the case with supply side investments.[14]

In addition, there are many benefits of energy efficiency that accrue to the entire electric system - making the cross-subsidization discussion moot. SACE's analysis of South Carolina Electric and Gas' energy efficiency portfolio demonstrated that increased levels of energy efficiency lower total system cost, providing a $50 million universal benefit to all customers on the system, as shown in SACE-NAM-Exhibit 6.[15] The system-wide, "universal" benefit occurs when efficiency reduces demand, average fuel costs are reduced, and system costs fall, which puts downward pressure on rates. Over the long term, as power plants are deferred or avoided entirely, the cost of building those power plants is not put into the rate base, placing further downward pressure on rates.

Q. Does cross-subsidization occur concerning supply- side resources?

[14] This assumes that energy efficiency programs are available for all customer classes.
[15] South Carolina Public Service Commission, Docket No 2013-208-E, *Testimony of Natalie Mims on Behalf of Southern Alliance for Clean Energy and South Carolina Coastal Conservation League*, available at: http://dms.psc.sc.gov/pdf/matters/020A97EA-155D-141F-2315BC8CD205AC3C.pdf

A. Yes. One example would be that the first rural customer did not have to pay for the full cost of stringing transmission and distribution lines to their home. Another example would be that a customer whose power is disconnected due to bad weather is not expected to pay overtime fees to linemen reconnecting their system the next day. A third example would be a customer who has lived in Florida for decades, without increasing household energy use (and perhaps self-funding energy efficiency improvements), but whose rates increase due to the cost of expanding service to meet growth in demand due to new customers and new businesses. Finally, customers that live closer to power plants or distribution substations do not generally pay lower rates even though delivering power to their home and business costs less due to the reduction in transmission, distribution and line losses.

Q. Have the Utilities conducted a bill analysis that quantifies the impact of cross-subsidization?

A. Not that I am aware of. The Utilities do provide the residential bill impacts of a customer consuming 1200 kWh a month, but this analysis does not evaluate the Utilities concerns regarding cross-subsidization. Further, the analysis is flawed because the Utilities use the same denominator (kWh consumed) for the TRC and RIM portfolios even though the TRC portfolio would result in less consumption.

- **RIM costs are higher than TRC costs because of lost revenues.**

Q. How do the RIM costs compare to the TRC costs in the Utilities applications?

A. FPL, Gulf Power and DEF did not provide either or both of RIM and TRC costs in their application, despite it being a primary component of the proposed goals. TECO estimated that the TRC portfolio would cost $53.5 million (nominal dollars) more than its RIM portfolio from 2015-2024.[16]

[16] Direct Testimony of Howard Bryant, Docket No. 13201, Exhibit No. HTB-1, Document No. 7.

Q. Which component of the costs drives the RIM test score in Florida?

A. The difference in the cost component of RIM and TRC, as I stated above, is lost revenues. "Lost revenue" is a term of art that is used in energy efficiency policy discussions to describe the revenue that the utility does not earn by saving energy instead of selling energy. Lost revenues should only apply to fixed costs, as variable costs will be reduced as energy is saved. It is important to note that lost revenues are not new costs, as energy efficiency program costs are. They are costs that have already been incurred through prior capital expansion by the utility, or sometimes called "sunk costs."

As it is in society's interest for the utility to remain financially health, some regulators allow utilities to recover some of the "lost revenue" from energy efficiency, through a lost revenue adjustment mechanism (LRAM). Simply put, a LRAM allows the utility to recovery a component of the electricity cost, even though the customer did not consume it, to ensure the financial stability of the utility.

Q. How much of the RIM costs are comprised from lost revenues?

Data supplied from Duke Energy Florida's commercial potential analysis indicated that ***over 90%*** of the costs in the RIM test are from lost revenues.[17] Similarly, in DEF's industrial potential analysis lost revenues contributed, on average, to 78% of the total measure cost. This was a significant factor in *all* industrial measure failing the RIM test. On average, DEF's residential lost revenue costs in the RIM test are 77% of total costs. Florida Power and Light, Gulf Power and TECO did not provide the cost inputs to its RIM test scores, so I was unable to determine how much of their cost was from lost revenues.

Q. How have other regulators addressed lost revenues?

[17] Duke Energy Florida, Inc. Response to SACE's First Request for Production of Documents, No. 5, *Com Achievable.xlsx; Ind Achievable.xlsx*, Apr. 16, 2014.

A. In North and South Carolina, Duke Energy Progress[18], Duke Energy Carolinas[19] and SCE&G[20] recover lost revenues for 36 months as part of their energy efficiency cost recovery proceeding. By limiting the amount of time the utilities can recover their "lost" revenues, regulators ensure that the consumers and the utilities both receive the benefit of energy efficiency.

It is important to note that, it is my understanding, that in the Florida Utilities' calculation of lost revenue for the RIM costs, they calculated lost revenues for the life of the energy efficiency measure, creating a very high numerical value on the cost side of the RIM equation.

Q. What are the other policy options to address lost revenues?

A. There are a variety of regulatory policies that the Commission could implement or explore to remove the Utilities disincentive to promote all cost-effective energy efficiency. In several states, utilities are decoupled, meaning that their revenues are no longer tied to their sales – they are tied to their customers. Another option is to more frequently review the utilities rates to ensure that they are adequately recovering their fixed costs even if sales are decline due to energy efficiency. It is my understanding that Sierra Club witness Woolf intends to discuss decoupling in his testimony, so I will not review this topic.

Another option is to more frequently review the utilities rates to ensure that they are adequately recovering their fixed costs even if sales are decline due to energy efficiency. For example, Georgia Power Company's rates are reviewed on a three-year cycle, which

[18] South Carolina Public Service Commission, Docket 2008-251-E. *Joint Proposed Order*, available at: http://dms.psc.sc.gov/pdf/matters/8C5EA467-D24A-0C1C-BC0C1D3B49CA0C7D.pdf

[19] North Carolina Utilities Commission, Docket No E-7 Sub 1032, *Order Approving DSM/EE Programs and Stipulation of Settlement*, available at http://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=c1692a27-e029-46ae-a502-400f0a38d511

[20] South Carolina Public Service Commission, Docket No. 2013-208-E, *Order No 2013-826, a*vailable at http://dms.psc.sc.gov/pdf/orders/04AA654F-155D-141F-23A63DE824A1B66E.pdf

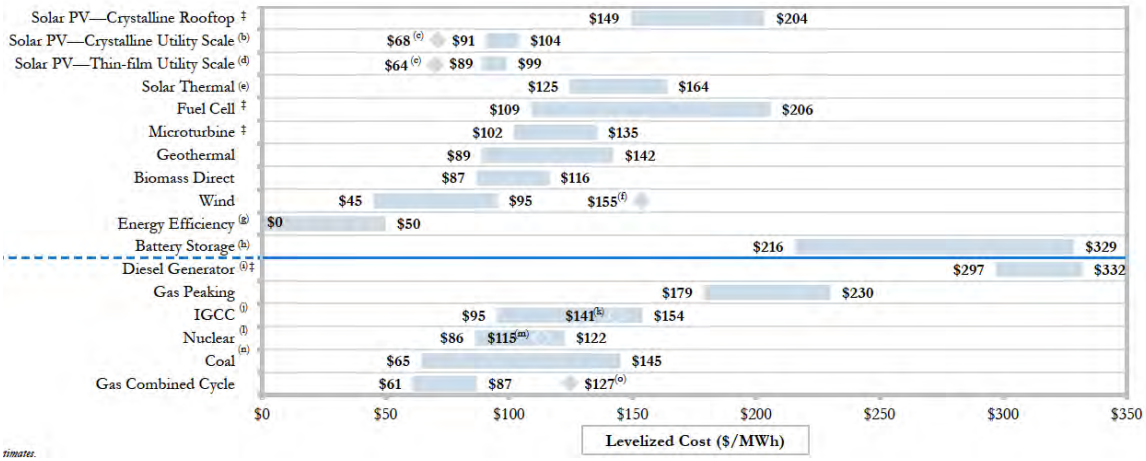
can help ensure that rates associated with the recovery of fixed costs do not result in substantial over- or under-collection of revenues.

Q. If you spread the same costs across less energy sales, won't that raise rates?

A. Generally, when a utility uses its capital to make additions to the electricity system; it asks its regulators to recover those costs. Regardless of whether the utility invests in supply side or demand side measures, there is a cost associated with that decision that will be passed along to the consumers. So it's a matter of what is causing rates to increase, and how that choice affects customer bills.

Energy efficiency is the lowest cost investment when compared to all other options, as shown in Figure 5. Energy efficiency levelized cost of energy[21] is approximately $0-50 per MWh, less than all other resources. Keeping costs down by investing in energy efficiency instead of more costly alternatives will also keep rates down.

Figure 5. Lazard 2013 Levelized Cost of Energy[22]



[21] Levelized cost of energy is a convenient summary measure of the overall competiveness of different generating technologies. It represents the per-kilowatt-hour cost (in real dollars for the Lazard analysis) of building and operating a generating plant over an assumed financial life and duty cycle.

[22] Lazard's Levelized Cost of Energy Analysis – Version 7.0., August 2013, available at http://gallery.mailchimp.com/ce17780900c3d223633ecfa59/files/Lazard_Levelized_Cost_of_Energy_v7.0.1.pdf

In addition, if sales decline, *for any reason*, there will be fewer kilowatt-hours to spread costs across, which may cause a rate increase. Consumer motivated energy efficiency investments, codes and standards, mild weather, and economic factors all cause a decline in sales that results in the same costs being spread over fewer kilowatt-hours. Fortunately, the rate of electricity is not as important to most customers as the total amount on their bill. By keeping consumption lower, and choosing the least cost resource option, the Utilities can protect Floridians from high bills both now, and far into the future. Finally, if sales were to decline significantly as a result of energy efficiency, there would have to be a large number of participants in the Utilities' energy efficiency programs. This means that there would be fewer non-participants, making the RIM argument of cross subsidization and the argument that it protects of non-participants irrelevant.

Q. What benefit-cost test should be the primary test to determine energy efficiency policy?

A. As the Commission ruled in 2009,[23] the total resource cost test. Further, the issue is not that RIM is "right" or "wrong", it is simply that, as a benefit-cost test: (1) it does not depict an appropriate picture of energy efficiency costs and benefits, and the impact of efficiency on utility system costs; (2) it does not reflect the intent of the Legislature or the Commission, and (3) it is a moot issue in this hearing. The Commission already determined what test to rely on in the last energy efficiency goals proceeding, and it is the Total Resource Cost test.

- **FEECA benefits Floridians and is cost-effective.**

Q. Did the Florida State Legislature release a report evaluating the FEECA Statute in 2012?

A. Yes. One of the primary findings of the report was that "FEECA continues to be in the

[23] Florida Public Service Commission, Order No. PSC-09-0855-FOF-EG, December 30, 2009.

public interest."[24]

Q. Does the report offer recommendations on the energy efficiency goal setting proceeding?

A. Yes. The report identified that the utility focus group found that there is uncertainty regarding the criteria used to set energy efficiency goals in Florida. The report recommended:

> To reduce such uncertainty, this report recommends that the goal-setting process be modified so that criteria for program approval are identified prior to the development of studies used for setting goals. This recommendation could be implemented through an FPSC rulemaking proceeding.[25]

Q. Are you aware of the criteria for program approval at this time?

A. No. There has not been a rulemaking proceeding in response to this recommendation, I am not aware of any informal steps that FPSC Staff may have taken to clarify the criteria for program approval prior to the development of studies used for setting goals.

Q. The report mentions transparency and the public's difficulty in engagement in FEECA. What recommendation was made?

A. The report recommended that:

> To improve data quality and accessibility, and to help improve the transparency of the analytical methods used in FEECA-related cost-benefit studies, this report recommends that the FPSC goal-setting process be modified so that utilities provide data electronically in a uniform manner and that these data be made accessible to the public, except for data that would be considered commercially

[24] Galligan et al. Evaluation of Florida's Energy Efficiency and Conservation Act, , December 7, 2012, p. 8, available at: http://warrington.ufl.edu/centers/purc/docs/FEECA_FinalReport2012.pdf
[25] *Id.* at p. 11.

sensitive.

Q. Did the Utilities provide data electronically in a uniform manner in their applications?

A. The Utilities, at the request of the FPSC Staff, did provide their goal setting testimony exhibits and work papers in spreadsheets. This was helpful because it allows parties and interested stakeholders to more easily access the data the Utilities are using as the basis for their proposed energy efficiency goals.

However, the Utilities did not provide a uniform format in their filings. For example, the Utilities did not all provide the same information or did not report a variety of data in a uniform format: (1) provide the costs associated with the TRC and RIM cost tests, (2) calculate and/or incorporate administrative costs, (3) calculate and/or incorporate incentive costs (4) impact of free-ridership on energy efficiency impacts, and (5) impact of participation assumptions and incentive levels on energy efficiency impacts.

Q. Does the *Evaluating FEECA* report address the use of benefit-cost tests in Florida?

A. Yes, the report recommends:

> that cost-effectiveness criteria focus on two issues, namely whether program participants benefit whether program benefits exceed program costs for Florida as a whole. [26]

Q. What benefit cost test satisfies those two issues?

A. Section 366.82 (3), Florida Statute states in relevant part:

In developing the goals, the commission shall evaluate the full technical potential of all available demand-side and supply-side conservation and efficiency measures, including demand-side renewable energy systems. In establishing the goals, the commission shall take into consideration:

[26] *Id* at 12.

(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.

***

As SACE Witness Wilson stated in the 2009 FEECA goal setting proceeding,

> …there can be little doubt that the plain language of section 3(a) refers to the Participant Cost Test and section 3 (b) refers to the Total Resource Cost test. [27]

This appears to be the basis for the *Evaluating FEECA* recommendation above. As such, SACE does not have a different opinion of the statute than it did in 2009.

Q. Does the *Evaluating FEECA* report discuss performance incentives for Florida utilities?

A. Yes. The report states,

> Florida is among the states that authorize performance incentives. Florida's performance incentive appears to take the form of both shared benefits and rate of return. In terms of shared benefits, the FPSC is authorized to allow jurisdictional electric utilities that exceed their goals to receive financial rewards in the form of shared cost savings for generation, transmission, and distribution services related to energy conservation, energy efficiency and the addition of DSM and renewable energy systems. The FPSC may also provide other types of financial incentives. The Commission is authorized to allow an IOU an additional return on equity of up to 50 basis points if it exceeds 20 percent of its annual load-growth through energy efficiency and conservation measures. The additional return on equity must be established by the FPSC through a limited proceeding. In Florida, as in other states, authorization to grant such incentives does not mean that they will

[27] Direct Testimony of John Wilson, Florida Public Service Commission, Docket Nos. 080407-13, July 2009, p. 18.

necessarily be provided.

Q. Does the report make a recommendation on how to address financial incentive mechanisms for energy efficiency in Florida?

A. This report recommends that the Legislature consider including in FEECA criteria for making rewards or imposing penalties. Alternatively, the FPSC could adopt a rule identifying the criteria that would inform such decisions.

I would note that while the additional return on equity is capped at 50 basis points, the statute does not appear to explicitly require the Commission to award any incentive in the form of an increased return on equity. For example, the Commission could establish an incentive based on a percentage of customer savings (known as a "shared savings" incentive), as long as the actual amount of the incentive did not exceed the statutory limit.

Q. Are you aware of the Legislature or FPSC modifying statute or regulations to inform financial incentive mechanisms?

A. No. I am not aware of any rulemaking proceedings or informal guidance that have been provided since the report was released.

Q. Did any of the Utilities discuss any of the recommendations in the PURC report in their testimony?

A. The Utilities extensively discuss the benefit-cost test in their testimony; however, none of the utility witnesses discuss their conclusion in the context of the PURC report. The Utilities did not discuss improvements to the goal setting process, transparency, or financial incentive mechanisms.

Q. Do you agree with the recommendations of the PURC report, and believe they should be adopted?

A. Yes. As the Legislature identified the need for a report on FEECA, and the report identified improvements, I recommend that the Commission should formally address

each of the recommendations.

4. Utilities' analyses are flawed and inaccurate

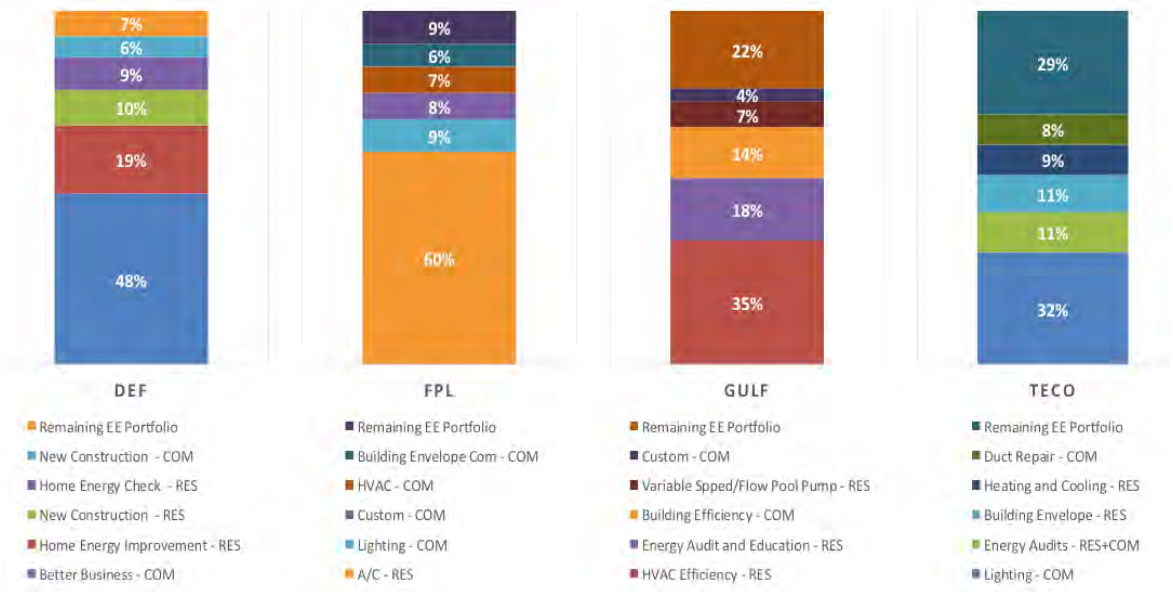
- **FEECA Utilities Costs Are Inflated, Resulting in Incorrect Benefit-Cost Scores**

Florida Utilities' Historic Costs Exceed Peers

Q. Considering the Utilities' current programs, how are the energy efficiency savings broken down by program?

A. During the first four years of the current program offerings, the top five programs generate 71-93% of the savings for each utility as shown in Figure 6. As discussed below, each of the Utilities has operated its programs to achieve results that are typically highly focused in terms of technologies supported and customers served.

Figure 6. Utilities Savings by Program, 2010-2013.



DEF's Better Business commercial energy efficiency saved about half of the portfolio savings each year, followed by the residential Home Energy Improvement program.

Together these programs comprise 67% of DEF's efficiency impacts from 2010-2013.

FPL's residential HVAC program dominates the Company's energy efficiency portfolio impacts. Approximately 60% of the energy efficiency impacts in the Company's portfolio came from this one program in 2010-2013. After the residential HVAC program, FPL's commercial lighting program has the next largest impacts, saving about 10% of the total portfolio savings.

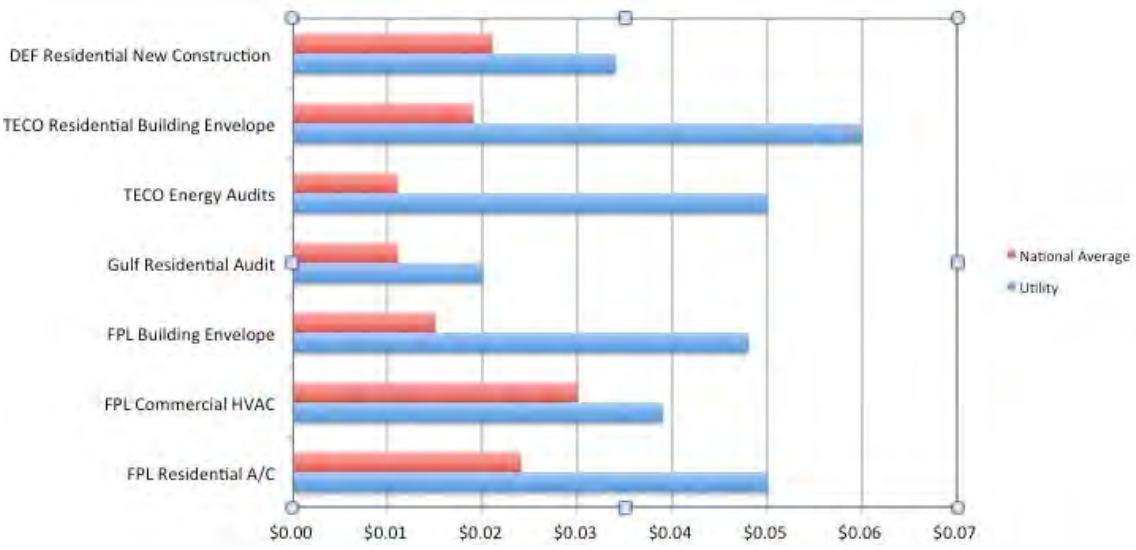
Gulf Power's savings were more diversified than FPL and DEF. Three programs produce the majority of the Company's savings: residential HVAC, residential energy audits and education and commercial building efficiency. Together these three programs comprise 67% of Gulf's efficiency impacts from 2010-2013.

Finally, TECO's portfolio, similar to Gulf, is more diversified. Commercial lighting, residential and commercial energy audits and education and residential building envelope are the three biggest programs, comprising just over half (54%) of TECO's efficiency impacts in 2010-2013.

Q. How did the Utilities program costs compare to the national average?

A. More than a third of the program impacts associated with Utilities portfolio have costs that are significantly above the average cost of comparable programs. Figure 7 illustrates the Utilities cost of saved energy based on their past filings and national average cost of saved energy for comparable programs.

Figure 7. Utilities Cost of Saved Energy and National Average Cost of Saved Energy



Q. What is the Cost of Saved Energy, and what is the significance of it?

A. Lawrence Berkeley National Lab defines cost of save energy (CSE) as, "comparable to the levelized cost of saved energy, which represents the per kilowatt hour cost (in real dollars) of building and operating a generating plant over an assumed financial life and duty cycle." It is a valuable metric to use when comparing the cost of an efficiency program to supply side resources.

- ***Recent reports also indicate Florida's energy efficiency costs are inflated***

Q. **The Lawrence Berkeley National Lab released a report on the cost of saved energy in March 2014. Can you discuss the conclusions of that study?**

A. Yes. The Lawrence Berkeley National Lab ("LBNL") published a study in March 2014 on the initial findings of its Cost of Saved Energy Project. The study presents the initial program, sector and portfolio level results for the program administrator CSE for 2009-2011 using data collected from 31 states, including Florida.

One of the conclusions of the study is that regionally, there is a trend in the cost of saved energy, although there are a few outliers. In the Southeast, Florida is a clear outlier, and

the cost of saved energy is approximately double what other Southeastern state's cost of saved energy is. As shown in Figure 8, Florida's cost of saved energy is about $0.04/kWh while North Carolina's cost of saved energy is about $0.015/kWh, and Maryland and Texas are at $0.02/kWh.

Figure 8. LBNL Cost of Saved Energy values by state for electricity efficiency programs [28]

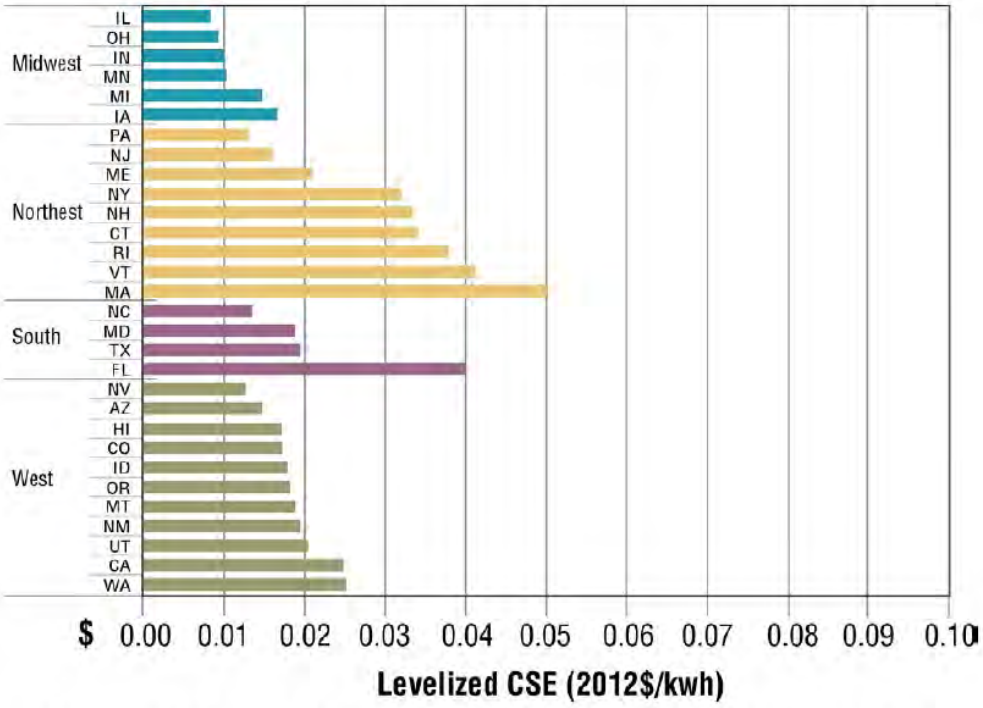


Figure 3-16. CSE values by state for electricity efficiency programs (excluding low-income programs)

Q. Did the LBNL report provide an explanation for why Florida's Cost of Saved Energy was higher than other Southeastern states?

A. No, the researchers were not able to identify why the costs were so much higher than other states in the states in the Southeast. As discussed above and shown in Figure 7, the

[28] Billingsley, et al. The Program Administrator Cost of Saved Energy for Utility Customer-Funded Energy Efficiency Programs. p37. Lawrence Berkeley National Lab. March 2014. Available at http://eetd.lbl.gov/news/article/57600/program-administrator-cost-of-s

Utilities excessive program costs from over a third of their energy efficiency impacts may provide some insight as to why Florida's costs are so much higher than other states in the Southeast.

- ***Administrative costs should not be included in goal setting costs***

Q. Should administrative costs be included in the measure level costs when evaluating for cost-effectiveness?

A. No. As discussed in SACE Witness Mosenthal's testimony in 2009, which is again applicable here:

> 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 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. [29]

Finally, the Utilities screened measures out of the energy efficiency potential based on cost-effectiveness -- inclusive of program administrative costs -- but did not take into account corresponding program benefits. This lopsided analysis results in measures being inaccurately removed from the Utilities energy efficiency potential.

Q. How much energy efficiency potential is removed based on the administrative cost screen?

[29] Direct Testimony of Philip Mosenthal, Florida Public Service Commission, Docket Nos. 080407-13, July 2009, p. 40.

A. TECO did not remove any energy efficiency measures from the potential based on the administrative cost when measures were evaluated using RIM or TRC.[30] FPL eliminated over 26,000 GWh of potential based on its "preliminary economic and screens", some component of which is the administrative screen.[31] Similarly, DEF eliminated over 7500 GWh of potential based on administrative cost, participant incentives and market penetration projections.[32] Gulf adds a administrative cost of $50/measure for residential measures; and $0.07/kWh for commercial and industrial measures.[33]

- **Utilities use of maximum incentive costs creates inflated total costs in benefit-cost tests**

Q. How do the Utilities determine the level of incentive that is appropriate for each measure when calculating their achievable potential?

A. The TECO,[34] DEF,[35] and Gulf[36] assume that they must reduce the payback period for all measures to two years when calculating their respective achievable potentials, and use that, or a RIM test of 1.0 to set their incentive level. FPL sets the incentive level to the level need to result in a Participant screen test benefit-cost ratio to 1.0, then runs the RIM test on the same measure, including the Participant incentive level, to determine if the measure passes RIM.[37]

Q. What reason did the Utilities provide for their incentive level?

TECO stated that it used a two year paypack period for its incentive to "maximize the achievable potential."[38] Gulf and DEF did not provide a reason for setting the incentive

[30] Direct Testimony of Howard Bryant, Docket No. 130201, April 2, 2014, pp. 19-21.
[31] Direct Testimony of Thomad Koch, Docket No. 130199, April 2, 2014, Exhibit TRK 4 and TRK 5.
[32] Direct Testimony of Lee Guthrie, Docket No. 130200 Exhibit 8 and Exhibit 13.
[33] Gulf Power Company's Response to SACE's First Request to Production of Documents, No.3, Final Econ w 30 yr lives – include prog costs, Apr. 16, 2014.
[34] Direct Testimony of Howard Bryant, at p. 22.
[35] Direct Testimony of Lee Guthrie at p. 31.
[36] Direct Testimony of John Floyd, Docket No. 130202, April 2, 2024, p. 17
[37] Direct Testimony of Steve Sim at p. 31.
[38] Direct Testimony of Howard Bryant at p. 22.

level to a two-year payback. FPL states that the incentive level will develop "a projection of maximum annual market penetration."[39]

Q. **What level of efficiency impacts do the Utilities anticipate achieving with this level of incentives?**

A. As shown at the beginning of my testimony in Tables 1-4, the Utilities are anticipating saving miniscule amounts of energy –less than 0.1% of retail sales annually.

Q. What is the impact of the Utilities assuming the maximum incentive level possible for the cost-tests?

A. It likely overstates the costs of achieving the Utilities proposed goals. This approach is like assuming that a hotel room is rented at the "rack rate," when in reality the hotel nearly always offers the room for a price that is much lower than the rate listed on the back of the hotel room door.

I did not receive granular enough information to assess exactly how overstated the Utilities' incentive levels are, but if the maximum available incentive level is assumed, then cost component cannot get any higher. The Utilities use this maximum incentive level is used regardless of the level of incentive that best practices would suggest is needed to motivate the customer to install an efficiency measure.

Q. Please summarize your conclusion on the cost of energy efficiency in Florida, and for the Utilities.

A. The Utilities energy efficiency programs have historically high costs, as shown through program data and independent reports. The Utilities energy efficiency planning costs in this goal setting proceeding are inflated because (1) the Utilities include the administrative cost, which is a program level cost, not a measure level cost and (2) the Utilities assume a maximum incentive, regardless of the level of incentive needed to

[39] Direct Testimony of Steve Sim at p. 39.

motivate a customer to adopt an efficiency measure.

- **Florida Utilities free-ridership methodology is flawed and outdated.**

Q. What is a free-rider?

A. A program participant who would have implemented the program's measure(s) or practice(s) in the absence of the program. Free-riders can be (1) total, in which the participant's activity would have completely replicated the program measure; (2) partial, in which the participant's activity would have partially replicated the program measure; or (3) deferred, in which the participant's activity would have partially or completely replicated the program measure, but at a future time beyond the program's time frame.[40]

Q. Are the Utilities required to evaluate free-ridership in the goal setting proceeding?

A. Yes. In regulation 25-17.0021, Florida Administrative Code, "[e]ach utility's projection shall reflect consideration of . . . free riders."

Q. What is EM&V?

A. EM&V stands for "Evaluation, Measurement and Verification," which is a critical component of the energy efficiency program cycle. EM&V allows the Utilities, regulators and interested stakeholders to understand how the energy efficiency programs are performing and what changes could optimize program implementation.

Q. Are the Utilities in Florida required to conduct EM&V on their energy efficiency programs?

A. Yes. Rule 25-170021(4)(i), F.A.C and Rule 25-170021(5)(1), F.A.C require a methodology for measuring savings, including actual efficiency impacts, and on-going measurement and evaluation results.

Q. What is the Two-Year Payback screen?

[40] Department of Energy, *SEE Action Network. Energy Efficiency Program Impact Evaluation Guide*, Evaluation, Measurement and Verification Working Group. December 2012, available at: http://www1.eere.energy.gov/seeaction/pdfs/emv_ee_program_impact_guide.pdf

A. The Utilities use a "two-year payback" screen as an alleged proxy for free-ridership. There are no other utilities in the Southeast, or the country that use this methodology. Using a two-year screen as a proxy for free-ridership is ridership is a seriously flawed approach to addressing free-ridership.

Q. What is the origin of the "two-year payback" methodology?

A. This methodology originated from a 1994 Order. This method has not been defined in any formal administrative rulemaking. Suffice to say, since 1994, the EM&V of energy efficiency has developed considerably, yet the Florida Commission is still allowing the Utilities to use a methodology from 1994 to unnecessarily screen out cost-effective energy efficiency.

Further, in SACE's deposition of Dr. Sim, he acknowledged FPL created this methodology to address free-riders in 1994 and that he was part of that proceeding. However, Dr. Sim stated he was not aware of any other utilities in other states that used it, nor how FPL chose two years as the basis for the methodology.[41]

Q. Why is the two-year payback methodology flawed?

A. First, it uniformly applies the same free-ridership rate to every measure that is economic, which is too broad. There are no other utilities in the Southeast that use a blanket methodology to identify free-ridership for all measures. Second, it is also inaccurate because it eliminates entire measures because of the *potential* for free-ridership. This is also too broad, and again, there are no other utilities in the Southeast that eliminate entire measures from their achievable potential or energy efficiency programs because there *might* be free-ridership.

Every other regulated utility in the Southeast uses surveys and gather data through their EM&V process at the measure or program level to determine how much the utility

[41] Deposition of Steven Sim, Docket No. 130199, May 2, 2014, p. 79.

incentive influenced the customer's decision to purchase an energy efficiency measure.

Q. Did SACE support the two-year payback methodology in the last FEECA proceeding?

A. No, although SACE was a partner in the technical potential study with the Utilities, the Utilities chose to exclude SACE from formal decision-making authority in the economic and potential study. The Utilities decision was expressed by changes to the Itron contract that were made at the last minute. While SACE was allowed to participate in some conversations regarding the methods used in the economic and potential study, it is my understanding that our suggestions for alternative study approaches were rejected by the Utilities. Utility witnesses then unfairly criticized SACE for its critique of the two-year payback method in testimony.

Q. Gulf Power cited the National Energy Modeling System as justification for the two year payback screen. Is that a valid reference?

A. Gulf Power stated that the National Energy Modeling System documentation characterizes the use of a two-year payback level as being "based on general utility practice." Gulf Power did not provide a citation to the modeling documentation, nor is it easily available online.

Further, a Stanford University review of NEMS documented the use of the Load and Demand Side Management submodule as

> parameterized by two estimates of the relative importance of a capital and operating costs in consumer preferences. Thus in both [commercial and residential] sectors, the complexity of consumer choice is reduced to a set of input parameters that approximate the time value of money. This design choice makes it difficult to use the model to estimate (or account for) the variety of energy efficiency market failures and behavioral complexities identified in the academic

literature (e.g., Gillingham et al., 2009, 2012; Shogren and Taylor, 2008). Addressing these topics would require a new set of input parameters that translate the barriers studied into the hurdle rate and logit framework used in NEMS. [42]

While I was unable to verify that NEMS documentation states that it is general utility practice to use the two-year payback level, the Stanford review clearly indicates that NEMS oversimplifies the factors that affect consumer choice to a "time value of money" decision. NEMS simplifies many aspects of energy markets and is not typically used by utilities for planning activities. If this is the only external source that the Utilities can point to as validation for the two-year payback level, there can be no basis for the claim that this is "general utility practice."

Q. What does TECO say about the two-year payback?

A. In response to SACE's first request for production of documents, no 7, TECO provided two documents in support of the two-year payback as an appropriate assumption for TECO to make regarding free-ridership. The response is not compelling or particularly applicable to this proceeding because TECO does not include an example of electric utilities using this assumption in planning. The documents in response are also 7 years old, which further reduces their credibility. In sum, the response TECO provided asserts that non-residential customers hurdle rate is approximately two years. However, given that the goal of FEECA is to cost-effectively reduce energy peak and sales, not overcome hurdle rates for businesses, the information in the response is inconsequential.

Q. Is it reasonable to assume that customers will purchase any efficiency measure that has a two year payback or less?

A. No. There is an entire body of evidence on market barriers to energy efficiency.[43] If all

[42] http://www.stanford.edu/~wilkejt1/Documents/End%20Use%20Technology%20Choice%20in%20NEMS.pdf
[43] *See* Golove, William; Eto, Joseph, *Market Barriers to Energy Efficiency: A Critical Reappraisal of the Rationale for Public Policies to Promote Energy Efficiency*, LBNL.March 1996, available at

customers were rational economic actors, the CFL saturation rate in Florida would be 100%. As I do not have access to the Utilities EM&V reports, I am not certain what the saturation rate is. However, in South Carolina, where utilities have been providing incentives for CFLs for several years, socket saturation is still only 18%. This means, even with an additional economic incentive, there are still non-financial barriers to efficiency measure adoption. Simply screening out measures based on an assumption that the technology will be adopted because it is economically rational is contrary to the history of energy efficiency barriers, and the policies to overcome those barriers in the United States for the last 40 years.

Q. What is the impact of using a two-year payback as a proxy for free-ridership?

A. Beyond being an ineffective and archaic policy, the two-year payback significantly reduces the achievable potential identified by the Utilities. TECO eliminated 583 GWh from its RIM portfolio and 1133 GWh from its TRC portfolio because of the two year payback.[44] FPL eliminated over 26,000 GWh of potential based on its "preliminary economic and screens," some component of which is the two year screen.[45] Similarly, DEF eliminated over 5309 GWh from its RIM portfolio and 4014 GWh from its TRC portfolio based on avoided cost and the two year payback screen.[46] Gulf eliminated 1069 GWh from its RIM portfolio and 2563 GWh from its TRC portfolio due to customer adoption projections and the two year payback screen.[47]

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http://emp.lbl.gov/sites/all/files/lbnl-38059.pdf; Vaidyanathan, Shruit et al, *Overcoming Market Barriers and Using Market Forces to Advance Energy Efficienc,*. ACEEE. March 2013, available at http://www.aceee.org/sites/default/files/publications/researchreports/e136.pdf; Ungar, Lowell et al., *Guiding the Invisible hand: Policies to Address Market Barriers to Energy Efficiency*. ASE. September 2012, available at: https://www.ase.org/sites/ase.org/files/guiding_invisible_hand_summerstudy2012_0.pdf; Austin, David, *Addressing Market Barriers to Energy Efficiency in Buildings: Working Paper* 2012-10. Congressional Budget Office. August 2012, available at http://www.cbo.gov/publication/43476.

[44] Direct Testimony of Howerd Bryant at pp. 21 -22,

[45] Direct Testimony of Thomas Koch, at Exhibit TRK 4 and TRK 5; *also* Direct Testimony of Steve Sim at p. 6.

[46] Direct Testimony of Lee Guthrie, at p. 33.

[47] Direct Testimony of John Floyd, at p. 17, Schedule 8 and 10.

Q. Please summarize your recommendations for evaluating freeridership.

A. Historically, it seems that this methodology was first used in the 1994 FEECA goal setting docket. However, it is an imprecise and antiquated methodology, and there is no reason to continue using it. Using a two-year payback as a proxy for free-ridership is inaccurate, and reduces cost-effective savings from the goal setting process unnecessarily. In addition, there is a large body of research on how utility customers are not rational economic actors. I recommend that free-ridership be accounted for as it is in the rest of the Southeast, through evaluation, measurement and verification.

- **The Utilities potential studies does not satisfy the statutory requirements, and are overly conservative, resulting in an underestimation of the efficiency potential in Florida**

Q. What is the statutory guidance for the technical potential study in Florida?

A. Section 366.82, F.S. directs the Commission to evaluate the technical potential of *all* demand side and supply side energy conservation measures, including demand side renewable energy systems.

A. Did the Utilities perform a new technical, economic, and achievable potential study for this proceeding?

A. No. The Utilities only updated their 2009 potential study. They eliminated measures that have become the baseline because of codes and standards and added in some new measures, and adjusted the participation and customer growth rates.

Q. **Is it appropriate for the Utilities to conduct a new energy efficiency potential study every three to five years?**

A. Yes. As the Georgia Public Service Commission Witnesses Barber, Spellman and Kaduk stated in their testimony in the 2013 Georgia Power IRP, there are many reasons to conduct a new potential study at the beginning of each IRP (which is a three year cycle). I

have included an excerpt of the testimony as SACE-NAM-Exhibit 7.[48]

Further, the Georgia Public Service Commission Staff found that there were significant differences in the potential studies used by Georgia Power in 2007 and 2012 (a five year period). The staff found:

> The avoided cost forecasts used in the two studies are very different. There are measures included in the 2012 study that are not included in the 2007 study. The annual kWh savings for many measures in the 2012 study are very different than what was used in the 2007 study. The total savings attributable to classes of measures are very different between the two studies. The 2007 study determined that the achievable savings potential over 10 years was 10 percent. The 2012 study determined that the achievable savings potential was 15 percent, 50 percent higher than the 2007 study.[49]

Q. Do the Utilities make conservative assumptions in their energy efficiency potential studies?

A. Yes. As I mentioned, the Utilities relied on the 2009 Itron technical potential study to craft the technical potential in this docket. As SACE Witness Mosenthal stated in the 2009 goal setting proceeding:

> 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 future price reductions for efficiency opportunities…Secondly, the measures list, while large, does not fully include all potential opportunities nor fully incorporates important synergies between measures and systems that can

[48] Georgia Public Service Commission, Docket No 36498, *Staff's Direct Testimony of Jamie Barber, Richard F Spellman, and John L. Kaduk*, P. 21, available at: http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=147829
[49] *Id at p. 32.*

result in very deep and cost-effective savings.

These concerns are still valid in this proceeding. In addition, as stated in Witness Mosenthal's 2009 testimony, generally, technical potential estimates are conservative because it is impossible to accurately account for every possible opportunity in every market segment.

Again, as in the 2009 study, the Utilities have excluded several measures from the technical (and therefore economic and achievable) potential. SACE reviewed the measures from the 2009 energy efficiency potential study and compared them to recent energy efficiency potential studies for TVA[50] and Georgia Power[51]. There are many measures that appear to have been excluded from the 2009 energy efficiency potential study that were included in the TVA and Georgia Power energy efficiency potential study. SACE has provided a list of these measures in SACE-NAM Exhibit 8.

Finally, as in the 2009 technical potential, there are several sectors excluded completely from the energy efficiency potential when the Utilities evaluated technical potential for the 2014 energy efficiency goals. As stated in the 2009 Itron technical potential study:[52]

> It should also be noted that energy and peak savings opportunities in a few end-use sectors were specifically excluded from this study. These sectors were agriculture, transportation, communications and utilities (TCU), construction, and outdoor/street lighting…the out-of-scope sectors accounted for just over 10% of total sales [for FEECA utilities].

Q. How do other utilities in the Southeast determine their economic and achievable potential?

[50] Tennessee Valley Authority Potential Study. *Final Report*, December 21, 2011, Global Energy Partners, available at http://www.tva.gov/news/releases/energy_efficiency/GEP_Potential.pdf
[51] Achievable Energy-Efficiency Potentials Assessment. Submitted to Georgia Power Company by Nexant, January 31, 2012, available at http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=140174
[52] Itron, Inc., *Technical Potential for Electric Energy and Peak Demand Savings in Florida*. March 2009.

A. After calculating technical potential, Georgia Power,[53] TVA[54], and Duke Energy Carolinas[55] then compare energy efficiency measures to their avoided cost. All measures that cost less than avoided cost pass to the economic potential.

None of these utilities pre-screen benefit-cost tests. None of these utilities exclude measures from economic potential because of administrative costs or the potential for free-ridership, as discussed earlier in my testimony.

After calculating economic potential, the utilities determine their achievable potential and participation in a variety of ways.

- Georgia Power: Two step process of (1) performing a regression analysis on EIA Form 861 data and (2) determine the base value by reviewing reports with information on incentive levels and achievable percentages. The analysis indicated that roughly 50% of the economic potential can be achieved at an incentive level of 50% of incremental cost.
- TVA: Apply market acceptance rates and program implementation factors. Market acceptance rates embody customer awareness and willingness to adopt energy efficiency equipment and measures in light of perfect information about the technologies and measures and perfect implementation of programs by utilities. Program implementation factors take into account existing market, financial, political and regulatory barriers that are likely to limit the amount of savings that might be achieved through EE programs. High achievable potential estimates are created by applying Market Acceptance Rates to economic potential. Low achievable potential estimates are created by applying both

[53] Achievable Energy-Efficiency Potentials Assessment. January 31, 2012. Submitted by Nexant to Georgia Power Company.
[54] Global Energy Partners, *Tennessee Valley Authority Potential Study*. Report 1360. December 21, 2011.
[55] Forefront Economics Inc., *Duke Energy Carolinas: Market Assessment and Action Plan for Electric DSM Programs*. North Carolina.,. February 23, 2012.

Market Acceptance Rates and Program Implementation Factors.

- Duke Energy Carolinas and Duke Energy Progress: Achievable potential is determined given specific program designs and annual participation targets refined from experience.

Q. Do the Utilities provide a comparable level of detail as other Southeastern utilities regarding their technical, economic, and achievable potential?

A. No. While the Utilities' process to identify their technical potential is fairly straightforward, the Utilities descriptions of determining their economic and achievable potential are very convoluted and difficult to follow.

Q. **How did the Utilities determine the economic and achievable potential in their energy efficiency potential studies?**

A. In order to determine the economic and achievable potential the Utilities used 4-5 screens to eliminate measures. Table 5 describes the screens used.

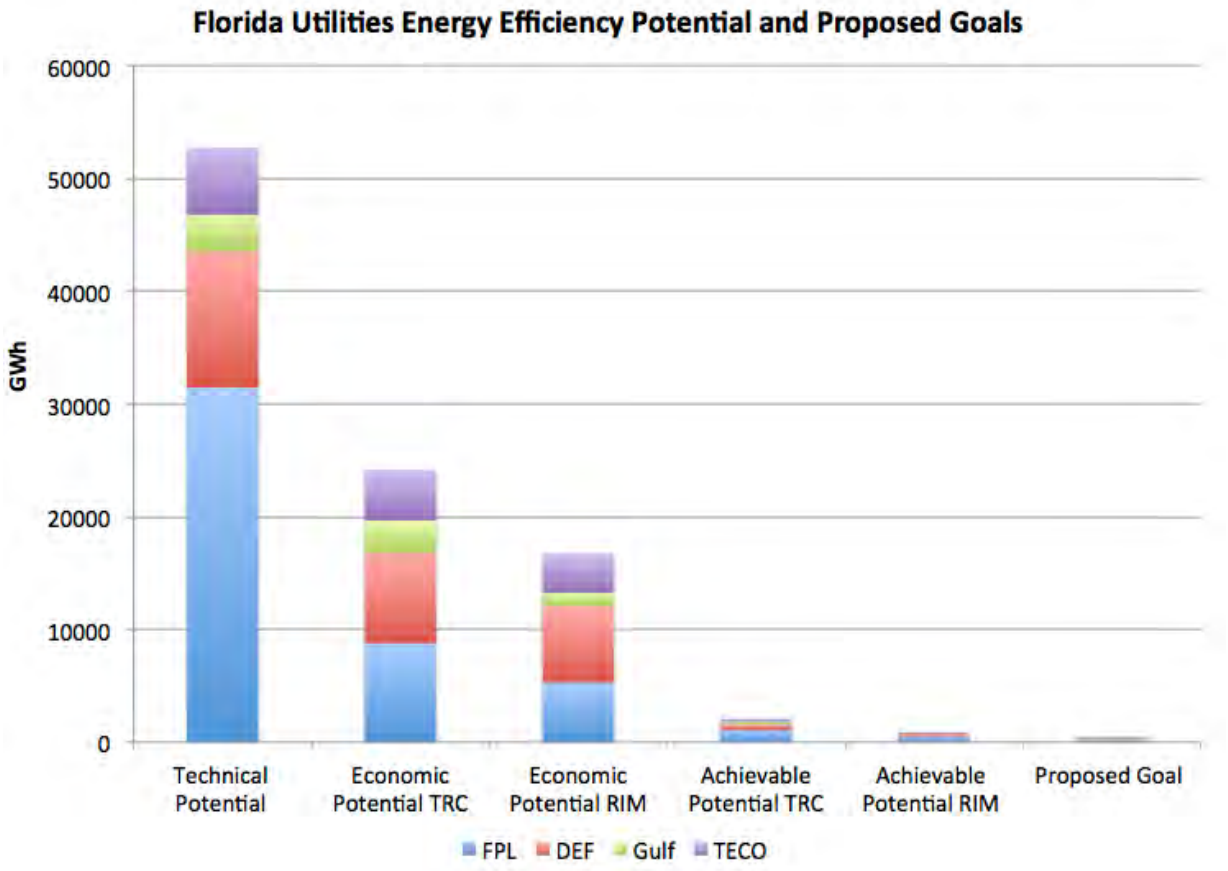
Table 5. Economic and Achievable Potential Screens

	Description
Pre benefit-cost screen	Run benefit-cost test with lost revenue requirements only in RIM; and participant cost only in TRC. Eliminate measures that do not pass RIM or TRC.
Administrative cost	Run benefit-cost tests with administrative costs only, eliminate measures that do not pass RIM or TRC.
Potential for Free-ridership	Run benefit-cost test to see if customer payback is <2 years in RIM and TRC. Eliminate measures with <2 year payback in RIM and TRC.
Incentive level	Determine incentive level by providing the lesser of a two year payback or the incentive level to take RIM or TRC to 1.05
Participation level	Varies by utility. Market penetration models for DEF and FPL.

Figure 9 displays each of the Utilities technical, economic, achievable and proposed goals. As shown, FPL's has the most significant reduction in its technical potential.

SACE-NAM-Exhibit 9 has figures with each of the Utilities technical, economic, achievable and proposed goals.

Figure 9. Florida Utilities Energy Efficiency Potential and Proposed Goals



Q. Do you have concerns about the screens the Utilities use to create their economic and achievable potential?

A. Yes, I have several: (1) the screens are opaque, (2) as I discussed earlier, administrative costs should not be included in a measure level analysis, and the two year screen should not be used as a proxy for free-ridership, (3) the incentive level should not be used as a screen to eliminate measures, (4) the Utilities are not considering the benefits of measures correctly, and (5) the obfuscation of participation data, a key component in the potential

study, makes evaluation difficult.

Q. What makes you say that the Utilities economic and achievable screens are opaque?

A. There is little information provided by the Utilities regarding the impact of each of these screens, or the sizable difference between the achievable potential and the Utilities proposed goals. For example, I cannot determine the impact on the efficiency potential of: (1) administrative costs for Gulf, FPL or DEF, (2) participation levels, for any of the Utilities, (3) avoided cost for Gulf, FPL or DEF, (4) free-ridership for Gulf, FPL or DEF and (5) the total cost or benefits, in real or nominal dollars of the RIM and TRC tests for any of the utilities.

Q. Can you restate why administrative costs should not be included in measure level analysis?

A. 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 (collective referred to as program administrative costs). As noted earlier, Section 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.

Q. Can you restate why the two-year payback is a poor methodology for evaluating free ridership?

A. First, it uniformly applies the same free-ridership rate to every measure that is economic, which is too broad. Second, it is also inaccurate because it eliminates entire measures because of the *potential* for free-ridership. Every other regulated utility in the Southeast uses surveys and gather data through their EM&V process at the measure or program level to determine how much the utility incentive have influenced the customer's decision to purchase an energy efficiency measure.

Q. Why is it inappropriate to use the incentive payment to eliminate efficiency measures from the potential study?

A. I am not aware of any utility that screens measures out of its potential based on incentive level. While I have not reviewed the methods for every utility in the country, my colleagues and I have reviewed many utility potential or program planning studies from utilities in every region of the country.

With respect to utilities in the Southeast, after determining the achievable potential, Georgia Power and TVA estimate participation levels based on incentive. These utilities do not eliminate measures because they cannot "cost-effectively" achieve a two-year payback. Notably, none of these utilities offered substantial energy efficiency programs when the Utilities began to use the two-year payback methodology. As each of these utilities (and their regulators) worked through the process of developing their planning methods, they did not choose to follow Florida's practices.

Well-planned energy efficiency programs do not focus exclusively on incentive payments as a planning and program design criterion. The best practice among utilities is to use a variety of criteria to determine the appropriate mix of technical assistance, marketing/education activities, trade ally training and incentive levels to overcome specific barriers to adoption for the measure and program.

Q. What is your concern with the benefit side of the benefit-cost tests?

A. The Utilities do not appear to take into account non-energy benefits, also known as Other Program Impacts (OPI). More specifically, OPIs are the costs and benefits that are not currently captured by the avoided cost or the energy efficiency savings.[56] Programs targeted to the low- and fixed-income sector have numerous OPIs; for example, reduced

[56] Woolf, Tim, et al. Energy Efficiency Cost-Effective Screening. RAP and Synapse Energy Economics. November 2012, available at: http://www.raponline.org/event/the-importance-of-effective-energy-efficiency-cost-effectiveness.

customer arrearages and reduced bad debt write-offs for utilities, as well as improved health and safety, increased comfort and aesthetics, and reduced maintenance costs for participants.

OPIs are particularly important when using the Total Resource Cost ("TRC") test, one of the standard tests used to determine program cost-effectiveness.[57] Currently, there are 12 states that account for OPIs in their TRC evaluation.[58] Florida is not one of those states. Accordingly, in the current TRC test as applied by the Utilities, OPI benefits are not accounted for and show up in the cost-test as having zero value—resulting in a TRC score that is skewed and misleading. The Commission should reconsider the inequitable result of counting of all costs, but not all benefits, as the current Total Resource Cost test does.

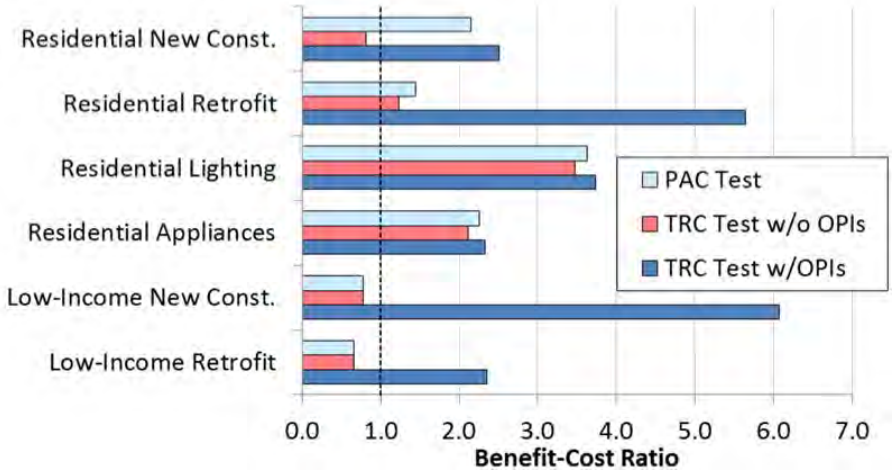
Figure 10, below, shows six Massachusetts energy efficiency program cost-test scores: first using the program administrator test, second using the total resource cost test without OPIs, and finally the total resource cost test with OPIs.[59] As the chart shows, when OPIs are considered in the cost-effective evaluation, the low-income new construction and low-income retrofit programs move from being uneconomic to cost-effective.

[57] Woolf, Tim, et al. Best Practices in Energy Efficiency Program Screening, Prepared for National Home Performance Council by Synapse Energy Economics, July 2012, available at: http://www.nhpci.org/images/NHPC_Synapse-EE-Screening_final.pdf

[58] Woolf, Tim, et al. Energy Efficiency Cost-Effective Screening, page 5. RAP and Synapse Energy Economics. November 2012, available at: http://www.raponline.org/event/the-importance-of-effective-energy-efficiency-cost-effectiveness.

[59] Excerpted from Woolf, Tim, et al. Energy Efficiency Cost-Effective Screening. RAP and Synapse Energy Economics. November 2012, available at: http://www.raponline.org/event/the-importance-of-effective-energy-efficiency-cost-effectiveness.

Figure 10. Massachusetts Energy Efficiency Program Cost-Test Scores[60]



Q. How do the utilities calculate participation rates?

A. The Utilities all appear to use different methodologies to calculate participation rates. FPL Witness Koch provides the most detail, stating that FPL employed a modeling tool on a measure-by-measure basis relying on a number of elements that reflect FPL's market experience:

- Participant's years-to-payback (using the maximum rebates);
- Payback Acceptance Curves
- Historical adoption rates
- Projected changes in market conditions
- Impacts of the delivery channel

However, there is no detail provided as to what market research was used to create payback acceptance curves, what empirical factors or qualitative factors affect historical adoption rates, and if there are any additional changes in market conditions beyond increasing codes and standards. Finally, instead of considering how best to work with participating independent contractors, FPL uses the inappropriately developed efficiency

[60] PAC refers to Program Administrator Cost Test, an alternative name for the Utility Cost Test.

potential to determine whether or not the contractors will participate in the program, and if the low efficiency potential it has created will further restrict customer access to the program. The circular logic is exhausting.

TECO mentions that it updated participation levels, but does not provide any detail about how or what the impact of the participation levels are. DEF Witness Guthrie states that DEF applied a market penetration analysis to estimate participation projections.[61] Gulf Power states that customer adoption projections were developed based on the level of economic benefit provided to the customer.[62]

Given the obfuscation of participation data by the Utilities, it is difficult to specifically critique this aspect achievable potential created by the Utilities.

Q. **What is the impact of these screens on the Utilities energy efficiency goal?**

A. As shown in NAM Exhibit 4, the Utilities proposed goals are less than 2% of the technical potential.

Q. Are the Utilities evaluating *all* cost-effective potential, as required by the statute?

A. No. The fact that sectors are explicitly excluded from the technical potential illustrates that not all potential was evaluated. In addition, the convoluted and inappropriate screens for the economic and achievable potential result in the Utilities not evaluating all cost-effective potential.

Q. What is an appropriate level of energy efficiency savings goals for Florida Utilities?

A. In the absence of meaningful analysis, Florida Utilities should aspire to achieve 1% of retail sales annually. Currently, 14 states are saving at least 1% of electricity sales each year, and the leading state saved upwards of 2% of electricity sales a year, based on the most recent data available (2011).[63] While it is not realistic to assume that the Florida

[61] Direct Testimony of Lee Witness Guthrie at pp. 31-32.
[62] Direct Testimony of John Floyd at p, 17.
[63] Downs, et al., *The 2013 State Energy Efficiency Scorecard*, November 2013.

Utilities could achieve 100% of cost-effective energy efficiency potential, 1% of sales is a reasonable annual savings target for what an innovative energy efficiency program could achieve over the next few years. Given that five states achieved this level of savings in 2009,[64] it does not seem unreasonable that Florida Utilities could achieve 1% in upcoming years. Gulf Power, in 2013 achieved 0.65% savings as a percent of sales – almost doubling its energy efficiency impacts from 2012. Certainly the other Florida Utilities could perform similarly. Furthermore, in the long run, it is likely that additional practices or technologies will be developed that offer further opportunities to achieve cost-effective energy savings, offering the opportunity to sustain high levels of annual program impacts for many years to come.

Q. Please summarize your recommendations on the Utilities' technical, economic and achievable potential.

A. The Utilities should conduct a new energy efficiency potential study for each goal-setting proceeding. A variety of inputs change over five years. When conducting the energy efficiency potential study, the Utilities should allocate funding to investigate measures for the technical potential instead of asking interested parties to provide granular details. The economic potential screen should only eliminate measures that cost more than the utility's avoided cost, and program level costs should not be evaluated, only measure level cost should be analyzed at this stage. The utility should provide a high, medium and low achievable potential based on varying penetration rates.

Q. What findings should the Commission reach with respect to the Utilities' technical, economic and achievable potential?

A. Based on the flawed nature of the technical, economic and achievable potential by the Utilities, I recommend that the Commission set energy efficiency goals of 0.75% of retail

[64] Sciortino, et al., *The 2011 State Energy Efficiency Scorecard*, October 2011.

sales for the Utilities, with the intent of ramping up to 1% in another year. I also recommend that the Commission require the Utilities to initiate a new proceeding at the conclusion of this proceeding. In this new proceeding, I suggest the Utilities conduct a full technical, economic and achievable potential study, in an open and transparent way that allows the residents of Florida to weigh in their energy future. Further, this new proceeding could be an opportunity for the Commission to explore a lost revenue adjustment mechanism and performance incentive to create the appropriate incentives for the Utilities to pursue all cost-effective energy efficiency.

5. FPL and DEF do not adequately incorporate energy efficiency into their resource planning, resulting in unnecessarily low efficiency goals

Q. How do the utilities incorporate energy efficiency in their resource planning in this proceeding?

A. Each of the Utilities has its own methodology. My review focuses on FPL and DEF because they are the larger utilities. I will start with my review of FPL's incorporation of energy efficiency in its resource plan.

Q. How does FPL incorporate efficiency into its resource planning?

A. According to FPL Witness Sim, Step 5 of FPL's DSM planning process involves creating a Supply Only resource plan as well as plans with some amount of DSM. One important aspect of Step 5 is that if DSM resources cannot meet projected needs then a supply option is added first and DSM resources are reduced to exactly meet FPL's need.

Q. What are your overall comments on FPL's resource planning process?

A. FPL's resource planning lacks analytical rigor and transparency, and therefore any credibility. What little optimization analysis FPL did perform did not examine any additional energy efficiency after 2014. Moreover, the value of FPL's limited analysis is questionable since FPL failed to provide SACE with the files it requested despite

repeated communications with FPL.

Q. How does FPL's process lack analytical rigor?

A. Credible resource plans include analysis using what's known as a capacity expansion model. A capacity expansion model creates portfolios of resources to meet a utility's future needs. The benefit of a capacity expansion model over manually creating these portfolios is that it can eliminate portfolios that do not meet requirements such as reserve margin and it constructs those portfolios so as to meet some objective such as minimization of cost (revenue requirements).

FPL licenses a very popular capacity expansion model called Strategist, however, as Dr. Sim testified in his deposition in this case "We use a [sic] Strategist model in only one instance. In creating the supply only plan…"[65] The inputs and outputs for a single Strategist run can be reproduced in a series of reports.

Q. How does FPL's process lack transparency?

A. For example, of the more than 50 reports Strategist produces for each run, FPL gave SACE just three different Strategist reports pertaining to 16 different portfolios. We were able to ascertain that these reports relate to the single Strategist run FPL performed. But no other meaningful information could be garnered because FPL still failed to provide the full set of inputs and outputs we requested.

After further follow-up FPL stated that these were the only files related to SACE's request for Strategist files. This could only be true if FPL deleted the executable Strategist file after producing the reports it gave to SACE. FPL's inability to even provide the information we requested should leave this Commission with serious doubt about the credibility of FPL's planning process.

Q. Despite the fact that only limited reports were provided, is there anything that you

[65] Deposition of Steve Sim at page 39, lines 18-19.

can say about the one Strategist run related to this docket that FPL did perform?

A. The limited reports FPL provided suggests: (1) that FPL either limited the resources available for Strategist to choose such that a combined cycle unit in 2019 was always chosen or; (2) FPL forced Strategist to choose the combined cycle unit.

Q. That 2019 combined cycle unit is in fact FPL's avoided unit for purposes of screening DSM measures, correct?

A. Yes, it is. And as a result of the few Strategist report FPL gave SACE, it does not appear that FPL can demonstrate that its choice of this unit for avoided cost purposes was the best choice for the system and customers.

Q. Does the choice of the combined cycle in 2019 otherwise materially affect FPL's DSM goal setting?

A. Yes, it does. As I mentioned above, FPL Witness Sim states that DSM resources cannot meet projected needs then a supply option is added first and DSM resources are reduced to exactly meet FPL's need. As Dr. Sim describes at page 46, lines 4 through 13 of his testimony:

> For example, returning to Exhibit SRS-8 and looking at Columns 10 and 11 for the year 2020, a resource need of 1,512 MW (Supply) or 1,260 MW (DSM) is presented. However, if a new CC unit of 1,269 MW (Summer) is added in the year 2019 to meet the 2019 resource need, the projected remaining resource need for the year 2020 will be reduced to 243 (= 1,512 – 1,269) MW (Supply). The equivalent DSM MW value would become 203 MW (= 243/1.20) In this case, 203 MW of DSM could fully meet the remaining resource need in the year 2020 (if we temporarily set aside the question of whether this DSM addition is desirable from economic, non-economic, and reliability perspectives).

This approach is fatally flawed and completely ignores economic considerations. It has

nothing to say about the cost-effectiveness of DSM instead relying entirely on the metric of whether peak needs are met or not. As a result, Dr. Sim has no basis upon which to conclude that "FPL could not have cost-effectively accommodated more than 337 MW of DSM in the 2015-2025 period"[66] since that conclusion is based solely on FPL's calculation of need remaining after considering the supply-side resources it intends to add, and not on the cost-effectiveness of resources.

Finally, this approach is even more illogical considering that FPL could build a combined cycle plant with total output less than 1,269 MW. Many other plants have been built at lower output, such as Duke Energy Carolina's recently approved Lee units.

Q. Does FPL have plans that evaluate more DSM than FPL's preferred amount?

A. In Step 5, FPL does include "non-conforming plans" that include more DSM. I would note that FPL calls these plans "non-conforming" because they do not always meet FPL's unnecessary generation-only reserve margin criteria. There is no evidence that the supply side additions to these plans are anything other than hardwired.

If the plans with higher levels of DSM were optimized appropriately then you might see Strategist choosing a smaller CC in 2019 for example, which would make these plans look more financially attractive than they currently do.

Q. How does FPL evaluate the financial viability of the plans in Step 5?

A. The plans were evaluated on the basis of levelized system average electric rate. This is illogical because customers care about their bills, not their rates and since bills are a function of consumption *and* rates, FPL is painting an incomplete economic picture.

Q. What is a more appropriate metric than levelized system average electric rate to evaluate DSM in Step 5?

A. The present value of revenue requirements (PVRR) is the best way to evaluate cost from

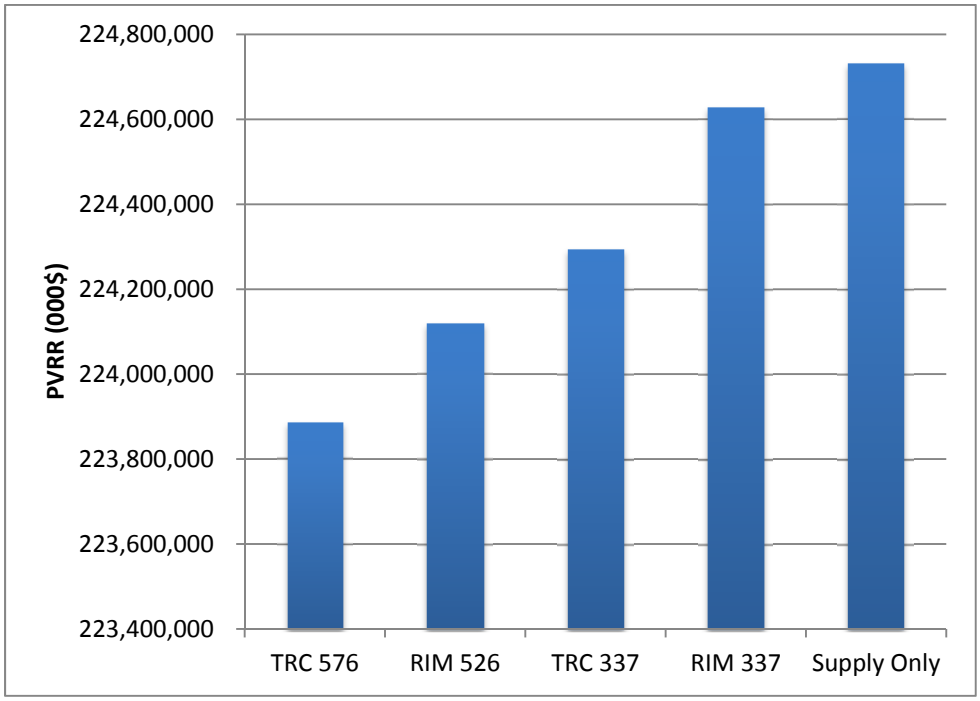
[66] Direct Testimony of Steve Sim at p. 50, lines 4-6.

the customers' perspective. However, as Dr. Sim testified in Docket No. 130009-EI "From an economic standpoint or perspective, we look at resource options that provide our customers reliable service at the lowest possible electric rates, ***not necessarily the lowest possible cost*** [emphasis added]."

Q. What, if anything, can you say about the PVRR of FPL's plans?

A. Despite the many flaws of FPL's DSM screening process, the PVRR results show exactly what one would expect – that higher levels of energy efficiency result in lower cost to customers.

Figure 11. Present Value Revenue Requirement of FPL's Five Plans



As Figure 11 demonstrates, the TRC 576 plan, with the highest level of DSM FPL analyzed in this step, results in the lowest cost to customers. I would note that while it's not entirely clear from Dr. Sim's testimony, it's my understanding that the difference between the TRC 337 and RIM 337 plans is that they include different measures.

Q. It appears that the differences in PVRR between all of these plans is small, is that correct?

A. Absolutely. But that is because the amount of energy efficiency in any of these plans is very small indeed, not because energy efficiency can't significantly reduce revenue requirements.

Q. What are your overall comments on DEF's resource planning process?

A. DEF uses a flawed resource planning process that does not appropriately estimate its avoided costs.

Q. Please explain.

DEF uses Strategist, a capacity expansion model, to create an avoided supply-side plan for screening against DSM measures. Strategist is a powerful tool compared to spreadsheet analyses, but its ability to produce useful information is also a function of the information it has to work with. In the case of DEF, the Strategist model was so constrained as to apparently give DEF the "answer" it wants rather than offering anything approaching an objective result.

Strategist allows the user to "hardwire" resources into its plan so that the model must include the specified resource in the year and in the quantity that the user dictates. Of the 5513 MW added by Strategist between 2014 and 2018, only 2323 MW was not hardwired. Of that 2323 MW, 1671 MW represents existing capacity at the Hines Energy Complex along with 220 MW arising from chiller upgrades from those units.[67] Of those remaining 652 MW that were not hardwired, two CT units (438 MW total) chosen by Strategist in 2016 and 2017 were not included in DEF's avoided cost for unexplained

[67] http://www.pennenergy.com/articles/pennenergy/2014/05/duke-energy-proposes-new-gas-power-projects-for-florida.html

reasons. That left just one 214 MW CT coming online in 2018 as the first avoided unit for purposes of DSM screening. The effect of this assumption is that there are no avoided generation capacity costs until 2018. This makes absolutely no sense and clearly biases DEF's analysis against DSM. On top of that the CT coming online in 2018 appears to be much lower in cost than the CT in 2016, again without explanation and therefore understating the avoided cost.

Even some of the hardwired resources ought to have been included in the avoided cost. Chiefly, the Citrus combined cycle units slated to come online in 2018 with a total of 1820 MW were forced into the supply-side plan, but excluded from the avoided cost despite the fact that DEF has not even filed for a certificate of need for these units.

- ***FPL's Generation Only Reserve Margin unnecessarily limits the EE potential.***

Q. Let's start with the reserve margin that applies to all Florida utilities. What reserve margin requirement must Florida utilities comply with?

A. FPL uses a 20 percent reserve margin. Though Duke Energy Florida and TECO do not say so in their testimony, it is my understanding that they also use a 20 percent reserve margin.

Q. What is the origin of the 20 percent requirement?

A. The 20 percent reserve margin requirement was established by order of this Commission in 1999.

Q. Given that the reserve margin requirement was established in 1999, does 20 percent seem like a reasonable reserve margin today?

A. No, it does not. Predicating today's reserve margin requirement on a stipulation agreed upon by FPL, Florida Power Corporation and TECO fifteen years ago is akin to using a DSM technical potential study from 1999. Today, best practice for developing a reserve margin requirement is based on a probabilistic standard such as Loss of Load Probability

(LOLP).[68] I've seen no evidence that the 20 percent requirement is based on such a standard. Indeed, FPL draws a distinction between the 20 percent reserve margin requirement and its Loss of Load Probability criterion of 0.1 days per year,[69] as does Duke Energy Florida.[70]

Q. How would you expect Florida's reserve margin requirement to change if it were based on a probabilistic study?

A. I would expect the reserve margin requirement to decrease. The 20 percent reserve margin requirement is higher than any other of which I'm aware with the exception of the Maritimes region of the Northeast Power Coordinating Council (NPCC). In addition, DEF stated in its 2014 Ten-Year Site Plan that "resource additions are typically triggered to meet the 20 percent Reserve Margin thresholds before LOLP becomes a factor."[71]

Q. But doesn't Florida's peninsular nature mean that it needs a higher reserve margin requirement to reliably serve load?

A. That's certainly possible, but absent the appropriate analysis, it is speculation to conclude that a 20 percent reserve margin is necessary to account for such factors.

Q. How is FPL's Generation-Only Reserve Margin different than its Reserve Margin?

A. FPL's reserve margin accounts for both generation and DSM resources, while the Generation Only Reserve Margin (GRM) does not include an incremental energy efficiency and load management in the calculation.

Q. Why does FPL assert a GRM is necessary?

A. FPL asserts that increasing amounts of EE and DSM may impact system reliability. It has identified the GRM as the appropriate way to study this impact on the system.

[68] See for example, page 36 of NERC's August 2012 Reliability Assessment Guidebook.
[69] *See* Direct Testimony of Steven R. Sim, pp. 18 and 19.
[70] Duke Energy Florida's 2014 Ten-Year Site Plan at page 3-16.
[71] *Id*.

Q. Do you agree that FPL's GRM is necessary?

A. No. FPL concluded that a GRM was necessary for two reasons. First, because it reduces LOLP values. LOLP is thought to balance reliability and economics, so the point of the GRM should not be to minimize LOLP. Further, FPL gave no indication as to whether its LOLP standard would be compromised absent the GRM.

Second, FPL concluded that the GRM was beneficial because it increased reserves. The simple fact that more reserves are available at peak times does not mean that those reserves are needed or appropriately balance economics and reliability. Further, DSM would also reduce LOLP values and increase reserve margins, so it makes no sense to set a separate standard for generation based on these criteria.

Finally, the fact that FPL chooses not to apply the GRM until 2019 suggests to me that the standard is arbitrary. A planning reserve margin can change from year to year certainly, but I'm not aware of any reliability organization that simply chose to delay implementation of a reserve margin requirement until five years down the road. FPL have given no indication as to why reliability should not be compromised currently without the GRM but is necessary starting in 2019.

Q. What is the impact of FPL using a GRM on DSM in this proceeding?

A. FPL determined its RIM 526 MW and TRC 576 MW sensitivity case plans are were non-conforming, and thus not eligible under FPL's criteria to continue to be evaluated in the goal setting proceeding. Thus the GRM could have the effect of unnecessarily limiting FPL's DSM efforts.

6. Recommendations

Q. What are your recommendations regarding the use of benefit-cost tests in the FEECA goals setting proceeding?

A. I recommend that the Commission continue using the Total Resource Cost test. While the

Utilities have a preference for the RIM test, it is not an issue of whether RIM is "right" or "wrong", it is simply that, as a benefit-cost test: (1) it does not depict an appropriate picture of energy efficiency costs and benefits, and the impact of efficiency on utility system costs; (2) it does not reflect the intent of the Legislature or the Commission. Further, the Commission determined that the TRC test was the best tool to use in 2009.

Q. What are your recommendations regarding the *Evaluating FEECA* report recommendations?

A. I recommend that the Commission address the recommendations from the *Evaluating FEECA* report. In particular, I recommend that the Commission address: modifying the goal setting process so the criteria for program approval are developed prior to the development of studies; improve the transparency of the FEECA cost-benefit studies by requiring the Utilities to report data uniformly and electronically; and the adoption of a rule identifying criteria to address performance incentives.

Q. What are you recommendations on the Utilities program costs?

A. The Utilities energy efficiency programs have historically high costs, as shown through program data and independent reports. I recommend that the Commission instruct the Utilities to, through the evaluation, measurement and verification process, provide an explanation as to why their program costs are higher than the national average.

Q. What are your recommendations on Florida's free-ridership methodology?

A. I strongly recommend that the Commission adopt a free-ridership methodology that is based in the evaluation, measurement and verification process, as the rest of the Southeast and country do. The current methodology is very flawed because it uniformly applies the same free-ridership rate to every measure that is economic, and eliminates entire measures because of the *potential* for free-ridership.

Q. What are your recommendations on the Utilities technical, economic, and

achievable potential study and proposed goals?

A. Based on the flawed nature of the technical, economic and achievable potential by the Utilities, I recommend that the Commission set energy efficiency goals of 0.75% of retail sales for the Utilities, with the intent of ramping up to 1% in another year. I also recommend that the Commission require the Utilities to initiate a new proceeding at the conclusion of this proceeding. In this new proceeding, I suggest the Utilities conduct a full technical, economic and achievable potential study, in an open and transparent way that allows the residents of Florida to weigh in their energy future. Further, this new proceeding could be an opportunity for the Commission to explore a lost revenue adjustment mechanism and performance incentive to create the appropriate incentives for the Utilities to pursue all cost-effective energy efficiency.

Q. What are your recommendations on the FPL and DEF's inclusion of energy efficiency in their resource planning?

A. Based on SACE analysis, FPL's resource planning lacks analytical rigor and transparency, and therefore any credibility and DEF uses a flawed resource planning process that does not appropriately estimate its avoided costs. Further, FPL is proposing using an unnecessary GRM that may further limit the amount of efficiency it includes in its planning. These are all factors that contribute to the need for comprehensive energy planning in Florida. Florida has no integrated resource plan (IRP) filing requirement. The Florida planning process, in its present form, is composed of three components. These are: 1) the Ten-Year Site Plan; 2) the FEECA; and 3) the need determination for power plants.

At the heart of the Florida planning process is the Ten-year Site Plan. The Site Plan is submitted to the Florida Public Service Commission annually by electric generation

utilities with a generating capacity greater than 250 MW.[72] The plans are filed with the Commission on the first working day of April of each year, and date from December 31 of the prior calendar year.

The process is not in itself an IRP, but a long range planning document that summarizes any internal resource planning and decisions made by the utility. The Florida Public Service Commission cannot require changes to the plans. As annual summaries of the utilities' resource decisions, the Ten-year Site Plan process does not consider alternatives offered by stakeholders (other than oral comments provided by the public at the annual Ten-year Site Plan workshop) and there is no docket established or opportunity for discovery by stakeholders.

The lack of an open, transparent and robust IRP process may be placing unnecessary risk and cost on Florida's electricity customers. An IRP process, structured correctly, offers the regulators the opportunity to ensure that state's electric utilities are pursuing least cost, least risk alternatives while still maintaining system reliability.

Q. Does this conclude your testimony?

A. Yes.

[72] R. 25-22.071, F.A.C.

BY MR. CAVROS:

Q. Ms. Mims, do you have a summary of your testimony?

A. I do.

Q. Would you please go ahead and read that for us now?

A. Good evening, Chairman and Commissioners. My testimony focuses on three topics:

First, that the Florida utilities' proposed goals, if approved, will dramatically roll back energy efficiency efforts in Florida by 87 to 99 percent, at precisely the time that we should be ramping up efficiency.

Second, the basis for the utilities' proposed goals is flawed on numerous grounds.

Third, SACE's proposed goals represent an achievable level of energy efficiency that is in alignment with many states' efforts in the United States and the NAACP 2014 Just Energy Policies Report in Florida.

First, the utilities' proposed goals. The utilities' proposed goals effectively eliminate efficiency offerings to Florida customers, including those who have the greatest need for access to the cheapest energy resource, energy efficiency. The

utilities claim their implementation of energy efficiency for over 30 years, increasing energy efficiency building codes and appliance standards, and low natural gas prices hinder them from capturing more efficiency.

However, these concepts, building codes, and low natural gas prices have not eliminated efficiency potential in other areas of the country that have had long-standing efficiency programs. Customers across the country are reaping the benefit of cost-effective efficiency saving delivered by well-run utility programs. While codes and standards and fuel prices may impact the program offerings, they do not eliminate the savings potential.

The proposed goals, if approved, will invariably lead to programs that are dramatically reduced in scope. What does that mean? While many of us in this room may have the information and the financial resources to implement energy efficiency measures, there are customers, residential and businesses, that do not have this information or the financial resources to do so, especially those with lower incomes and on fixed incomes and small businesses. Hence, they look to their hometown utility to help them lower their energy use and save money on their bills.

With these proposed goals, the utilities are leaving their customers with fewer options for reducing their energy use.

Second, the reason that the utilities' proposed goals are so low is because there are errors in every step of their analysis that constrict the number of measures that can compete against the supply-side options, therefore not placing energy efficiency on a level playing field with supply-side options. The technical potential screening did not include all sectors of the economy, as I outlined in my testimony. The economic potential, as we have discussed already yesterday and today, contains the arbitrary two-year payback screen which eliminates between 3,000 and 13,000 gigawatt-hours of efficiency.

While the utilities are required to consider free-riders, the two-year payback is an inappropriate, wholly arbitrary way to address free-riders. The use of evaluation, measurement, and verification is best practiced across the United States for identifying free-riders.

Further, the utilities rely on the RIM test to determine their proposed efficiency goals. Lost revenues are included on the cost side of the RIM equation, and in Florida, lost revenues are calculated

at the highest cost possible. This means that lost revenues are calculated for the lifetime of the efficiency measure. In this proceeding, lost revenues are the overwhelming factor that drive costs up, and subsequently cost measures to Fail the RIM test.

When utilities assume that they will collect lost revenues on an energy efficiency measure for the entire life of the energy efficiency measure, it means that the utility splits the benefit between itself and the customer unfairly. The benefit to the customer of energy efficiency is a lower bill, but if the utility requires the customer to pay them for every kilowatt-hour saved in addition to the measure cost, efficiency will certainly appear to be an expensive measure.

Regulatory policy exists and is used in the Southeast and around the country to address lost revenues as an alternative to the utility assuming that they will collect the lost revenues for the life of the measure. At minimum, the lost revenue collection is limited to three years for many utilities in the Southeast, where the utilities' revenues are broken from their sales through a revenue decoupling model.

If the utilities examined the cost of their electric system using present value revenue

requirements, they would be in agreement with SACE that energy efficiency costs loss than the alternative options. In fact, FPL's own analysis shows this. This shifts the conversation from the RIM test or a focus on rates to the cost of operating the electric system, which is truly the appropriate way to consider resource decisions.

The results of all of these assumptions is that the utilities are proposing artificially low goals and will subsequently reduce the size and scope of their efficiency offerings. If approved, these dramatically lower goals will result in a continued under-evaluation of efficiency impacts in future proceedings, such as need determination hearings, and could result in unnecessary investment in expensive power plants.

Finally, the efficiency goal that SACE proposes ramps up from three-quarters of a percent, .75 percent of sales, to 1.5 percent by the 2020. In 2011, 14 states were saving 1 percent of sales or better. SACE is proposing that the Florida utilities achieve the level of savings that 14 states did in 2011 by 2016. My recommendation is based on national best practices benchmarking and my understanding of the Florida market.

In conclusion, I have three recommendations

for the Commission regarding this docket -- dockets.

First, reject the utilities' proposed goals and adopt SACE's recommended level of energy efficiency for the utilities.

Second, the Commission should use the TRC test to determine systemwide benefits of energy efficiency, not the RIM test.

Third, the Commission should eliminate the two-year payback screen and move to using actual data in evaluation, measurement, and verification to determine free-riders, as North Carolina, South Carolina, and Georgia do.

This concludes my summary. Thank you.

MS. TRIPLETT: Mr. Chairman, I'm sorry. At the beginning of Ms. Mims' summary, I thought I heard a reference an NAACP report, and I didn't want to interrupt the flow, because I wanted to check. I didn't see a reference to that in her direct testimony, and I didn't hear any further mention of it. So to the extent that she was referencing a report that wasn't in her summary, I would ask that that reference be stricken from the record.

CHAIRMAN GRAHAM: Is there a reference to the -- because I heard you say as well NAACP

report. Is there a reference to the report in your summary -- in your testimony somewhere?

THE WITNESS: I thought that I included one, but I may have omitted it.

MR. CAVROS: Chairman, if I could speak.

CHAIRMAN GRAHAM: Sure.

MR. CAVROS: The report is in evidence.

MR. BUTLER: That's not the standard for summaries.

CHAIRMAN GRAHAM: It's a summary of her testimony. Unless you can find it in her sum -- unless you can find it in her testimony, we'll go ahead and strike it, and let's move on.

THE WITNESS: I apologize.

CHAIRMAN GRAHAM: That's all right. You almost got away with it.

MR. CAVROS: Very well. We'll strike it.

THE WITNESS: Thank you.

CHAIRMAN GRAHAM: You can search through, and if you come up with it before we let this witness go, we'll talk then.

OPC.

MR. SAYLER: No questions.

CHAIRMAN GRAHAM: Department of Agriculture.

MR. HALL: No questions.

CHAIRMAN GRAHAM: NAACP.

MR. DREW: No questions.

CHAIRMAN GRAHAM: PCS.

MR. BREW: Yes. Thank you, Chairman.

CROSS-EXAMINATION

BY MR. BREW:

Q. Good evening, Ms. Mims.

A. Hi.

Q. I'm Jay Brew. I represent PCS Phosphate, one of Duke Energy's largest energy users.

You are, from your résumé, a lawyer by training?

A. I'm not an attorney.

Q. Okay. But by training, you went to law school?

A. I went to law school, but I did my master's. I didn't do my J.D.

Q. Okay. Have you ever been employed by a large energy user?

A. I have not.

Q. Have you ever had any responsibility for developing and operating a budget by a large energy user?

A. I have not.

Q. Do you have any direct knowledge of the

importance of electric rates to the budgets or operating schedules of a large energy user?

A. I have done consulting work large industrial users and understand the significance of electricity rates.

Q. So you agree that electricity rates are important to large --

A. I have heard many industrial customers express their opinion that their electricity rates are very important, yes.

Q. Thank you. For any customer -- would that include customers are that served at transmission voltages, generally?

A. I don't -- can you repeat the question?

Q. Would that concern apply generally to customers served at transmission voltages?

A. I have heard that concern expressed by customers that have their power delivered at high transmission.

Q. What about subtransmission voltage level customers?

A. I have not heard that concern, because I have not worked with industrial customers that get their power delivered at that level.

Q. Okay. What about customers generally that are

demand metered and have a portion of their rates set based on demand charges and a portion set by energy charges? Should those customers be expected to understand their rates?

A. I don't have an opinion upon whether or not they should understand their rates.

Q. Do you know if, generally speaking, customers that take service on a demand metered basis consider their rates to be important?

A. I don't have any direct experience with that.

Q. Okay. Would you agree that for a demand metered customer, their load factor matters, because it affects how they're billed?

A. I would agree with that.

Q. And so their load factor would affect their bill in terms of how the various rate components are applied to their usage; is that correct?

A. I believe so.

Q. Okay. I saw you in the audience. You were here when Dr. Fine was being cross-examined?

A. I was.

Q. Did you hear Mr. Moyle ask Dr. Fine about his personal electric rates?

A. I did.

Q. Did you hear him immediately indicate what his

cost per kilowatt-hour was under his tiered rate schedule?

A. I did.

Q. Would you expect that any customer that is served under an inverted rate design or a tiered rate schedule would consider those rates important?

A. I don't have any expectation about if customers will know what their rates are. I'm sorry.

Q. Would you expect that a customer that elects any kind of an optional rate where the rates are different from the standard rate would consider the rates important?

MR. CAVROS: Chairman, I'm just going to for a moment maybe just lodge a soft objection here and ask Mr. Brew to refer at least by page number and line.

MR. BREW: Page 23, line 5.

BY MR. BREW:

Q. Let me know when you have that reference.

A. I'm there.

Q. Okay. That reference in your testimony says, "Fortunately, the rate of electricity is not as important to most customers as the total amount on their bill." Do you see that?

A. I do.

Q. So when you refer to most customers, you're not referring to large energy users?

A. I would think that they would be concerned about their bill.

Q. You're not referring to customers that take service at transmission voltages?

A. I don't think that being concerned about your rates means you're not concerned about your bill.

Q. That's not my question. My question is whether or not those customers are concerned about their rates.

A. I would image they are concerned about their rates.

Q. Okay. What about customers served at subtransmission voltages? Are they concerned about their rates?

A. I believe that I already answered that question that I didn't have any experience with subtransmission level customers.

Q. I'm just trying to qualify when you say most customers, which customers you're referring to. To the extent that you're referring to most customers, are you including demand metered customers in this comment?

A. I suppose I was.

Q. You were? But you said previously that you

didn't know whether demand metered customers would consider the rate components of their rate important or not.

A. I think that the point that I was making in my testimony is --

Q. Look, you have to answer my question.

MR. CAVROS: I'm going to just --

THE WITNESS: I didn't speak to --

MR. CAVROS: That was a -- if you could rephrase.

CHAIRMAN GRAHAM: Hold on a second. Hold on. Hold on. I'll hear your objection.

MR. CAVROS: My objection is that the question was premised on a previous statement, and I'm not sure that Mr. Brew appropriately interpreted or recounted the previous statement in asking his next question.

MR. BREW: I'll be happy to restate my question just to keep things moving.

CHAIRMAN GRAHAM: You took the words right out of my mouth. Thank you.

BY MR. BREW:

Q. When you say, "The rate of electricity is not important to most customers," are you including in that statement customers that are demand metered, based on

actual, direct knowledge that you have?

A. No.

Q. Okay. When you make that same statement, are you including in that statement customers that have elected for an optional pricing rate?

A. When I made the statement, I meant most customers of all classes, all customers.

Q. Well, I'm trying to pin down which classes of customers you actually are referring to based on some actual study. So --

A. I understand that.

Q. Okay. So --

A. But -- so I would like to say that -- we can go through all of the rate classes, and I can say yes to all of them. But what I said is that most customers care about their bills.

Q. You said they are -- specifically, you said, "Fortunately, the rate of electricity is not as important to most customers," and I'm asking you by the type of customer and type of service that they take whether they consider the rate as important as their bills. And so my question again is, to be specific, for a customer that opts for an optional rate, would you expect them to consider the rate to be important in making that decision?

MR. CAVROS: Chairman, I'm going to file again an objection. This question has been asked and answered. The witness has said that customers care about their bills.

MR. BREW: No, but --

MR. CAVROS: And that bills are, you know, essentially a function of consumption and rates and --

MR. BREW: Mr. Cavros is --

MR. CAVROS: They consider both of those.

CHAIRMAN GRAHAM: Please finish. I want to hear your objection.

MR. CAVROS: Sure. My objection is that the question has been asked and answered.

CHAIRMAN GRAHAM: I don't think so. I hear where he's coming from, and I think where he's trying to pin her down is reading this line, "Fortunately, the rate of electricity is not as important to most customers." And what I hear him trying to do is say, what are most customers, and she has not said who most customers are, and so he said, is it this, is it this, is it this, is it this, is it this, and she said you can probably go through and go back and forth.

I don't know where the end of this question is

going to be, but I think there's a point you're trying to get to. Can we move to that?

MR. BREW: Yes.

CHAIRMAN GRAHAM: Okay.

BY MR. BREW:

Q. Ms. Mims, what type of customer or service class have you studied to form the basis for your statement on line 5?

A. Residential and commercial customers.

Q. Residential and commercial customers that are not demand metered?

A. Commercial customers that are demand metered.

Q. That are demand metered. Specifically, customers that have elected demand metered service or have it imposed on them?

A. I do not recall.

Q. You do not recall. Can you say for the commercial customers that you've studied whether or not they are aware of what their load shape is?

A. I cannot.

Q. Okay. What their load factor is?

A. I cannot.

Q. What effect their load factor has on their bills?

A. I cannot.

Q. Okay. I asked this question before, but I don't think I got an answer, so I'll just ask it one last time. For a customer that elects an optional rate, would you expect that customer to consider the optional rates levels to be important?

MR. CAVROS: Objection. I'm not sure of the relevance of that question.

MR. BREW: Again, it gets to the category of most customers and what were included.

CHAIRMAN GRAHAM: I'll allow it. You may want to say it again.

BY MR. BREW:

Q. For customers that elect an optional rate, is the optional rate -- is the difference between the optional rate and the standard rate presumably important to that customer?

A. I cannot say.

Q. Okay. Because you haven't studied it?

A. I don't have experience working with those customers.

MR. BREW: Okay.

CHAIRMAN GRAHAM: Is that it?

MR. BREW: That's it.

CHAIRMAN GRAHAM: Okay. FIPUG, go ahead.

MR. BREW: I have two more minutes, if you're

looking at the schedule.

CHAIRMAN GRAHAM: I'm sorry?

MR. BREW: I have just a couple more minutes with the witness, if you're thinking about --

CHAIRMAN GRAHAM: Oh, no, no, no. I thought you said that was it.

MR. BREW: Oh, no, no.

CHAIRMAN GRAHAM: Please continue.

MR. BREW: That is it with this.

CHAIRMAN GRAHAM: Continue.

MR. BREW: Now I feel bad. Never mind.

BY MR. BREW:

Q. Mr. Mims, on page 22 of your testimony, you show a Figure 5. Do you see that?

A. I do.

Q. And on Figure 5, which is labeled "Lazard 2013 Levelized Cost of Energy" -- is that correct?

A. That is what it says.

Q. Okay. Thank you. You show among the categories a line for energy efficiency. Do you see that?

A. I do.

Q. And that shows a levelized cost of energy from zero dollars to $50, and that's in dollars per megawatt-hour; is that correct?

A. That's what it shows.

Q. Would you describe what a zero item would be?

A. A zero cost item would be in a new construction building where you make an improvement that would have cost more had you not made it, like a design movement, passive solar. I think design in new construction is probably the easiest example.

Q. That has zero cost?

A. That's correct.

Q. Zero cost to the customer?

A. Zero cost as defined by this chart.

Q. On a levelized basis?

A. That's correct.

Q. Zero cost to other ratepayers?

A. This chart doesn't have anything to do with ratepayers.

Q. It's just the cost of the actual investment itself?

A. That's correct. It compares different resources at their cost.

Q. Is a change in customer behavior a potential zero cost way to do energy efficiency?

A. If the utility has to pay for the program, I would say it's not a zero cost measure.

Q. I'm talking about a change -- well, let's take

that a step at a time. Simply a behavioral thing, like telling your children to turn the lights out in their room, is that zero cost form of energy efficiency?

A. I would call that conservation.

Q. Okay. What about a change in utility rate design? Is that zero cost?

A. I think there's labor costs involved.

Q. In developing a rate design?

A. I would imagine that it doesn't just fall out of the air.

Q. Okay. So you're counting a change in pricing in the ratemaking process as a part of the cost of energy efficiency?

A. You asked me if it was a zero cost measure.

Q. Okay.

A. I would say there's labor cost involved.

Q. Okay. Once a change in rate design had been established, is there a program cost to the utility?

A. If you want people to know about the change in the rate design, I would imagine that there's a labor cost associated with it.

Q. Is there an incremental cost --

MR. CAVROS: Chairman, I'm going to lodge an objection again. We're getting really far afield from this chart. We're getting into rate design

issues, which Ms. Mims did not testify about.

MR. BREW: I'm just trying to figure out what constitutes a zero energy efficiency measure.

THE WITNESS: I've already explained that.

CHAIRMAN GRAHAM: I think that question has been answered.

BY MR. BREW:

Q. Okay. All right. Let's try it this way. You show a -- again, a range of energy efficiency costs between zero and $50 a megawatt-hour; right?

A. That's correct.

Q. Is there any more efficient or cost-effective action than an informed consumer making rational energy consumption decisions?

A. Can you repeat the question?

Q. Certainly. Is there any more efficient of cost-effective action that an informed consumer making rational energy consumption decisions?

A. I believe that I've already said I would characterize that as conservation.

Q. Okay. Is there any measure that you've listed on Figure 5 that is more cost-effective than an informed consumer making a rational decision?

A. These are resources in Figure 5, not measures.

MR. BREW: Okay. That's all I have.

THE WITNESS: Thank you.

CHAIRMAN GRAHAM: Okay. FIPUG.

MR. MOYLE: Thank you, Mr. Chairman.

CROSS-EXAMINATION

BY MR. MOYLE:

Q. Good afternoon. I think I only have one question, and you may have -- I think you've been here a couple of days. You may have heard the Chairman remark about there's a practice here where you try to answer yes or no. I don't really think my question needs an explanation, so if you could use your best efforts to answer it yes or no --

A. I'll do my best.

Q. Okay. And then I think we'll move on.

I actually have two questions, but I just want to confirm --

A. Oh, I see how it is.

Q. You're the director of energy efficiency for SACE; right?

A. That's correct. Or yes.

Q. Okay.

MR. CAVROS: Excuse me, Chairman. I would just like to clarify what Mr. Moyle said. The prehearing order says that actually the witness is allowed to answer a yes or a no and then allowed to

explain the answer. I just wanted to make sure we got the order right.

CHAIRMAN GRAHAM: Yes, briefly explain, correct.

BY MR. MOYLE:

Q. Yes. I don't mean to suggest you can't, but if you explain it may lead to some other questions. But anyway, we'll just -- let's just take it one step at a time.

Does your organization support cross-subsidization when establishing energy efficiency goals?

A. That's a pretty loaded question.

Q. I didn't say it was going to be easy.

A. I know. I would say that we --

Q. Could you say yes, no, and then --

A. Yes, we -- no, we do not support cross-subsidization. However, I believe that all energy decisions result in cross-subsidization, so it's irrelevant.

Q. I think you had said yes, and then you said no, so just to be clear --

A. I meant to say I do not -- we do not support cross-subsidization. I do not make an effort to go out of my way and support cross-subsidization. However, I

think that all energy resources result in cross-subsidization.

MR. MOYLE: Okay. Thank you.

THE WITNESS: Yes. Thank you.

CHAIRMAN GRAHAM: Okay. Sierra Club.

MS. CSANK: No questions.

CHAIRMAN GRAHAM: EDF.

MR. FINNIGAN: No question, Your Honor.

CHAIRMAN GRAHAM: Okay. Florida Power & Light.

MR. BUTLER: No questions for this witness.

CHAIRMAN GRAHAM: Duke.

MS. TRIPLETT: No questions, sir.

CHAIRMAN GRAHAM: TECO.

MR. BEASLEY: No questions.

CHAIRMAN GRAHAM: Gulf.

MR. GRIFFIN: No questions, Mr. Chairman.

CHAIRMAN GRAHAM: Staff.

MS. TAN: No questions.

CHAIRMAN GRAHAM: Commissioners. Commissioner Balbis.

COMMISSIONER BALBIS: Thank you. And thank you, Ms. Fine, for your testimony. I just have --

THE WITNESS: No, I'm Ms. Mims.

COMMISSIONER BALBIS: I'm sorry.

THE WITNESS: That's okay. Just don't confuse me --

COMMISSIONER BALBIS: It's been a long day.

THE WITNESS: -- with Dr. Fine. I didn't misquote your report. Don't get us confused.

COMMISSIONER BALBIS: Well, now we're on a good foot here. Okay.

THE WITNESS: I'm sorry.

COMMISSIONER BALBIS: Okay. I want to talk a little bit about a two-year payback discussion. You go into a great level of -- or a level of detail on using the two-year screening process. And I would like you to explain a little bit about your conclusion on using the RIM test and participant test where increase the incentive to reach a participant test of 1.0, and then checking that against the RIM test, and why this is inappropriate.

THE WITNESS: Okay. So you started off talking about two-year payback, and then you ended with a different -- from that I understand, a different question, so I'm going to have to ask you to tell me what you want me to tell you again. I'm sorry.

COMMISSIONER BALBIS: Sure. Some of the

utilities just use the two-year payback screen and eliminate -- to identify free-riders; correct?

THE WITNESS: That's correct.

COMMISSIONER BALBIS: Did all of the utilities use that?

THE WITNESS: I believe so.

COMMISSIONER BALBIS: Okay. Then can we go into a little bit on the -- FPL setting the incentive level to result in a participant screen test benefit/cost ratio of 1.0.

THE WITNESS: So my understanding is that there's two two-year screens in this process. The first one is to eliminate the free-riders. So when you have measures that pay back in less than two years, all of the utilities have eliminated those out. And then in order to set the appropriate incentive level from the utility's perspective, they have brought the -- when they add incentives in, when they're evaluating measures and turning them into the proposed goal, they try and add incentive levels in to bring the payback down to two years. And if it is not -- if the utilities not able to do that and still have the measure comply with RIM, then they've been eliminated. And if I have mischaracterized that, I would be open to

the utilities telling me I was wrong.

COMMISSIONER BALBIS: Okay. Well, let me --

THE WITNESS: So it's kind of confusing, because there's two different components of it.

COMMISSIONER BALBIS: And that's what I wanted to get to, because you kind of brushed on it and then didn't elaborate as to why it was inappropriate. So let's change gears just a little bit, but on the same topic.

You indicated that every other utility in the Southeast uses surveys and gather data to determine what is appropriate to identify free-riders. What have been the results of those surveys and data?

THE WITNESS: I think the easiest way to characterize it is that free-ridership is going to vary based on the measure and also based on program implementation. So, for example, Duke Energy Carolinas in North Carolina has a property manager CFL program where they give CFLs to the property managers, and then the property managers install them in the community area of multifamily and also provide them to the tenants. And that program has a 15 percent free-ridership rate.

So what the Florida utilities are assuming with the two-year payback -- because as I think

we've heard already, a CFL would have like a one-and-a-half year payback, so it would be eliminated because it has a less than two-year payback screen. They're assuming that it has a 100 percent free-ridership rate.

And in North Carolina, for the CFL, for the specific program, the property manager program, it has a 15 percent free-ridership rate. So, you know, that's a big difference. But, you know, there's other programs that have higher or lower free-ridership rates. Sometimes the consumer, after they receive an incentive, will buy -- just continuing with the CFL example, will go and buy more CFLs. And when they're surveyed, they'll report that not only did I take advantage of this incentive, but I just went ahead and bought three additional bulbs, and so that gets accounted into it as well. So the survey is quite broad, and there's different results for different program implementation and different measures. And there's hundreds of reports available for North Carolina, South Carolina, and Georgia.

COMMISSIONER BALBIS: So is SACE proposing then that we include all of the measures that did not pass the two-year screening test and then

perform surveys, gather data and information?

THE WITNESS: I've been thinking about that a lot. I think EM&V should definitely be completed in the next ECCR proceeding. I think that's the most appropriate place to do that, and that's where it's done in all of the other Southeastern utilities in their cost recovery proceeding.

I think for this proceeding at hand, I think that witness Duff is correct that it is too late to probably calculate free-ridership based on a evaluate, measurement, and verification. So I think that using a six-month or one-year payback might be more appropriate.

I don't think that it's probably feasible to take EM&V from the other jurisdictions and apply it to the measure. I think that at the program level it could be done, But not in this proceeding. So I think using a reduced payback period for this proceeding and then fixing it and moving forward is the most important thing, is to get, you know, real analysis and look at the evaluation, measurement, and verification of the programs moving forward in conjunction with the cost recovery to ensure that the ratepayers are receiving the biggest bang for their buck and that there's transparency in how

the utilities are implementing the efficiency programs.

COMMISSIONER BALBIS: Okay. And then you also recommend that the Commission adopt SACE's goals?

THE WITNESS: I do.

COMMISSIONER BALBIS: Okay. And do SACE's goals include what period of screening? Six months or a year?

THE WITNESS: I didn't include screening. It's benchmarking, which I know is contentious, but I believe that it's appropriate look around the Southeast and see what the other utilities are doing and say that Florida can reach that level, the Florida utilities can reach that level of efficiency and can ramp up.

I forgot what else I was going to say about that.

COMMISSIONER BALBIS: Well, I don't know if you answered it. So, SACE's goals, did they include all those measures that were eliminate by the two-year screening?

THE WITNESS: It's not specific to the measures. It's a percentage as -- it's a savings as a percentage of retail sales. So some of those measures could be included and some of them could

not. It would be up to the utility when they move into their program planning phase to chose to adopt measures that they believe are not going to have a high free-ridership rate.

And I think that when they move into their program planning phase, it will be much easier to talk about what programs would -- what measures could go into what programs and what programs would not have a high free-ridership rate, based on experience in the Southeast, which is not going to be a one-to-one comparison, but it can certainly guide the process.

COMMISSIONER BALBIS: Okay. Thank you.

CHAIRMAN GRAHAM: Okay. Redirect.

MR. CAVROS: Just a couple. Thank you.

REDIRECT EXAMINATION

BY MR. CAVROS:

Q. Ms. Mims, in relation to Commissioner Balbis' question, you had stated that perhaps it may be too late in this proceeding to use EM&V to establish free-ridership rates, but rather probably more prudent to do it going forward. And just to clarify, you -- when you referenced perhaps using a lower screen or no screen in a proceeding, you were referring to this specific proceeding?

A. That's correct. I guess I would add that I feel that EM&V -- so EM&V is a program level cost or a program level endeavor, and I would also point that administrative costs are a program level endeavor, and the utilities have found a way to apply administrative costs to measures. So I think that if there was a desire to see EM&V applied to the measure level, they could do it. It just probably wouldn't be that clean.

Q. And in response to Commissioner Bablis' question about the two-year screen, you indicated that all the utilities use the two-year payback screen to eliminate free-riders. Just to clarify, what's your understanding of how the utilities apply free-ridership across all measures?

A. My understanding is that utilities eliminated the measures that didn't pass the two-year screen in the economic payback and that it resulted in between 3,000 and 13,000 gigawatt-hour reduction in the potential across all four utilities.

Q. And earlier counsel from PCS Phosphate asked you about the cost of a program whereby someone is asked to turn off their lights. Do you recall that?

A. I do.

Q. Would that pass the RIM test?

A. If people turned off their light bulbs? I am

not going to make the assumptions as to whether or not it's going to pass RIM. I think that it would depend on if someone had told them to do it on a radio message or not.

MR. CAVROS: That's all I have, Chairman. Thank you.

CHAIRMAN GRAHAM: Okay. Exhibits.

MR. CAVROS: We would like to enter SACE Exhibits 66 to 74 into the record, please.

CHAIRMAN GRAHAM: Okay. We'll enter those exhibits into the record.

(Exhibits 66 through 74 were admitted into the record.)

CHAIRMAN GRAHAM: I don't think we have any other exhibits, so I believe that, Ms. Mims, we're done. Thank you very much.

THE WITNESS: And I'm done five minutes early.

CHAIRMAN GRAHAM: That you are.

THE WITNESS: Thank you.

CHAIRMAN GRAHAM: I did say on Monday that we were going to stop today at 5:30. I think we're as close to 5:30 as we're going efficiently get, so will recess adjourn until tomorrow morning at 9:30. And we will try to see how much of this we can get done with tomorrow, and we'll probably look at it

around noon or around 5:00. But I would say if you get tired early, bring a No-Doz and a pillow.

I will see you all tomorrow. Travel safely.

(Proceedings recessed at 5:26 p.m.)

(Transcript continues in sequence in Volume 5.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA:

COUNTY OF LEON:

I, MARY ALLEN NEEL, Registered Professional Reporter, do hereby certify that the foregoing proceedings were taken before me at the time and place 3therein designated; that my shorthand notes were thereafter translated under my supervision; and the foregoing pages numbered 797 through 1059 are a true and correct record of the aforesaid proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor relative or employee of such attorney or counsel, or financially interested in the foregoing action.

DATED THIS 8th day of August, 2014.

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